

Qualitative and Quantitative Assessment of the “Dangerous Activities” Categories

Jens H. Kuhn

July 2005



CISSM
School of Public Policy
4113 Van Munching Hall
University of Maryland
College Park, MD 20742
Tel: (301) 405-7601
cissm@umd.edu

This paper was prepared as part of the Advanced Methods of Cooperative Security Program at the Center for International and Security Studies at Maryland, with generous support from the MacArthur Foundation and the Sloan Foundation.

**QUALITATIVE AND QUANTITATIVE ASSESSMENT OF THE
“DANGEROUS ACTIVITIES” CATEGORIES DEFINED BY THE CISSM
CONTROLLING DANGEROUS PATHOGENS PROJECT**

WORKING PAPER (July 31, 2005)

Jens H. Kuhn, MD, ScD (Med. Sci.), MS (Biochem.)

Contact Address:

New England Primate Research Center

Department of Microbiology and Molecular Genetics

Harvard Medical School

1 Pine Hill Drive

Southborough, MA 01772-9102, USA

Phone: (508) 786-3326

Fax: (508) 786-3317

Email: jens_kuhn@hms.harvard.edu

OBJECTIVE

The Controlling Dangerous Pathogens Project of the Center for International Security Studies at Maryland (CISSM) outlines a prototype oversight system for ongoing microbiological research to control its possible misapplication. This so-called Biological Research Security System (BRSS) foresees the creation of regional, national, and international oversight bodies that review, approve, or reject those proposed microbiological research projects that would fit three BRSS-defined categories: Potentially Dangerous Activities (PDA), Moderately Dangerous Activities (MDA), and Extremely Dangerous Activities (EDA). It is the objective of this working paper to assess these categories qualitatively and quantitatively. To do so, published US research of the years 2000-present (early- to mid-2005) will be screened for science reports that would have fallen under the proposed oversight system had it existed already. Qualitatively, these selective reports will be sorted according to the subcategories of each individual Dangerous Activity, broken down by microbiological agent, and year. Quantitatively, institutes and researchers, which conducted research that would have fallen under review by BRSS, will be listed according to category and year. Taken together, the results of this survey will give an overview of the number of research projects, institutes, and researchers that would have been affected had the new proposed system existed, and thus should allow estimating the potential impact of BRSS on US microbiological academic and industrial research in the future. Furthermore, this working paper might aid refining the proposed system.

INTRODUCTION

Over the last years, the number of scientific advances and inventions has increased exponentially. To date, there is no effective mechanism to evaluate the potential implications of the ever-growing number of scientific experiments. Benign and legitimate research might lead to results, which, in the wrong hands, could be misused to threaten entire human, animal, or plant populations. This holds true especially for microbiological and genomic research.

Recently, a prototype oversight system (“Controlling Dangerous Pathogens Project”) has been proposed by a working group of the Center for International Security Studies at Maryland (CISSM). This Biological Research Security System (BRSS) aims to achieve more protection against deliberate or inadvertent misapplication of microbiological research.¹ BRSS envisions complementing the 1972 Biological Toxins and Weapons Convention. It is supposed to be legally binding to countries that would choose to abide to the system, which foresees the creation of international, national, and regional governmental oversight bodies.

It is impossible to survey the complete microbiological literature on a regular basis. However, certain experiments are more likely to yield results that could be misused than others. Similarly, certain microbiological agents are more likely to be considered for illegitimate purposes than others. The Controlling Dangerous Pathogens Project has established three categories, which outline the most critical research to be controlled. These Potentially Dangerous Activities (PDA), Moderately Dangerous Activities (MDA), and Extremely Dangerous Activities

¹ Steinbruner, John, Elisa D. Harris, Nancy Gallagher, and Stacy Gunther. 2003. Controlling Dangerous Pathogens: A Prototype Protective Oversight System. Center for International Security Studies at Maryland, USA. [Online.] <http://www.cissm.umd.edu/documents/pathogensmonograph.pdf>

(EDA) would be monitored by the governmental oversight bodies. These Dangerous Activities are currently defined as follows:

Potentially Dangerous Activities (PDA):

1. Work with listed agent— or exempt avirulent, attenuated, or vaccine strain of select agent — not covered by EDA/MDA
2. Increasing virulence of non-listed agent
3. Increasing transmissibility or environmental stability of non-listed agent
4. Powder or aerosol production of non-listed agent
5. Powder or aerosol dispersal of non-listed agent
6. *De novo* synthesis of non-listed agent
7. Genome transfer, genome replacement, or cellular reconstitution of non-listed agent

Moderately Dangerous Activities (MDA):

1. Increasing virulence of listed agent or related agent
2. Insertion of host genes into listed agent or related agent
3. Increasing transmissibility or environmental stability of listed agent or related agent
4. Powder or aerosol production of listed agent or related agent
5. Powder or aerosol dispersal of listed agent or related agent
6. *De novo* synthesis of listed agent or related agent
7. Construction of antibiotic- or vaccine-resistant related agent
8. Genome transfer, genome replacement, or cellular reconstitution of listed agent or related agent

Extremely Dangerous Activities (EDA):¹

1. Work with eradicated agent (eradicated agent includes work with the 1918 Influenza A virus, derivatives of the 1918 Influenza A virus, and chimeric influenza virus with at least one gene from the 1918 Influenza A virus)

¹ In a previous version of the Controlling Dangerous Pathogens Project's categories, an EDA subcategory "Work with revived extinct agent related to listed agent" was included. The author suggests to reintroduce this subcategory, because such work is potentially dangerous; and scientific success has been achieved in this field by US groups (*e.g.* the revival of ancient *Bacillus*, *Halobacterium*, and other bacterial strains from amber and other materials).

2. Work with agent requiring Biosafety Level-4
3. *De novo* synthesis of eradicated agent/agent requiring Biosafety Level-4
4. Expanding host range of agent to new host (in humans, other animals and plants) or changing the tissue range of a listed agent
5. Construction of antibiotic- or vaccine-resistant listed agent

For these categories, an “agent” has been defined as a “fungus, protist, rickettsia, bacterium, virus, viroid, or prion; or genetic element, recombinant nucleic acid, or recombinant organism”. A “listed agent” has been defined as an “agent on [the] CDC Select Agent list, USDA High-Consequence Livestock Pathogens list, or USDA/APHIS/PPQ Plant Pathogens list” with the exception of toxins. The Centers for Disease Control and Prevention (CDC) Select Agent and US Department of Agriculture (USDA) High-Consequence Livestock Pathogens lists overlap.¹ The agents that are listed on the three different lists are, in alphabetical order, the following:

CDC/DHSS NON-OVERLAP SELECT AGENTS²

- Crimean-Congo hemorrhagic fever virus
- *Coccidioides posadasii*
- Cercopithecine herpesvirus 1
- Filoviruses
- Kyasanur forest disease virus
- Lassa virus
- Monkeypox virus
- Omsk hemorrhagic fever virus
- *Rickettsia prowazekii*
- *Rickettsia rickettsii*
- South American hemorrhagic fever viruses (Flexal virus, Guanarito virus, Junín virus, Machupo virus, Sabiá virus)
- Tick-borne encephalitis virus (Far Eastern, and Western European subtypes)
- Variola virus

¹ [Online.] http://www.aphis.usda.gov/programs/ag_selectagent/index.html, and <http://www.cdc.gov/od/sap/docs/salist.pdf>.

² The list has been modified to fit the current taxonomy of the listed agents (see Method section).

- *Yersinia pestis*

HIGH CONSEQUENCE LIVESTOCK PATHOGENS/SELECT AGENTS (OVERLAP AGENTS)

- *Bacillus anthracis*
- *Brucella melitensis* (strains abortus, melitensis, and suis)
- *Burkholderia mallei*
- *Burkholderia pseudomallei*
- *Clostridium botulinum* (neurotoxin-producing)
- *Coccidioides immitis*
- *Coxiella burnetii*
- Eastern equine encephalitis virus
- henipaviruses
- *Francisella tularensis*
- Rift Valley fever virus
- Venezuelan equine encephalitis virus

USDA HIGH CONSEQUENCE LIVESTOCK PATHOGENS (NON-OVERLAP AGENTS)

- African horse sickness virus
- Akabane virus
- Alcelaphine herpesvirus 1,2 (formerly known as Malignant catarrhal fever viruses, exotic strains only)
- African swine fever virus
- Bluetongue virus (exotic)
- Bovine spongiform encephalopathy prion
- Camelpox virus
- Classical swine fever virus
- *Ehrlichia ruminantium* (formerly known as *Cowdria ruminantium*)
- Foot-and-mouth disease virus
- Goatpox virus
- Human enterovirus B (strain Human coxsackievirus B5 (formerly Swine vesicular disease virus))
- Lumpy skin disease virus
- Influenza A virus (avian highly pathogenic strains; eradicated agent according to table above)
- Japanese encephalitis virus
- Menangle virus

- *Mycoplasma capricolum*
- *Mycoplasma mycoides capri*
- *Mycoplasma mycoides mycoides*
- Newcastle disease virus
- Peste-des-petits-ruminants virus
- Rinderpest virus
- Sheeppox virus
- Vesicular stomatitis virus (exotic)

LISTED PLANT PATHOGENS

- “*Candidatus Liberobacter africanus*“
- “*Candidatus Liberobacter asiaticus*“
- *Peronosclerospora phillippinensis*
- *Phakopsora pachyrhizi*
- Plum pox virus
- *Ralstonia solanacearum* race 3, biovar 2
- *Sclerophthora rayssiae* var. *zeae*
- *Synchytrium endobioticum*
- *Xanthomonas oryzae*
- *Xylella fastidiosa* (citrus variegated chlorosis strain)

Biosafety Level (BSL)-4 refers to those agents, which have been classified as especially dangerous by the CDC/DHSS and the National Institutes of Health (NIH).¹ These are:

- Certain Arenaviruses (Guanarito virus, Junín virus, Lassa virus, Machupo virus)
- Crimean-Congo hemorrhagic fever virus
- Filoviruses
- Kyasanur Forest disease virus
- Omsk hemorrhagic fever virus
- Tick-borne encephalitis virus (Far Eastern, and Western European subtypes)

¹ U. S. Department of Health and Human Services (Public Health Service), Centers for Disease Control and Prevention, and National Institutes of Health. 1999. Biosafety in Microbiological and Biomedical Laboratories, 4th ed. HHS Publication No. (CDC) 93-8395. U.S. Government Printing Office, Washington, DC, USA [Online.] <http://bmbi.od.nih.gov/>

Furthermore, Cercopithecine herpesvirus 1, hantaviruses, and henipaviruses (Hendra and Nipah viruses) are classified as BSL-4 viruses when animal experiments are performed or “large” quantities are used. Western European subtype strains of tick-borne encephalitis virus are BSL-3 agents if the researcher is vaccinated against them.¹

A “related agent” has been defined “for fungi, protists, rickettsiae, or bacteria, an agent in the same genus as a listed agent; for viruses, viroids, or prions, an agent in the same family as a listed agent; for genetic elements, recombinant nucleic acids, or recombinant organisms, an agent orthologous to a listed agent. (This category includes any avirulent, attenuated, or vaccine strain of a listed agent, if said strain is exempt under the CDC Select Agent list, the USDA High-Consequence Livestock Pathogens list, or USDA/APHIS/PPQ Plant Pathogens list.)”. According to this definition the following agents are “related agents”:

Related to African horse sickness virus, Bluetongue virus (exotic):

Andasibe virus
Aquareovirus A-F
Avian orthoreovirus
Baboon orthoreovirus
Banna virus
Banna virus
Bluetongue virus
Buthus occitanus reovirus
Carcinus mediterraneus W2 virus
Ceratitis capitata reovirus
Changuinola virus

¹ This biosafety classification is somewhat old. Recently discovered agents like Alkhumra virus, also known as Alkhurma or Fakeeh virus (related to Kyasanur Forest disease virus), and Garrissa virus (a novel Ngari virus recombinant) are not yet included. A new edition of the BMBL manual is in preparation, but has not been published yet.

Chenuda virus
Chobar Gorge virus
Choristoneura fumiferana cypovirus
Chub reovirus Germany
Cimex lactularius reovirus
Codajas virus
Colorado tick fever virus
Corriparta virus
Cypovirus 1-14
Dacus oleae reovirus
Diadromus pulchellus reovirus
Drosophila reoviruses
Duck reovirus
Echinochloa ragged stunt virus
Epizootic hemorrhagic disease virus
Equine encephalosis virus
Eubenangee virus
Eyach virus
Fiji disease virus
Garlic dwarf virus
Grass carp reovirus
Great Island virus
Hard clam reovirus
Heliothis armigera cypovirus
Hyposoter exiguae reovirus
Ieri virus
Ife virus
Itupiranga virus
Japanaut virus
Kadipiro virus
Kammavanpettai virus
Lake Clarendon virus
Landlocked salmon reovirus
Lebombo virus
Macropipus depurator P reovirus
Maize rough dwarf virus
Mal del Rio Cuarto virus
Mammalian orthoreovirus
Matucare virus
Musca domestica reovirus
Ndelle virus
Nelson Bay orthoreovirus
Nilaparvata lugens reovirus

Oat sterile dwarf virus
Orungo virus
Palyam virus
Pangola stunt virus
Peruvian horse virus
Peruvian rodent virus
Porcelio dilatatus reovirus
Python orthoreovirus
Rattlesnake orthoreovirus
Rice black streaked dwarf virus
Rice dwarf virus
Rice gall dwarf virus
Rice ragged stunt virus
Rotavirus A-G
St Croix River virus
Tembe virus
Tench reovirus
Tobacco leaf enation phytoreovirus
Tracambe virus
Umatilla virus
Wad Medani virus
Wallal virus
Warrego virus
Wongorr virus
Wound tumor virus

Related to African swine fever virus:

None.

Related to Akabane virus, Crimean-Congo hemorrhagic fever virus, Rift Valley fever virus:

Acara virus
Aguacate virus
Alajuela virus
Andes virus
Anhanga virus
Anopheles A virus
Anopheles B virus
Antequera virus
Aransas Bay virus
Arboledas virus
Arumowot virus

Bakau virus
Bangui virus
Barranqueras virus
Batama virus
Bayou virus
Belem virus
Belmont virus
Benevides virus
Bertioga virus
Bhanja virus
Bimiti virus
Black Creek Canal virus
Bobaya virus
Botambi virus
Bujaru virus
Bunyamwera virus
Bushbush virus
Bwamba virus
Caddo Canyon virus
Caimito virus
California encephalitis virus
Cano Delgadito virus
Capim virus
Caraparu virus
Catu virus
Chagres virus
Chandiru virus
Chilibre virus
Chim virus
Chrysanthemum stem necrosis virus
Corfou virus
Dera Ghazi Khan virus
Dobrava-Belgrade virus
Dugbe virus
El Moro Canyon virus
Enseada virus
Estero Real virus
Forecariah virus
Frijoles virus
Gabek Forest virus
Gamboa virus
Gan Gan virus
Garissa virus

Gloxinia tospovirus
Gordil virus
Groundnut bud necrosis virus
Groundnut chlorotic fan-spot virus
Groundnut ringspot virus
Groundnut yellow spot virus
Guajara virus
Guama virus
Guaroa virus
Hantaan virus
Hughes virus
Impatiens necrotic spot virus
Iris yellow spot virus
Isla Vista virus
Issyk-Kul virus
Itaporanga virus
Kaeng Khoi virus
Kairi virus
Kaisodi virus
Kasokero virus
Keterah virus
Khabarovsk virus
Kismayo virus
Koongol virus
Kowanyama virus
Laguna Negra virus
Lanjan virus
Leanyer virus
Lone Star virus
Madrid virus
Main Drain virus
Manzanilla virus
Mapputta virus
Maprik virus
Marituba virus
Melon yellow spot virus
Minatitlan virus
Mojui dos Campos virus
M'Poko virus
Muleshoe virus
Nairobi sheep disease virus
New York virus
Nyando virus

Odrenisrou virus
Okola virus
Olifantsvlei virus
Oriboca virus
Oropouche virus
Pacora virus
Pacui virus
Patois virus
Physalis severe mottle virus
Prospect Hill virus
Punta Toro virus
Puumala virus
Qalyub virus
Razdan virus
Resistencia virus
Rio Grande virus
Rio Mamore virus
Rio Segundo virus
Saint-Floris virus
Sakhalin virus
Salanga virus
Salehebad virus
Sandfly fever Naples virus
Sandfly fever Sicilian virus
Santarem virus
Sathuperi virus
Seoul virus
Shamonda virus
Shuni virus
Silverwater virus
Simbu virus
Sin Nombre virus
Sunday Canyon virus
Tacaiuma virus
Tai virus
Tamdy virus
Tanga virus
Tataguine virus
Termeil virus
Tete virus
Thailand tomato tospovirus
Thailand virus
Thiafora virus

Thimiri virus
 Thottapalayam virus
 Timboteua virus
 Tomato chlorotic spot virus
 Tomato spotted wilt virus
 Topografov virus
 Trubanaman virus
 Tula virus
 Turlock virus
 Upolu virus
 Urucuri virus
 Uukuniemi virus
 Wanowrie virus
 Watermelon bud necrosis virus
 Watermelon silver mottle virus
 Witwatersrand virus
 Wyeomyia virus
 Yacaaba virus
 Yogue virus
 Zegla virus
 Zucchini lethal chlorosis virus

Related to Alcelaphine herpesvirus 1,2 (exotic), Cercopithecine herpesvirus 1:

Acciptrid herpesvirus 1
 Acipenserid herpesvirus 1,2
 Anatid herpesvirus 1
 Anguillid herpesvirus 1
 Aotine herpesvirus 1,3
 Ateline herpesvirus 1-3
 Boid herpesvirus 1
 Bovine herpesvirus 1,2,4,5
 Bubaline herpesvirus 1
 Callitrichine herpesvirus 1-3
 Canid herpesvirus 1
 Caprine herpesvirus 1
 Caviid herpesvirus 1,3
 Cebine herpesvirus 1,2
 Cercopithecine herpesvirus 2-5,8,10-17
 Cervid herpesvirus 1,2
 Chelonid herpesvirus 1-4
 Ciconiid herpesvirus 1
 Columbidae herpesvirus 1

Cricetid herpesvirus
Cyprinid herpesvirus 1,2
Elapid herpesvirus 1
Elephantid herpesvirus 1
Equid herpesvirus 1-9
Erinaceid herpesvirus 1
Esocid herpesvirus 1
Falconid herpesvirus 1
Felid herpesvirus 1
Gallid herpesvirus 1-3
Gruid herpesvirus 1
Hippotragine herpesvirus 1
Human herpesvirus 1-8
Ictalurid herpesvirus 1
Lacertid herpesvirus 1
Leporid herpesvirus 1-3
Lorisine herpesvirus 1
Macropodid herpesvirus 1,2
Marmomid herpesvirus 1
Meleagrid herpesvirus 1
Murid herpesvirus 1-6
Mustelid herpesvirus 1
Ostreid herpesvirus 1
Percid herpesvirus 1
Perdacid herpesvirus 1
Phalacrocoracid herpesvirus 1
Phocid herpesvirus 1
Pleuronectid herpesvirus
Pongine herpesvirus 1-4
Psittacid herpesvirus 1
Ranid herpesvirus 1,2
Saimiriine herpesvirus 1,2
Salmonid herpesvirus 1,2
Sciurid herpesvirus 1,2
Sphenicid herpesvirus 1
Strigid herpesvirus 1
Suid herpesvirus 1,2
Tupauid herpesvirus 1

Related to *Bacillus anthracis*:

Bacillus aeolius

Bacillus agaradhaerens

Bacillus alcalophilus
Bacillus amyloliquefaciens
Bacillus aquimaris
Bacillus arseniciselenatis
Bacillus atrophaeus
Bacillus azotoformans
Bacillus badius
Bacillus barbaricus
Bacillus bataviensis
Bacillus benzoovorans
Bacillus carboniphilus
Bacillus cereus
Bacillus chitinolyticus
Bacillus circulans
Bacillus clarkii
Bacillus clausii
Bacillus coagulans
Bacillus cohnii
Bacillus decolorationis
Bacillus drementensis
Bacillus edaphicus
Bacillus endophyticus
Bacillus fastidiosus
Bacillus firmus
Bacillus flexus
Bacillus fumarioli
Bacillus funiculus
Bacillus fusiformis
Bacillus gibsonii
Bacillus globisporus
Bacillus halmapalus
Bacillus haloalkaliphilus
Bacillus halodenitrificans
Bacillus halodurans
Bacillus halophilus
Bacillus horikoshii
Bacillus horti
Bacillus infernus
Bacillus insolitus
Bacillus jeotgali
Bacillus krulwichiae
Bacillus laevolacticus
Bacillus lentus

Bacillus licheniformis
Bacillus luciferensis
Bacillus marisflavi
Bacillus megaterium
Bacillus methanolicus
Bacillus mojavenensis
Bacillus mucilaginosus
Bacillus mycoides
Bacillus naganoensis
Bacillus nealsonii
Bacillus neidei
Bacillus niacini
Bacillus novalis
Bacillus odysseyi
Bacillus okuhidensis
Bacillus oleronius
Bacillus pallidus
Bacillus pantothenicus
Bacillus pseudalcaliphilus
Bacillus pseudofirmus
Bacillus pseudomycoides
Bacillus psychrodurans
Bacillus psychrosaccharolyticus
Bacillus psychrotolerans
Bacillus pumilus
Bacillus pycnus
Bacillus schlegelii
Bacillus selenitireducens
Bacillus silvestris
Bacillus simplex
Bacillus siralis
Bacillus smithii
Bacillus soli
Bacillus sonorensis
Bacillus sphaericus
Bacillus sporothermodurans
Bacillus subterraneus
Bacillus subtilis
Bacillus thermantarcticus
Bacillus thermoamylovorans
Bacillus thermocloacae
Bacillus thuringiensis
Bacillus tuscia

Bacillus vallismortis
Bacillus vedderi
Bacillus vireti
Bacillus vulcani
Bacillus weihenstephanensis

Related to Bluetongue virus:

See African horse sickness virus

Related to Bovine spongiform encephalopathy prion:

Prions (Chronic wasting disease prion, Creutzfeldt-Jakob disease prion, Exotic ungulate encephalopathy prion, Fatal familial insomnia prion, Feline spongiform encephalopathy prion, Gerstmann-Sträussler-Scheinker syndrome prion, Kuru prion, Scrapie prion, Transmissible mink encephalopathy prion)

Related to *Brucella melitensis* (strains abortus, melitensis, suis):

Brucella melitensis (strains canis, neotomae, ovis)

Related to *Burkholderia mallei*, *Burkholderia pseudomallei*:

Burkholderia ambifaria
Burkholderia andropogonis
Burkholderia anthina
Burkholderia caledonica
Burkholderia caribensis
Burkholderia caryophylli
Burkholderia cenocepacia
Burkholderia cepacia
Burkholderia cocovenenans
Burkholderia fungorum
Burkholderia gladioli
Burkholderia glathei
Burkholderia glumae
Burkholderia graminis
Burkholderia hospita
Burkholderia kururiensis
Burkholderia multivorans
Burkholderia phenazinium
Burkholderia phymatum
Burkholderia plantarii

Burkholderia pyrrocinia
Burkholderia sacchari
Burkholderia sordidicola
Burkholderia stabilis
Burkholderia terricola
Burkholderia thailandensis
Burkholderia tuberum
Burkholderia ubonensis
Burkholderia vandii
Burkholderia vietnamiensis

Related to Camelpox virus, Goatpox virus, Monkeypox virus, Lumpy skin disease virus, Sheeppox virus, Variola virus:

Acrobasis zelleri entomopoxvirus 'L'
 Aedes aegypti entomopoxvirus
 Amsacta moorei entomopoxvirus 'L'
 Anomala cuprea entomopoxvirus
 Aphodius tasmaniae entomopoxvirus
 Arphia conspersa entomopoxvirus 'O'
 Auzduk disease virus
 Bovine papular stomatitis virus
 California harbor seal poxvirus
 Camptochironomus tentans entomopoxvirus
 Canarypox virus
 Chamois contagious ecthyma virus
 Chironomus attenuatus entomopoxvirus
 Chironomus luridus entomopoxvirus
 Chironomus plumosus entomopoxvirus
 Choristoneura biennis entomopoxvirus 'L'
 Choristoneura conflictata entomopoxvirus 'L'
 Choristoneura diversuma entomopoxvirus 'L'
 Choristoneura fumiferana entomopoxvirus 'L'
 Chorizagrotis auxiliars entomopoxvirus 'L'
 Cotia virus
 Cowpox virus
 Crowpox virus
 Demodema boranensis entomopoxvirus
 Dermolepida albohirtum entomopoxvirus
 Dolphin poxvirus
 Ectromelia virus
 Embu virus
 Figulus subleavis entomopoxvirus

Fowlpox virus
Geotrupes sylvaticus entomopoxvirus
Goeldichironomus haloprasimus entomopoxvirus
Grey kangaroo poxvirus
Hare fibroma virus
Heliothis armigera entomopoxvirus 'L'
Ips typographus entomopoxvirus
Juncopox virus
Locusta migratoria entomopoxvirus 'O'
Marmoset poxvirus
Melanoplus sanguinipes entomopoxvirus 'O'
Melolontha melolontha entomopoxvirus
Molluscum contagiosum virus
Molluscum-like poxvirus
Mule deer poxvirus
Mynahpox virus
Myxoma virus
Nile crocodile poxvirus
Oedaleus senigalensis entomopoxvirus 'O'
Operophtera brumata entomopoxvirus 'L'
Orf virus
Othnonius batesi entomopoxvirus
Parapoxvirus of red deer in New Zealand
Peacockpox virus
Penguinpox virus
Phyllopertha horticola entomopoxvirus
Pigeonpox virus
Pseudaletia separata entomopoxvirus 'L'
Pseudocowpox virus
Psittacinepox virus
Quailpox virus
Quokka poxvirus
Rabbit fibroma virus
Raccoonpox virus
Red kangaroo poxvirus
Salanga poxvirus
Schistocera gregaria entomopoxvirus 'O'
Sealpox virus
Sparrowpox virus
Spectacled caiman poxvirus
Squirrel fibroma virus
Squirrel parapoxvirus
Starlingpox virus

Swinepox virus.
 Tanapox virus
 Taterapox virus
 Turkeypox virus
 Vaccinia virus
 Vole poxvirus
 Volepox virus
 Yaba monkey tumor virus
 Yoka poxvirus

Related to “*Candidatus Liberobacter africanus*”, “*Candidatus Liberobacter asiaticus*”:
 None.

Related to Classical swine fever virus, Japanese encephalitis virus, Kyasanur Forest disease virus, Omsk hemorrhagic fever virus, Tick-borne encephalitis virus (Far Eastern, and Western European subtypes):

Apoi virus
 Aroa virus
 Bagaza virus
 Banzi virus
 Border disease virus
 Bouboui virus
 Bovine viral diarrhea virus 1,2
 Bukalasa bat virus
 Cacipacore virus
 Carey Island virus
 Cowbone Ridge virus
 Dakar bat virus
 Dengue virus
 Edge Hill virus
 Entebbe bat virus
 Gadgets Gully virus
 GB virus A,B,C
 GB virus C troglodytes
 GBV-A-like agents
 Hepatitis C virus
 Hepatitis G virus
 HGV-Iowan
 Ilheus virus
 Israel turkey meningoencephalomyelitis virus
 Jugra virus

Jutiapa virus
Kadam virus
Kedougou virus
Kokobera virus
Koutango virus
Langat virus
Louping ill virus
Meaban virus
Modoc virus
Montana myotis leukoencephalitis virus
Murray Valley encephalitis virus
Ntaya virus
Phnom Penh bat virus
Powassan virus
Rio Bravo virus
Royal Farm virus
Saboya virus
Sal Vieja virus
San Perlita virus
Saumarez Reef virus
Sepik virus
St. Louis encephalitis virus
Tembusu virus
Tick-borne encephalitis virus
Tyuleniy virus
Uganda S virus
Usutu virus
Wesselsbron virus
West Nile virus
Yaounde virus
Yellow fever virus
Yokose virus
Zika virus

Related to *Clostridium botulinum* (neurotoxin-producing):

Clostridium absonum
Clostridium aceticum
Clostridium acetireducens
Clostridium acetobutylicum
Clostridium acidisoli
Clostridium acidurici
Clostridium aerotolerans

Clostridium akagii
Clostridium aldrichii
Clostridium algidicarnis
Clostridium algidixylanolyticum
Clostridium aminophilum
Clostridium aminovalericum
Clostridium amygdalinum
Clostridium arcticum
Clostridium argentinense
Clostridium aurantibutyricum
Clostridium baratii
Clostridium beijerinckii
Clostridium bifermentans
Clostridium botulinum
Clostridium bowmanii
Clostridium butyricum
Clostridium cadaveris
Clostridium caminithermale
Clostridium carnis
Clostridium celatum
Clostridium celerecrescens
Clostridium cellobioparum
Clostridium cellulofermentans
Clostridium cellulolyticum
Clostridium cellulosi
Clostridium cellulovorans
Clostridium chartatabidum
Clostridium chauvoei
Clostridium clostridioforme
Clostridium coccoides
Clostridium cochlearium
Clostridium cocleatum
Clostridium colicanis
Clostridium colinum
Clostridium collagenovorans
Clostridium cylindrosporum
Clostridium difficile
Clostridium diolis
Clostridium disporicum
Clostridium estertheticum
Clostridium fallax
Clostridium felsineum
Clostridium fimetarium

Clostridium formicaceticum
Clostridium frigidicarnis
Clostridium frigoris
Clostridium gasigenes
Clostridium ghonii
Clostridium glycolicum
Clostridium grantii
Clostridium haemolyticum
Clostridium halophilum
Clostridium hastiforme
Clostridium hathewayi
Clostridium herbivora
Clostridium histolyticum
Clostridium homopropionicum
Clostridium hungatei
Clostridium hylemonae
Clostridium indolis
Clostridium innocuum
Clostridium intestinale
Clostridium irregulare
Clostridium isatidis
Clostridium josui
Clostridium kluveri
Clostridium lactatifermentans
Clostridium lacusfryxellense
Clostridium lentocellum
Clostridium lentoputrescens
Clostridium leptum
Clostridium limosum
Clostridium litorale
Clostridium lituseburense
Clostridium ljungdahlii
Clostridium magnum
Clostridium malenominatum
Clostridium manganotii
Clostridium mayombei
Clostridium methoxybenzovorans
Clostridium methylpentosum
Clostridium neopropionicum
Clostridium nexile
Clostridium novyi
Clostridium oceanicum
Clostridium orbiscindens

Clostridium oroticum
Clostridium papyrosolvens
Clostridium paradoxum
Clostridium paraputrificum
Clostridium pascui
Clostridium pasteurianum
Clostridium peptidivorans
Clostridium perenne
Clostridium perfringens
Clostridium phytofermentans
Clostridium piliforme
Clostridium polysaccharolyticum
Clostridium populeti
Clostridium propionicum
Clostridium proteoclasticum
Clostridium proteolyticum
Clostridium psychrophilum
Clostridium puniceum
Clostridium purinilyticum
Clostridium putrefaciens
Clostridium putrificum
Clostridium quinii
Clostridium ramosum
Clostridium rectum
Clostridium roseum
Clostridium saccharobutylicum
Clostridium saccharolyticum
Clostridium saccharoperbutylaceticum
Clostridium sardiniense
Clostridium sartagoforme
Clostridium scatologenes
Clostridium scindens
Clostridium septicum
Clostridium sordellii
Clostridium sphenoides
Clostridium spiroforme
Clostridium sporogenes
Clostridium sporosphaeroides
Clostridium stercorarium
Clostridium sticklandii
Clostridium subterminale
Clostridium symbiosum
Clostridium termitidis

Clostridium tertium
Clostridium tetani
Clostridium tetanomorphum
Clostridium thermoalcaliphilum
Clostridium thermobutyricum
Clostridium thermocellum
Clostridium thermopalmarium
Clostridium thermopapyrolyticum
Clostridium thermosuccinogenes
Clostridium thiosulfatireducens
Clostridium tyrobutyricum
Clostridium uliginosum
Clostridium ultunense
Clostridium vincentii
Clostridium viridae
Clostridium xylanolyticum
Clostridium xylanovorans

Related to *Coccidioides immitis*, *Coccidioides posadasii*:

None.

Related to *Coxiella burnetii*:

None.

Related to Eastern equine encephalitis virus, Venezuelan equine encephalitis virus:

78V3531 virus
AG80-663 virus
Aura virus
Barmah Forest virus
Bebaru virus
Cabassou virus
Chikungunya virus
Everglades virus
Fort Morgan virus
Getah virus
Highlands J virus
Mayaro virus
Middelburg virus
Mucambo virus
Ndumu virus

O'nyong-nyong virus
 Pixuna virus
 Ross River virus
 Rubella virus
 Salmon pancreas disease virus
 Semliki Forest virus
 Sindbis virus
 Tonate virus
 Trocara virus
 Una virus
 Western equine encephalitis virus
 Whataroa virus

Related to *Ehrlichia ruminantium*:

Ehrlichia canis
Ehrlichia chaffeensis
Ehrlichia equi
Ehrlichia ewingii
Ehrlichia muris

Related to Foot-and-mouth disease virus, Human enterovirus B (strain Human coxsackievirus B5):

Acid-stable equine picornavirus
 Aichi virus
 Avian encephalomyelitis-like virus
 Avian entero-like virus 2-4
 Avian nephritis virus 1-3
 Barramundi virus-1
 Bovine enterovirus
 Bovine rhinovirus 1-3
 Cockatoo entero-like virus
 Duck hepatitis virus 1,4
 Encephalomyocarditis virus
 Equine rhinitis A virus
 Equine rhinitis B virus
 Equine rhinovirus 3
 Guineafowl transmissible enteritis virus
 Harbour seal picorna-like virus
 Hepatitis A virus
 Human enterovirus A,B,C,D,E
 Human parechovirus

Human rhinovirus A,B
 Ljungan virus
 Poliovirus
 Porcine enterovirus A,B
 Porcine teschovirus 1-7,11-13
 Sea-bass virus-1
 Sikhote-Alyn virus
 Smelt virus-1,2
 Syr-Daria Valley fever virus
 Taura syndrome virus of marine penaeid shrimp
 Theilovirus
 Turbot virus-1
 Turkey entero-like virus
 Turkey hepatitis virus
 Turkey pseudo enterovirus 1,2

Related to Flexal virus, Guanarito virus, Junín virus, Lassa virus, Machupo virus, Sabiá virus:

Allpahuayo virus
 Amapari virus
 Ippy virus
 Latino virus
 Lymphocytic choriomeningitis virus
 Mobala virus
 Mopeia virus
 Oliveros virus
 Pampa virus
 Paraná virus
 Pichinde virus
 Pirital virus
 Tacaribe virus
 Tamiami virus
 Whitewater Arroyo virus

Related to *Francisella tularensis*:

Francisella novicida
Francisella philomiragia

Related to Hendra virus, Menangle virus, Newcastle disease virus, Nipah virus, Peste-des-petits-ruminants virus, Rinderpest virus:

Avian paramyxovirus 2-9
Bovine parainfluenza virus 2,3,4
Bovine respiratory syncytial virus
Canine distemper virus
Cetacean morbillivirus
Fer-de-Lance virus
Human metapneumovirus
Human parainfluenza virus 1,3
Human respiratory syncytial virus
Mapuera virus
Measles virus
Mossman virus
Mumps virus
Murine pneumonia virus
Nariva virus
Ovine respiratory syncytial virus
Phocine distemper virus
Porcine rubulavirus
Sendai virus
Simian parainfluenza virus 5,41
Simian virus 10
Tioman virus
Tupaia virus
Turkey rhinotracheitis virus

Related to Influenza A virus (avian highly pathogenic strains H5 and H7):

Batken virus
Dhori virus
Infectious salmon anemia virus
Influenza A virus
Influenza B virus
Influenza C virus
Thogoto virus

Related to Lake Victoria marburgvirus, Côte d'Ivoire ebolavirus, Reston ebolavirus, Sudan ebolavirus, Zaire ebolavirus:

None.

Related to *Mycoplasma capricolum capripneumoniae*, *Mycoplasma mycoides capri*, *Mycoplasma mycoides mycoides*:

Mycoplasma adleri
Mycoplasma agalactiae
Mycoplasma agassizii
Mycoplasma alkalescens
Mycoplasma alligatoris
Mycoplasma alvi
Mycoplasma anatis
Mycoplasma anseris
Mycoplasma arginini
Mycoplasma arthritis
Mycoplasma auris
Mycoplasma bovirhinalium
Mycoplasma bovirhinalis
Mycoplasma bovis
Mycoplasma bovovulvum
Mycoplasma buccale
Mycoplasma buteonis
Mycoplasma californicum
Mycoplasma canadense
Mycoplasma canis
Mycoplasma capricolum
Mycoplasma capricolum capricolum
Mycoplasma caviae
Mycoplasma cavipharyngis
Mycoplasma citelli
Mycoplasma cloacale
Mycoplasma collis
Mycoplasma columbinasale
Mycoplasma columbinum
Mycoplasma columborale
Mycoplasma conjunctivae
Mycoplasma corogypsi
Mycoplasma cottewii
Mycoplasma cricetuli
Mycoplasma crocodyli
Mycoplasma cynos
Mycoplasma dispar
Mycoplasma edwardii
Mycoplasma elephantis
Mycoplasma equigenitalium
Mycoplasma equirhinalis
Mycoplasma falconis
Mycoplasma fastidiosum

Mycoplasma faucium
Mycoplasma felifaucium
Mycoplasma feliminutum
Mycoplasma felis
Mycoplasma fermentans
Mycoplasma flocculare
Mycoplasma gallinaceum
Mycoplasma gallinarum
Mycoplasma gallisepticum
Mycoplasma gallopavonis
Mycoplasma gateae
Mycoplasma genitalium
Mycoplasma glycyphilum
Mycoplasma gypis
Mycoplasma haemocanis
Mycoplasma haemofelis
Mycoplasma hominis
Mycoplasma hyopharyngis
Mycoplasma hyopneumoniae
Mycoplasma hyorhinis
Mycoplasma hyosynoviae
Mycoplasma imitans
Mycoplasma indiense
Mycoplasma iners
Mycoplasma iowae
Mycoplasma lagogenitalium
Mycoplasma leonicaptivi
Mycoplasma leopharyngis
Mycoplasma lipofaciens
Mycoplasma lipophilum
Mycoplasma maculosum
Mycoplasma meleagridis
Mycoplasma microti
Mycoplasma moatsii
Mycoplasma mobile
Mycoplasma molare
Mycoplasma muris
Mycoplasma mustelae
Mycoplasma neurolyticum
Mycoplasma opalescens
Mycoplasma orale
Mycoplasma ovipneumoniae
Mycoplasma oxoniensis

Mycoplasma penetrans
Mycoplasma phocicerebrale
Mycoplasma phocidae
Mycoplasma phocirhinitis
Mycoplasma pirum
Mycoplasma pneumoniae
Mycoplasma primatum
Mycoplasma pullorum
Mycoplasma pulmonis
Mycoplasma putrefaciens
Mycoplasma salivarium
Mycoplasma simbae
Mycoplasma spermatophilum
Mycoplasma spumans
Mycoplasma sturni
Mycoplasma sualvi
Mycoplasma sualvi
Mycoplasma subdolum
Mycoplasma suis
Mycoplasma synoviae
Mycoplasma testudinis
Mycoplasma verecundum
Mycoplasma wenyonii
Mycoplasma yeatsii

Related to *Peronosclerospora philippinensis*:

Peronosclerospora heteropogoni
Peronosclerospora maydis
Peronosclerospora northii
Peronosclerospora sacchari
Peronosclerospora sorghi
Peronosclerospora zeae

Related to *Phakopsora pachyrhizi*:

Phakopsora ampelopsidis
Phakopsora cronartiiiformis
Phakopsora euvitis
Phakopsora itoana
Phakopsora loudetiae
Phakopsora meibomiaae
Phakopsora melaena

Phakopsora meliosmae
Phakopsora tecta
Phakopsora tomentosae
Phakopsora venezuelana
Phakopsora vitis

Related to Plum pox virus:

Agropyron mosaic virus
Alstroemeria mosaic virus
Alstroemeria streak virus
Amaranthus leaf mottle virus
Amazon lily mosaic virus
Aneilema mosaic virus
Anthoxanthum mosaic virus
Aquilegia necrotic ringspot virus
Araujia mosaic virus
Arracacha virus Y
Artichoke latent virus
Asparagus virus 1
Asystasia gangetica mottle virus
Banana bract mosaic virus
Barley mild mosaic virus
Barley yellow mosaic virus
Bean common mosaic necrosis virus
Bean common mosaic virus
Bean yellow mosaic virus
Beet mosaic virus
Bidens mosaic virus
Bidens mottle virus
Bramble yellow mosaic virus
Brome streak mosaic virus
Bryonia mottle virus
Calanthe mild mosaic virus
Canary reed mosaic virus
Canavalia maritima mosaic virus
Cardamom mosaic virus
Cardamom mosaic virus
Carnation vein mottle virus
Carrot mosaic virus
Carrot thin leaf virus
Cassava brown streak virus
Cassia yellow spot virus

Celery mosaic virus
Celery yellow mosaic virus
Ceratobium mosaic virus
Chickpea bushy dwarf virus
Chickpea filiform virus
Chilli veinal mottle virus
Clitoria yellow mosaic virus
Clover yellow vein virus
Cocksfoot streak virus
Colombian Datura virus
Commelina mosaic virus
Cowpea aphid-borne mosaic virus
Cowpea green vein banding virus
Cowpea rugose mosaic virus
Crinum mosaic virus
Cucumber vein yellowing virus
Cypripedium calceolus virus
Daphne virus Y
Dasheen mosaic virus
Datura distortion mosaic virus
Datura mosaic virus
Datura necrosis virus
Datura shoestring virus
Datura virus 437
Desmodium mosaic virus
Dioscorea trifida virus
Dipladenia mosaic virus
Dock mottling mosaic virus
Eggplant green mosaic virus
Eggplant severe mottle virus
Endive necrotic mosaic virus
Euphorbia ringspot virus
Fig leaf chlorosis virus
Freesia mosaic virus
Gloriosa stripe mosaic virus
Groundnut eyespot virus
Guar symptomless virus
Guinea grass mosaic virus
Habenaria mosaic virus
Helenium virus Y
Henbane mosaic virus
Hippeastrum mosaic virus
Holcus streak virus

Hordeum mosaic virus
Hungarian Datura innoxia virus
Hyacinth mosaic virus
Indian Pepper mottle virus
Iris fulva mosaic virus
Iris mild mosaic virus
Iris severe mosaic virus
Isachne mosaic virus
Johnsongrass mosaic virus
Kalanchoë mosaic virus
Kennedy virus Y
Konjac mosaic virus
Leek yellow stripe virus
Lettuce mosaic virus
Lily mild mottle virus
Lily mottle virus
Maclura mosaic virus
Maize dwarf mosaic virus
Malva vein clearing virus
Marigold mottle virus
Melilotus mosaic virus
Melon vein-banding mosaic virus
Moroccan watermelon mosaic virus
Mungbean mosaic virus
Mungbean mottle virus
Narcissus degeneration virus
Narcissus late season yellows virus
Narcissus latent virus
Narcissus yellow stripe virus
Nerine virus
Nerine virus Y
Nerine yellow stripe virus
Nothoscordum mosaic virus
Oat mosaic virus
Oat necrotic mottle virus
Onion yellow dwarf virus
Ornithogalum mosaic virus
Palm mosaic virus
Papaya leaf distortion mosaic virus
Papaya ringspot virus
Parsnip mosaic virus
Passionfruit mottle virus
Passionfruit ringspot virus

Passionfruit woodiness virus
Patchouli mottle virus
Pea seed-borne mosaic virus
Peanut green mottle virus
Peanut mottle virus
Pecteilis mosaic virus
Pepper mild mosaic virus
Pepper mottle virus
Pepper severe mosaic virus
Pepper vein banding virus
Pepper veinal mottle virus
Perilla mottle virus
Peru tomato mosaic virus
Plantain virus 7
Pleioblastus mosaic virus
Pokeweed mosaic virus
Poplar decline virus
Potato virus A
Potato virus V
Potato virus Y
Primula mosaic virus
Primula mottle virus
Radish vein clearing virus
Ranunculus mottle virus
Rice necrosis mosaic virus
Rudbeckia mosaic virus
Ryegrass mosaic virus
Shallot yellow stripe virus
Sorghum mosaic virus
Soybean mosaic virus
Spartina mottle virus
Sri Lankan passionfruit mottle virus
Sugarcane mosaic virus
Sunflower mosaic virus
Sweet potato feathery mottle virus
Sweet potato latent virus
Sweet potato mild mottle virus
Sweet potato mild speckling virus
Sweet potato vein mosaic virus
Sweet potato yellow dwarf virus
Sword bean distortion mosaic virus
Tamarillo mosaic virus
Taro feathery mottle virus

Teasel mosaic virus
Telfairia mosaic virus
Tobacco etch virus
Tobacco vein banding mosaic virus
Tobacco vein mottling virus
Tobacco wilt virus
Tongan vanilla virus
Tradescantia mosaic virus
Trichosanthes mottle virus
Tropaeolum mosaic virus
Tropaeolum virus 1,2
Tuberose mild mosaic virus
Tulip band breaking virus
Tulip breaking virus
Turnip mosaic virus
Ullucus mosaic virus
Vallota mosaic virus
Watermelon mosaic virus
Wheat spindle streak mosaic virus
Wheat streak mosaic virus
Wheat yellow mosaic virus
White bryony virus
Wild potato mosaic virus
Wisteria vein mosaic virus
Yam mosaic virus
Zoysia mosaic virus
Zucchini yellow fleck virus
Zucchini yellow mosaic virus

Related to *Ralstonia solanacearum* (race 3 biovar 2):

Ralstonia basilensis
Ralstonia campinensis
Ralstonia gilardii
Ralstonia insidiosa
Ralstonia mannitolilytica
Ralstonia metallidurans
Ralstonia oxalatica
Ralstonia paucula
Ralstonia pickettii
Ralstonia respiraculi
Ralstonia solanacearum
Ralstonia taiwanensis

Related to *Rickettsia prowazekii*, *Rickettsia rickettsii*:

Rickettsia aeschlimannii
Rickettsia africae
Rickettsia akari
Rickettsia australis
Rickettsia bellii
Rickettsia canadensis
Rickettsia conorii
Rickettsia felis
Rickettsia helvetica
Rickettsia honei
Rickettsia japonica
Rickettsia massiliae
Rickettsia montanensis
Rickettsia parkeri
Rickettsia peacockii
Rickettsia rhipicephali
Rickettsia sibirica
Rickettsia slovacae
Rickettsia typhi

Related to *Sclerophthora rayssiae* (var. *zeae*):

Sclerophthora graminicola
Sclerophthora macrospora
Sclerophthora sorghi

Related to *Synchytrium endobioticum*:

Synchytrium anemones
Synchytrium abnorme
Synchytrium achryoclines
Synchytrium aequatoriense
Synchytrium africanum
Synchytrium ajrekari
Synchytrium akshaiberi
Synchytrium alpinum
Synchytrium alpicola
Synchytrium alysicarpi
Synchytrium ampelocissi
Synchytrium amsinckiae

Synchytrium andinum
Synchytrium anomalum
Synchytrium asari
Synchytrium asteracanthae
Synchytrium asystasiae
Synchytrium athyrii
Synchytrium atlyosiae
Synchytrium auranticum
Synchytrium aureum
Synchytrium australe
Synchytrium balsaminae
Synchytrium batesii
Synchytrium bignoniae
Synchytrium biophyti
Synchytrium biophytum
Synchytrium boerhaaviae
Synchytrium bonaerense
Synchytrium borreriae
Synchytrium bromi
Synchytrium brownii
Synchytrium bupleurii
Synchytrium callicarpae
Synchytrium callirhoeae
Synchytrium callirrhoes
Synchytrium cajani
Synchytrium cardiospermi
Synchytrium caricis
Synchytrium carpini
Synchytrium cassiae
Synchytrium cellulare
Synchytrium cellulare var. lycopodis
Synchytrium celosiae
Synchytrium centranthi
Synchytrium cerastii
Synchytrium cessampelum
Synchytrium chamaedryoidis
Synchytrium chaptaliae
Synchytrium chiltonii
Synchytrium chysosplenii
Synchytrium cinnamomeum
Synchytrium cissampeli
Synchytrium citrinum
Synchytrium clematidis

Synchytrium cocculi
Synchytrium collapsum
Synchytrium cookii
Synchytrium corni
Synchytrium cotulae
Synchytrium crotalariae
Synchytrium cruciferarum
Synchytrium crustaceum
Synchytrium crustatum
Synchytrium cucumis-sativa
Synchytrium cupulatum
Synchytrium cyamopsidis
Synchytrium cylistae
Synchytrium cyperi
Synchytrium davisii
Synchytrium decipiens
Synchytrium dendriticum
Synchytrium desmodii
Synchytrium desmodiicola
Synchytrium dolichi
Synchytrium duchesneae
Synchytrium echii
Synchytrium echinulatum
Synchytrium edgertonii
Synchytrium emiliae
Synchytrium epilobii
Synchytrium equatoriensis
Synchytrium erectitis
Synchytrium eremocarpi
Synchytrium erieum
Synchytrium erigerontis
Synchytrium erigerontis var. dominicanum
Synchytrium fistulosus
Synchytrium fragariae
Synchytrium fraxini
Synchytrium fulgens
Synchytrium fuscum
Synchytrium gei
Synchytrium gerani
Synchytrium globosum
Synchytrium gonolobi
Synchytrium graminicola
Synchytrium graminis

Synchytrium grande
Synchytrium grandis
Synchytrium groenlandicum
Synchytrium haplanthi
Synchytrium helianthemum
Synchytrium hemigraphidis
Synchytrium hibisci
Synchytrium holwayi
Synchytrium hydrocotyles
Synchytrium hypochoeridis
Synchytrium ilicicola
Synchytrium impatientis
Synchytrium incrassans
Synchytrium indicum
Synchytrium infestans
Synchytrium innominatum
Synchytrium iridis
Synchytrium jaapianum
Synchytrium johansonii
Synchytrium jonesii
Synchytrium khandalense
Synchytrium kumaonense
Synchytrium lacunosum
Synchytrium laetum
Synchytrium laevis
Synchytrium lagenariae
Synchytrium lagenariae var. *trichosanthis*
Synchytrium lagerheimii
Synchytrium launeae
Synchytrium leontodontis
Synchytrium lepidagathidis
Synchytrium lepidii
Synchytrium ligusticii
Synchytrium limosellae
Synchytrium linariae
Synchytrium linderniae
Synchytrium lindquistii
Synchytrium liquidambaris
Synchytrium lithophragmatis
Synchytrium longispinosus
Synchytrium luffae
Synchytrium lythri
Synchytrium macrosporum

Synchytrium maculans
Synchytrium malvacearum
Synchytrium marginale
Synchytrium marsileae
Synchytrium melicopidis
Synchytrium meliloti
Synchytrium melongenae
Synchytrium mercurialis
Synchytrium micranthi
Synchytrium micranthum
Synchytrium miescherianum
Synchytrium millingtoniicola
Synchytrium minutum
Synchytrium mitchellae
Synchytrium modioliensis
Synchytrium montanum
Synchytrium musicola
Synchytrium myosotidis
Synchytrium namae
Synchytrium namatis
Synchytrium niesslii
Synchytrium nigrescens
Synchytrium nitidum
Synchytrium nyctanthidis
Synchytrium oldenlandiae
Synchytrium oreganum
Synchytrium oroxyli
Synchytrium ovale
Synchytrium ovale var. giganteum
Synchytrium ovalis
Synchytrium ovalis var. ovalis
Synchytrium oxalidis
Synchytrium papillatum
Synchytrium parksii
Synchytrium parthenocissi
Synchytrium perforatum
Synchytrium petersenii
Synchytrium phaseoli
Synchytrium phaseoli-radiati
Synchytrium phegopteridis
Synchytrium phyllanthi
Synchytrium phyllanthicola
Synchytrium physalidis

Synchytrium picrosiae
Synchytrium pilificum
Synchytrium piperi
Synchytrium plantagineum
Synchytrium plantiginicola
Synchytrium pogostemonis
Synchytrium polemonii
Synchytrium polygona
Synchytrium potentillae
Synchytrium psophocarpi
Synchytrium pulvereum
Synchytrium punctatum
Synchytrium punctum
Synchytrium pyriforme
Synchytrium ranunculi
Synchytrium rhodoclamys
Synchytrium rhynchosiae
Synchytrium rubrocinctum
Synchytrium rugulosum
Synchytrium rytzii
Synchytrium salviae
Synchytrium sambuci
Synchytrium sanguineum
Synchytrium saxifragae
Synchytrium scirpi
Synchytrium selanginellae
Synchytrium senecionis
Synchytrium sesami
Synchytrium sesamicola
Synchytrium shawii
Synchytrium shuteriae
Synchytrium smilacis
Synchytrium smithiae
Synchytrium spirogyrae
Synchytrium stachydis
Synchytrium stellariae
Synchytrium stereospermi
Synchytrium stipae
Synchytrium succisae
Synchytrium taraxaci
Synchytrium tocomae
Synchytrium tephrosiae
Synchytrium texanum

Synchytrium thirumalachari
Synchytrium tillaeae
Synchytrium trachelospermi
Synchytrium tragiae
Synchytrium travancoricum
Synchytrium trichodesmatis
Synchytrium trichophilum
Synchytrium trichosanthis
Synchytrium trifolii
Synchytrium tunicae
Synchytrium uliginicola
Synchytrium ulmariae
Synchytrium ulmi
Synchytrium umbilicatum
Synchytrium urGINEAE
Synchytrium urticae
Synchytrium vaccinii
Synchytrium valerianellae
Synchytrium varanasense
Synchytrium variabile
Synchytrium variabilum
Synchytrium velleiae
Synchytrium vernoniae
Synchytrium vignicola
Synchytrium violae
Synchytrium viride
Synchytrium viticola
Synchytrium vulcanicum
Synchytrium vulgatum
Synchytrium wurthii
Synchytrium zorniae
Synchytrium zygogonii

Related to Vesicular stomatitis Alagoas/Indiana virus (exotic):

Adelaide River virus
Australian bat lyssavirus
Bahia Grande virus
Barley yellow striate mosaic virus
BeAn 157575 virus
Beet leaf curl virus
Berrimah virus
Boteke virus

Bovine ephemeral fever virus
Broccoli necrotic yellows virus
Calchaqui virus
Callistephus chinensis chlorosis virus
Carajas virus
Carnation bacilliform virus
Carrot latent virus
Cassava symptomless virus
Cereal chlorotic mottle virus
Chandipura virus
Chrysanthemum frutescens virus
Chrysanthemum vein chlorosis virus
Citrus leprosis virus
Clover enation virus
Cocal virus
Coffee ringspot virus
Colocasia bobone disease virus
Coriander feathery red vein virus
Cow parsnip mosaic virus
Cynara virus
Dendrobium leaf streak virus
Digitaria striate virus
Duvenhage virus
Eel virus American
Eel virus B12
Eel virus C26
Eggplant mottled dwarf virus
Euonymus fasciation virus
European bat lyssavirus 1,2
Festuca leaf streak virus
Finger millet mosaic virus
Gerbera symptomless virus
Gomphrena virus
Gray Lodge virus
Hirame rhabdovirus
Holcus lanatus yellowing virus
Infectious hematopoietic necrosis virus
Iris germanica leaf stripe virus
Isfahan virus
Ivy vein clearing virus
Jurona virus
Kimberley virus
Klamath virus

Kwatta virus
La Joya virus
Laelia red leafspot virus
Lagos bat virus
Launea arborescens stunt virus
Lemon scented thyme leaf chlorosis virus
Lettuce necrotic yellows virus
Lolium ryegrass virus
Lotus stem necrosis virus
Lucerne enation virus
Lupin yellow vein virus
Maize mosaic virus
Maize sterile stunt virus
Malakal virus
Malpais Spring virus
Malva silvestris virus
Maraba virus
Melilotus latent virus
Melon variegation virus
Mokola virus
Mount Elgon bat virus
Northern cereal mosaic virus
Oat striate mosaic virus
Parsley virus
Perinet virus
Phalaenopsis chlorotic spot virus
Pigeon pea proliferation virus
Pike fry rhabdovirus
Pineapple chlorotic leaf streak virus
Piry virus
Pisum virus
Plantain mottle virus
Porton virus
Potato yellow dwarf virus
Puchong virus
Rabies virus
Radi virus
Ranunculus repens symptomless virus
Raphanus virus
Raspberry vein chlorosis virus
Red clover mosaic virus
Rice yellow stunt virus
Rochambeau virus

Sainpaulia leaf necrosis virus
 Sambucus vein clearing virus
 Sarracenia purpurea virus
 Snakehead rhabdovirus
 Sonchus virus
 Sonchus yellow net virus
 Sorghum virus
 Soursop yellow blotch virus
 Spring viremia of carp virus
 Strawberry crinkle virus
 Triticum aestivum chlorotic spot virus
 Tupaia virus
 Ulcerative disease rhabdovirus
 Vesicular stomatitis Indiana virus
 Vesicular stomatitis New Jersey virus
 Vigna sinensis mosaic virus
 Viral hemorrhagic septicemia virus
 Wheat American striate mosaic virus
 Wheat chlorotic streak virus
 Wheat rosette stunt virus
 Winter wheat Russian mosaic virus
 Yug Bogdanovac virus
 Zea mays virus

Related to *Xanthomonas oryzae* (pathovar *Oryzicola*):

Xanthomonas albilineans
Xanthomonas arboricola
Xanthomonas axonopodis
Xanthomonas bromi Vauterin
Xanthomonas campestris
Xanthomonas cassavae
Xanthomonas citri
Xanthomonas codiaei
Xanthomonas cucurbitae
Xanthomonas cynarae
Xanthomonas fragariae
Xanthomonas hortorum
Xanthomonas hyacinthi
Xanthomonas melonis
Xanthomonas oryzae
Xanthomonas phaseoli
Xanthomonas pisi

Xanthomonas populi
Xanthomonas populi
Xanthomonas sacchari
Xanthomonas theicola
Xanthomonas translucens
Xanthomonas vasicola
Xanthomonas vesicatoria

Related to *Xylella fastidiosa* (citrus variegated chlorosis strain):
Xylella fastidiosa

Related to *Yersinia pestis*:

Yersinia aldovae
Yersinia aleksiciae
Yersinia bercovieri
Yersinia enterocolitica
Yersinia frederiksenii
Yersinia intermedia
Yersinia kristensenii
Yersinia mollaretii
Yersinia pseudotuberculosis
Yersinia rohdei
Yersinia ruckeri

A “non-listed agent” is an agent other than a listed agent or related agent. “Antibiotic” is defined as “antibiotic or therapeutic utility against listed agent”. Similarly, “vaccine” is defined as “vaccine or therapeutic utility against listed agent”. A “powder” has been defined as a “powder other than lyophilized reference specimen (<10 mg)”.

The “Interim Final Rule for Possession, Use, and Transfer of Select Agents” defines “genetic elements, recombinant nucleic acids, and recombinant organisms” as:

- “select agent viral nucleic acids (synthetic or naturally derived, contiguous or fragmented, in host chromosomes or in expression vectors that can encode infectious and/or replication competent forms of any of the select agent viruses;
- nucleic acids (synthetic or naturally derived) that encode for the functional form(s) of any of the toxins listed ... if the nucleic acids: (i) are in a vector or host chromosome; (ii) can be expressed in vivo or in vitro; or (iii) are in a vector or host chromosome and can be expressed in vivo or in vitro”.

According to senior managers (conversation with Elisa Harris and Richard Ebright) of the “Controlling Dangerous Pathogens Project”, this definition is too narrow. Hence, the following definition is used:

"Genetic elements, recombinant nucleic acids, and recombinant organisms" are

- “Nucleic acids (synthetic or naturally derived) comprising at least 15% of the genome of an agent”;
- “Nucleic acids (synthetic or naturally derived) encoding a virulence factor, or virulence-factor subunit, of an agent”.

Local, national, and international oversight bodies, provisionally named Local Pathogens Research Committee (LPRC), National Pathogens Research Authority (NPRA), and International Pathogens Research Agency (IPRA) would review PDA, MDA, and EDA, respectively. PDA would be subject to institutional review through a biosafety officer who would decide whether

approval by LPRC is necessary for a particular project. MDA would require national approval through the NRPA, which would also review the work of LPRC. EDA would have to be reviewed, accepted and continuously monitored by IPRA, which for that purpose would involve a special advisory Committee on Biological Research Activities (COBRA) comprised of experts in high-consequence microbiological science.

In the latest draft of the proposed oversight system, the risk of scientific work with an agent is based on its lethality, infectivity, and rate of means of transmission. The purpose of this working paper is to predict what research proportion would fall into the PDA, MDA, and EDA categories to further refine their definition and to estimate the potential impact of the oversight system on overall research activities, and economy. For a first approximation, relevant US research conducted between 2000-2005 will be screened.

METHODS

This working paper focuses on validly and peer-reviewed publications, but does not include conference abstracts, book chapters, theses, dissertations, or patents – all of which might describe work with select (“listed”) or “related” or “non-listed” agents that is not published. The author suspects the list of such missed described experiments as rather short, but possibly important. The publications cited in this paper are referenced according to the standards established by the American Society for Microbiology (ASM). They are adapted to suggestions given in the *ASM Style Manual for Journals and Books* (American Society for Microbiology, Washington, DC, USA, 1991) and Robert A. Day’s *How to Write and Publish a Scientific Paper*, 5th edition (Oryx Press, Phoenix, Arizona, USA, 1998). The citation style excludes first names of authors but lists their initials; omits issue numbers of journal articles; and abbreviates journal titles. Full author names and issue numbers can be easily obtained by copy-pasting an article title in the search field of the used databases and accessing the article (this action, however, requires full-text access, *i.e.* subscription to the database and the journal by one’s institution).

Virus/Viroid/Virusoid/Satellite/Prion names are used according to the rules established by the International Committee on Taxonomy of Viruses (ICTV). They are in reference to the 7th Report of the ICTV published in 2000 (*Virus Taxonomy. Seventh Report of the International Committee for the Taxonomy of Viruses*. Academic Press, New York, New York, USA), and articles published on behalf of the ICTV in the journal *Archives of Virology* (Springer-Verlag, Vienna, Austria) in the years before the 7th report and thereafter. Bacterial names are used according to the rules established by the Bacteriological Code. They are in reference to articles published in the journal *International Journal of Systematic and Evolutionary Bacteriology*

(Society for General Microbiology, Reading, UK) and the latest edition of *Bergey's Manual of Systematic Bacteriology* (Springer-Verlag, Vienna, Austria, various years for different volumes).

Used databases for research reports:

Only the most common databases, and only those to which the author had electronic access, were used for this working paper. These were:

- Ingenta's *Ingenta Connect*: <http://www.ingentaconnect.com/>
- National Center for Biotechnology Information's (NCBI's) *PubMed*:
<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?>
- OCLC's *First Search*: <http://www.oclc.org/firstsearch/>
- Thomson's *ISI Web of Science*: <http://www.isinet.com/products/citation/wos/>

The majority (the author's guess: about 99%) of "US" publications are listed in those databases used. Hence, even a much more thorough screen would most likely not retrieve many publications that should be listed in this working paper. However, it is possible that many "US" publications on plant pathogens, which should be included in this working paper, are not – this is because the author could not find an accessible electronic database covering this work, and it is possible that this work is not included in the databases used for this working paper.

Used database for NIH grants:

Although an original aim of this working paper, the list of grants in this working paper is rather incomplete because of the inaccessibility of electronic grant databases. Only the NIH database could be screened using The Sunshine Project's *CRISPER* (<http://www.cbwtransparency.org/crisper/index2.html>) and here, only abstracts of grants were available. Hence, in most cases it was unclear whether a funded project employed infectious

agents or not; which strain (exotic or not) was used; and whether it actually pertained to the agent itself rather than just listing it in the abstract to make the grant sound more interesting. The author had to guess whether to list particular grants in this working paper and used his limited knowledge to guide his guessing. Grant authors and the affiliated institutions were not listed in the quantitative section of this working paper because of this incompleteness and vagueness.

Screening Strategy:

General:

All searches were first performed using the database *PubMed*.

Retrieved publications that had to be classified as a Dangerous Activity were those from the US, having been performed between 2000 and 2005, and fitting the Dangerous Activity subcategories described above.

“US” publications were identified by using the provided institute affiliations of the authors of a given publication. Hence, a “US author” in this working paper is any author of a publication, for whom a US institution was listed as affiliation. However, this does not mean that a listed author actually is/was an American citizen. Only the affiliation provided by the abstract in a database was considered in the case of articles for which full-text electronic versions were not accessible by the author. Databases usually only provide the lead institution, *i.e.* the affiliation of the last and/or first author. Hence, in these cases either all authors were considered “US” or none at all. The affiliation of the lead (first or last) authors were listed when two or more affiliations were provided for one given author.

The author list of a given article usually does not provide information on who actually worked with infectious agent and who merely provided support (through discussions, reagent sharing etc.). In several cases, one or two “US” authors were listed in the middle of a list of many foreign

authors in articles with a foreign lead institution. These articles were listed in this working paper, but one could make a case that they shouldn't – in which the list of “US” publications in this working paper would become shorter

Retrieved publications were downloaded into the database management program *Endnote 8* (Thomson Research Soft, Carlsbad, California). Then, secondary searches were performed using the other databases. Retrieved papers were downloaded into *Endnote*, and duplicates were eliminated. Full-text versions of the retrieved articles, if available online using the Harvard Medical School journal subscriptions, were screened for the PDA/1 subcategory and all EDA subcategories. In contrast to those subcategories, which on average demanded screening of <1,000 articles per any one of the few agents/subcategory, several ten thousand articles needed to be screened for all other subcategories (PDA/2-7, MDA/1-8). Hence, only article titles and abstracts were screened for these subcategories.

Specific:

At first, subcategory PDA/1 (Work with listed agent— or exempt avirulent, attenuated, or vaccine strain of select agent — not covered by EDA/MDA) was examined. This subcategory includes all select agents listed above. Following a discussion with Elisa Harris and Richard Ebright, only papers dealing with “life”, *i.e.* infectious agents were considered (purely epidemiological or case reports were not considered). Identified publications, which fit another subcategory of either MDA or EDA were removed and placed accordingly. To search for select agents, the following search terms were used either singularly, or in Boolean combination:

1. African horse sickness virus: “african horse sickness or perdesiekte or pestis equorum or peste equina”

2. African swine fever virus: “african swine fever or asfarviridae or asfarviruses or asfivirus or BA71V virus or malawi LIL20/1 virus or E70 virus or peste porcine africaine or fiebre porcina africana or maladie de montgomery”
3. Akabane virus: “akabane virus or sabo virus or tinaroo virus or yaba-7 virus or congenital arthrogryposis-hydrancephaly syndrome or A-H syndrome or acorn calves or silly calves or curly lamb disease or curly calf disease or dummy calf disease”
4. Alcelaphine herpesvirus 1, 2: “alcelaphine or bovide herpesvirus 3 or ovine herpesvirus 2 or malignant catarrhal fever or snotsiekte or malignant catarrh or malignant head catarrh”
5. *Bacillus anthracis*: “Bacillus anthracis or anthrax or woolsorter’s disease”
6. Bluetongue virus: “bluetongue or blue tongue”
7. Bovine spongiform encephalopathy prion: “BSE or bovine spongiform encephalopathy or prion”
8. *Brucella melitensis*: “Brucella”
9. *Burkholderia mallei* and *pseudomallei*: “burkholderia or glanders or malleus or farcy or droes or melioidosis”
10. Camelpox virus: “camelpox”
11. *Candidatus Liberobacter africanus/asiaticus*: “liberobacter or liberibacter or huanglongbing”
12. Cercopithecine herpesvirus 1: “cercopithecine herpesvirus 1 or herpes b virus or herpesvirus simiae or monkey b virus”
13. Classical swine fever virus: “classical swine fever”
14. *Clostridium botulinum*: “clostridium botulinum or botulism or botulinum toxin”
15. *Coccidioides immitis, posadasii*: “coccidioides or coccidioidomycosis or san joaquin valley fever”

16. *Coxiella burneti*: “coxiella or q fever”
17. Easter equine encephalitis virus: “eastern equine encephalitis or eeev”
18. *Ehrlichia ruminantium*: “ehrlichia ruminantium or cowdria ruminantium or heartwater”
19. Flexal virus: “flexal or BeAn 293022”
20. Foot-and-mouth disease virus: “foot-and-mouth or foot and mouth or afta epizootica or bek-en-klouseer or fiebra aftosa or fievre aphteuse or Maul-und-Klauenseuche”
21. *Francisella tularensis*: “francisella or tularemia or rabbit fever”
22. Goatpox virus: “goatpox or goat pox or capripox”
23. Hendra virus: “hendra virus or henipavirus or equine morbillivirus”
24. Human enterovirus B: ”classical swine fever or hog cholera or peste du porc or colera porcina or Virusschweinepest”
25. Influenza A virus: “influenza a virus or fowl plague”
26. Japanese encephalitis virus: “Japanese encephalitis or Japanese b encephalitis”
27. Lumpy skin disease virus: “lumpy skin disease or capripox or pseudo-urticaria or Neethling virus disease or exanthema nodularis bovis or knopvelsiekte”
28. Menangle virus: “menangle virus”
29. Monkeypox virus “monkeypox or monkey pox”
30. *Mycoplasma capricolum*: “mycoplasma capricolum”
31. *Mycoplasma mycoides capri/mycoides*: “mycoplasma mycoides or contagious caprine pleuropneumonia”
32. Newcastle disease virus: “Newcastle disease”
33. Nipah virus: “nipah virus or henipavirus”
34. *Peronosclerospora philippinensis*: “peronosclerospora or sclerospora philippinensis or philippine downy mildew”

35. Peste-des-petits-ruminants virus: “Peste-des-petits-ruminants or peste des petits ruminants or stomatitis-pneumoenteritis or pseudorinderpest or kata”
36. *Phakopsora pachyrhizi*: “phakopsora or soybean rust”
37. Plum pox virus: “plum pox or sharka”
38. *Ralstonia solanacearum*: “ralstonia solanacearum or pseudomonas solanacearum”
39. *Rickettsia prowazekii*: “Rickettsia prowazekii”
40. *Rickettsia rickettsiae*: “Rickettsia rickettsiae”
41. Rift Valley fever virus “rift valley fever or ZH548 or MM12 or Belterra virus or Icoaraci virus or infectious enzootic hepatitis”
42. Rinderpest virus: “rinderpest”
43. Sabiá virus: “sabiá virus or SPH114202 or brazilian hemorrhagic fever”
44. *Sclerophthora raissae*: “sclerophthora or sclerospora or brown stripe downy mildew”
45. Sheeppox virus: “sheeppox or sheep pox or capripox”
46. *Synchytrium endobioticum*: “synchytrium endobioticum or synchytriaceae or potato wart disease or potato tubers or gale verruqueuse de la pomme de terre or kartoffelkrebs or sarna verrugosa de la patata”
47. Venezuelan equine encephalitis virus: “Venezuelan equine encephalitis or peste loca”
48. Vesicular stomatitis Alagoas/Indiana virus: “vesicular stomatitis alagoas or vesicular stomatitis cocal or vesicular stomatitis piry or cocal virus or piry virus or indiana-2 or indiana-3”
49. *Xanthomonas oryzae*: “xanthomonas oryzae”
50. *Xylella fastidiosa*: “xylella and citrus variegated chlorosis”
51. *Yersinia pestis*: “yersinia pestis or plague”

After screening for subcategory PDA/1, screening for subcategories EDA/1 and EDA/2 followed.

To search for research falling into category EDA/1 (Work with eradicated agent...), the following search terms were used either singularly, or in Boolean combination:

1. Variola virus: “variola or smallpox or alastrim”
2. “1918 Influenza virus”: “1918 influenza or influenza H1N1 or Spanish influenza”

To search for research falling into category EDA/2 (Work with agent requiring Biosafety Level-4), the following search terms were used either singularly, or in Boolean combination:

1. Côte d’Ivoire ebolavirus, Reston ebolavirus, Sudan ebolavirus, Zaire ebolavirus, Lake Victoria marburgvirus: “ebola or ebolavirus or marburg virus or marburgvirus or filovirus or filoviridae”
2. Crimean-Congo hemorrhagic fever virus: “crimean-congo or congo-crimean or CCHF or Hazara or Kodzha or Khasan”
3. Guanarito virus: “guanarito or INH-95551 or venezuelan hemorrhagic fever or venezuelan haemorrhagic fever”
4. Hendra virus, Nipah virus: “hendra virus or nipah virus or henipavirus or equine morbillivirus”
5. Junín virus: “junin virus or MC2 virus or XJ virus or argentine hemorrhagic fever or argentine haemorrhagic fever”
6. Kyasanur Forest disease virus: “kyasanur or alkhurma or alkhumra or fakeeh virus”
7. Lassa virus: “lassa or GA391 virus or LP virus or Josiah virus”
8. Machupo virus: “machupo or AA288-77 or Brazilian hemorrhagic fever or brazilian haemorrhagic fever”
9. Omsk hemorrhagic fever virus: “omsk hemorrhagic fever or omsk haemorrhagic fever”

10. Tick-borne encephalitis virus: “tick-borne encephalitis or tbe or fsme”

Then, all publications employing the “related agents” listed above were screened, and appropriate papers were placed into the remaining subcategories of MDA and EDA.

The taxonomy of microbes changes constantly. It is possible that some of the related agents have by now been moved to different genera or families, thus excluding them from the evaluated oversight system; or that additional related agents have been discovered. Because of the number of related agents that had to be screened (1,725), no Boolean researches were performed. Instead, only the agent name, as listed above, was used for searches. For 61 related agents out of 1,725, keyword/shotgun searches (“agent AND resistance”; or “agent AND cDNA” etc.) had to be performed because the overall number of retrieved papers per agent fitting the criteria of this working paper was larger than 1,000 (and, at times, larger than 10,000). Hence, several papers, which should have been included in this working paper, might have been missed. The 61 agents in question were:

- Aquareovirus A-F
- *Bacillus cereus*
- *Bacillus subtilis*
- *Bacillus thuringiensis*
- *Clostridium difficile*
- Cypovirus 1-14
- Dengue virus
- Hepatitis C virus
- Human enterovirus A,B,C,D,E
- Human herpesvirus 1-8
- *Human parainfluenza virus 1,3*
- *Influenza A virus*
- *Measles virus*
- Murid herpesvirus 1-6
- *Mycoplasma putrefaciens*
- Poliovirus

- Prions (Chronic wasting disease prion, Creutzfeldt-Jakob disease prion, Exotic ungulate encephalopathy prion, Fatal familial insomnia prion, Feline spongiform encephalopathy prion, Gerstmann-Sträussler-Scheinker syndrome prion, Kuru prion, Scrapie prion, Transmissible mink encephalopathy prion)
- Rotavirus A-G
- Vaccinia virus
- West Nile virus

To identify NIH grants, the above-described search strategies for select agents, eradicated agents, and BSL-4 agents were used. NIH Grants for related and non-listed agents were not screened because of the number of agents.

The term “exotic” in the US Select Agent list

The term "exotic" in context of biological agents is more a political terminus for the purpose of keeping trade barriers than it is a scientifically verifiable and discrete terminus for the purpose of strain distinction. It is most commonly used with animal viruses. It's a holdover from times when virology was largely descriptive and not experimental, and a reflection of the view of livestock as property and commodities and not as entities with inherent value like humans. As a guideline, the author consulted *The Gray Book* (Committee on Foreign Animal Diseases of the United States Animal Health Association, Richmond, Virginia, 1998) and the web pages of the World Organisation of Animal Health (http://www.oie.int/eng/en_index.htm) to decide which agents were to be considered “exotic” for the purpose of this working paper. In the case of the alcelaphine herpesviruses it remained unclear to the author what strains were considered to be exotic – hence, all US research dealing with these agents was included. The World Health Organisation of Animal Health considers the Indiana-1 strain of vesicular stomatitis Indiana virus and the New Jersey strain of vesicular stomatitis New Jersey virus as endemic to the US, whereas the Indiana-2 (Cocal), Indiana-3 (Alagoas) and Piry “strains” are to be considered exotic. According to the newest taxonomy, the Cocal and Piry “strains” have been upgraded to species

status (Cocal virus and Piry viruses of the species *Cocal virus* and *Piry virus*, respectively), and hence are not to be considered vesicular stomatitis viruses anymore. Nevertheless, they were considered as such for this working paper.

“Increasing virulence” (MDA/1, PDA/2)

The author assumed that “increasing virulence” refers to the achievement of increasing virulence of an agent for its host organism. Projects with agents, which were naturally or artificially attenuated in their virulence, and were then reconstituted to become as virulent as the parental strain, were not considered for this subcategory.

“Powder or aerosol production/Powder or aerosol dispersal” (MDA/4/5, PDA/4/5)

The difference of production and dispersal of an aerosol was unclear to the author or difficult to differentiate in the retrieved articles. Hence, these subcategories were combined.

“De novo synthesis” (EDA/3, MDA/6, PDA/6)

The meaning of “*de novo* synthesis” was unclear to the author. Synthesis of an agent in a test tube from scratch without other living materials (*de novo* synthesis *sensu stricto*) has so far only been reported two times from the US and from Canada. One more paper reporting the “synthesis” of a phage (no other microbes have been “synthesized” yet) referred to the *de novo* synthesis of a viral genome with subsequent particle formation in living cells transfected or infected with this genome. These papers are listed in this working paper. *De novo* synthesis *sensu lato* usually refers to the establishment of reverse genetics or so-called cDNA clones based on infectious viruses. After introduction into living cells, these clones produce the genome, which then results

in particle formation, sometimes being dependent on helper plasmids. These kind of papers are not listed in this working paper.

“Insertion of host genes” (MDA/2)

The author assumed that “insertion of host genes” refers to the insertion of a gene derived from the natural host(s) of a particular agent. Hence, papers reporting the insertion of, for instance, green fluorescent protein (GFP) into an agent were not considered for this subcategory, because this protein is naturally encoded by a jelly fish, which is not infectable by the GFP-recombinant viruses and bacteria created.

“Eradicated” (EDA/1)

The term “eradicated” is not clearly defined. To the author’s knowledge, only one agent counts as being eradicated: Variola virus. The “1918 Influenza A virus” simply disappeared after the devastating pandemic of 1918 was over/contained. Also, “1918 Influenza A virus” is a colloquial term – it probably should be changed to regular influenzavirus nomenclature (*e.g.* Influenza A virus H1N1/1918 or the like). For this working paper, both and only “1918 Influenza A virus” and Variola virus were considered “eradicated”.

Unscreened Subcategories PDA/2-5

Categories PDA/2 (Increasing virulence of non-listed agent), PDA/3 (Increasing transmissibility or environmental stability of non-listed agent), and PDA/4/5 (Powder or aerosol production/dispersal of non-listed agent) remained unscreened because of the overall number of agents; the overall number of research papers to be screened; and the lack of a suitable search strategy even for a “shotgun” approach.

RESULTS

QUALITATIVE ASSESSMENT

POTENTIALLY DANGEROUS ACTIVITIES (PDA)

1 Work with listed agent – or exempt avirulent, attenuated, or vaccine strain of select agent – not covered by EDA/MDA

African horse sickness virus

Taxonomy: Family *Reoviridae*, Genus *Orbivirus*, Species *African horse sickness virus*. Virus:

African horse sickness virus 1-9.

Publications: None identified.

NIH Grants: None identified.

African swine fever virus

Taxonomy: Family *Asfarviridae*, Genus *Asfivirus*, Species *African swine fever virus*. Virus:

African swine fever virus, BA71V virus, Malawi LIL20/1 virus, E70 virus.

Publications:

1. **Lewis, T., L. Zsak, T. G. Burrage, Z. Lu, G. F. Kutish, J. G. Neilan, and D. L. Rock.** 2000. An African swine fever virus ERV1-ALR homologue, 9GL, affects virion maturation and viral growth in macrophages and viral virulence in swine. *J Virol* **74**:1275-85.

This paper reports the identification and isolation of a viral protein encoded by the gene 9GL. 9GL-deletion mutants of AFSFV were established and shown to be less virulent for swine, thus allowing the development of new vaccines.

2. **Zsak, L., Z. Lu, T. G. Burrage, J. G. Neilan, G. F. Kutish, D. M. Moore, and D. L. Rock.** 2001. African swine fever virus multigene family 360 and 530 genes are novel macrophage host range determinants. *J Virol* **75**:3066-76.
This paper reports the identification of fragmented genes in AFSFV isolates adapted to grow in monkey cell lines. It is shown that substitution of the fragmented gene with the full gene of native isolates restores their ability to grow in macrophages.
3. **Neilan, J. G., L. Zsak, Z. Lu, G. F. Kutish, C. L. Afonso, and D. L. Rock.** 2002. Novel swine virulence determinant in the left variable region of the African swine fever virus genome. *J Virol* **76**:3095-104.
This paper reports the identification of novel virulence determinants in various AFSFV isolates.
4. **Afonso, C. L., M. E. Piccone, K. M. Zaffuto, J. Neilan, G. F. Kutish, Z. Lu, C. A. Balinsky, T. R. Gibb, T. J. Bean, L. Zsak, and D. L. Rock.** 2004. African Swine Fever Virus Multigene Family 360 and 530 Genes Affect Host Interferon Response. *J Virol* **78**:1858-64.
This paper reports the results of macrophage transcriptional responses to infection with ASFV. The results are presented as a first step of the elucidation of the function of certain ASFV virulence determinants
5. **Burrage, T. G., Z. Lu, J. G. Neilan, D. L. Rock, and L. Zsak.** 2004. African swine fever virus multigene family 360 genes affect virus replication and generalization of infection in *Ornithodoros porcinus* ticks. *J Virol* **78**:2445-53.
This paper reports the introduction of a MGF360/530 gene deletion into a mutant ASFV isolate, the characterization of its impaired growth characteristics in ticks, and the conclusion that the 350 and 530 genes are important host range determinants of ASFV.
6. **Neilan, J. G., L. Zsak, Z. Lu, T. G. Burrage, G. F. Kutish, and D. L. Rock.** 2004. Neutralizing antibodies to African swine fever virus proteins p30, p54, and p72 are not sufficient for antibody-mediated protection. *Virology* **319**:337-42.
This paper reports the immunogenic properties of three viral proteins expressed from baculoviruses, and their inability to protect swine from challenge with African swine fever virus despite the induction of neutralizing antibodies.
7. **Zsak, L., M. V. Borca, G. R. Risatti, A. Zsak, R. A. French, Z. Lu, G. F. Kutish, J. G. Neilan, J. D. Callahan, W. M. Nelson, and D. L. Rock.** 2005. Preclinical diagnosis of African swine fever in contact-exposed swine by a real-time PCR assay. *J Clin Microbiol* **43**:112-9.
This paper reports the establishment of a fluorogenic probe hydrolysis TaqMan PCR assay for the diagnosis of African swine fever virus.

NIH Grants: None identified.

Akabane virus

Taxonomy: Family *Bunyaviridae*, Genus *Orthobunyavirus*, Species *Akabane virus*. Virus:

Akabane virus, Sabo virus, Tinaroo virus, Yaba-7 virus.

Publications: None identified.

NIH Grants: None identified.

Alcelaphine herpesvirus 1,2 (exotic)

Taxonomy: Family *Herpesviridae*, Subfamily: *Gammaherpesvirinae*, Genus *Rhadinovirus*,

Species *Alcelaphine herpesvirus 1*, *Alcelaphine herpesvirus 2*. Virus: Alcelaphine herpesvirus 1,

Malignant catarrhal fever virus, Alcelaphine herepesvirus 2, Hartebeest malignant catarrhal fever virus,

Ovine herpesvirus 2.

Publications:

1. **Li, H., G. Snowden, D. O'Toole, and T. B. Crawford.** 2000. Transmission of ovine herpesvirus 2 among adult sheep. *Vet Microbiol* **71**:27-35.
This paper reports the evaluation of transmission routes of AIHV-2 in sheep and concludes that the susceptibility is not restricted to lambs but that older sheep can transmit the virus as well.
2. **Dunowska, M., G. J. Letchworth, J. K. Collins, and J. C. DeMartini.** 2001. Ovine herpesvirus-2 glycoprotein B sequences from tissues of ruminant malignant catarrhal fever cases and healthy sheep are highly conserved. *J Gen Virol* **82**:2785-90.
This paper reports the sequencing and comparison of AIHV-2 glycoprotein B derived from AIHV-2 DNA isolated from bovines and bisons with malignant catarrhal fever and healthy sheep.
3. **Li, H., Y. Hua, G. Snowden, and T. B. Crawford.** 2001. Levels of ovine herpesvirus 2 DNA in nasal secretions and blood of sheep: implications for transmission. *Vet Microbiol* **79**:301-10.
This paper reports the evaluation of a PCR assay for AIHV-2 virus detection and the examination of virus DNA levels in nasal secretions and peripheral blood leukocytes of lambs and adult sheep.
4. **Li, H., T. C. McGuire, U. U. Muller-Doblies, and T. B. Crawford.** 2001. A simpler, more sensitive competitive inhibition enzyme-linked immunosorbent assay for detection of antibody to malignant catarrhal fever viruses. *J Vet Diagn Invest* **13**:361-4.

This paper reports the improvement and evaluation of a CI-ELISA for the detection of antibodies to AIHV.

5. **Li, H., G. D. Snowder, and T. B. Crawford.** 2002. Effect of passive transfer of maternal immune components on infection with ovine herpesvirus 2 in lambs. *Am J Vet Res* **63**:631-3.

This paper reports the observation regarding antibody development to AIHV-2 in lambs born to AIHV-2-infected and AIHV-2-free ewes after introduction into an AIHV-2-positive flock.

6. **Kim, O., H. Li, and T. B. Crawford.** 2003. Demonstration of sheep-associated malignant catarrhal fever virions in sheep nasal secretions. *Virus Res* **98**:117-22.

This paper reports the identification of cell-free AIHV-2 virions in nasal secretions of infected sheep identified by PCR.

NIH Grants: None identified.

Bacillus anthracis

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Bacilli*, Order *Bacillales*, Family

Bacillaceae.

Publications:

1. **Dixon, T. C., A. A. Fadl, T. M. Koehler, J. A. Swanson, and P. C. Hanna.** 2000. Early *Bacillus anthracis*-macrophage interactions: intracellular survival and escape. *Cell Microbiol* **2**:453-63.
This paper examines the interaction of the bacillus with macrophages.
2. **Elliott, J. L., J. Mogridge, and R. J. Collier.** 2000. A quantitative study of the interactions of *Bacillus anthracis* edema factor and lethal factor with activated protective antigen. *Biochemistry* **39**:6706-13.
This paper examines the function of toxins of the bacillus.
3. **Keim, P., L. B. Price, A. M. Klevytska, K. L. Smith, J. M. Schupp, R. Okinaka, P. J. Jackson, and M. E. Hugh-Jones.** 2000. Multiple-locus variable-number tandem repeat analysis reveals genetic relationships within *Bacillus anthracis*. *J Bacteriol* **182**:2928-36.
This paper reports the phylogenetic relationships of different strains of the bacillus.
4. **Kiel, J. L., J. E. Parker, J. L. Alls, J. Kalns, E. A. Holwitt, L. J. Stribling, P. J. Morales, and J. G. Bruno.** 2000. Rapid recovery and identification of anthrax bacteria from the environment. *Ann N Y Acad Sci* **916**:240-52.
This paper reports a method to isolate the bacillus from environmental samples.
5. **Park, S., and S. H. Leppla.** 2000. Optimized production and purification of *Bacillus anthracis* lethal factor. *Protein Expr Purif* **18**:293-302.

- This paper reports a method to isolate a toxin of the bacillus.
6. **Schupp, J. M., A. M. Klevytska, G. Zinser, L. B. Price, and P. Keim.** 2000. *vrrB*, a hypervariable open reading frame in *Bacillus anthracis*. *J Bacteriol* **182**:3989-97.
This paper reports a potential gene in the bacillus.
 7. **Smith, K. L., V. DeVos, H. Bryden, L. B. Price, M. E. Hugh-Jones, and P. Keim.** 2000. *Bacillus anthracis* diversity in Kruger National Park. *J Clin Microbiol* **38**:3780-4.
This paper reports the isolation of different strains of the bacillus.
 8. **Stopa, P. J.** 2000. The flow cytometry of *Bacillus anthracis* spores revisited. *Cytometry* **41**:237-44.
This paper reports the use of flow cytometry to sort spores of the bacillus.
 9. **Brook, I., T. B. Elliott, R. A. Harding, S. S. Bouhaouala, S. J. Peacock, G. D. Ledney, and G. B. Knudson.** 2001. Susceptibility of irradiated mice to *Bacillus anthracis* Sterne by the intratracheal route of infection. *J Med Microbiol* **50**:702-11.
This paper reports the effect of the bacillus on irradiated mice.
 10. **Brook, I., T. B. Elliott, H. I. Pryor, 2nd, T. E. Sautter, B. T. Gnade, J. H. Thakar, and G. B. Knudson.** 2001. In vitro resistance of *Bacillus anthracis* Sterne to doxycycline, macrolides and quinolones. *Int J Antimicrob Agents* **18**:559-62.
This paper reports the resistance of a strain of the bacillus to various antibiotics.
 11. **Brumlik, M. J., U. Szymajda, D. Zakowska, X. Liang, R. J. Redkar, G. Patra, and V. G. Del Vecchio.** 2001. Use of long-range repetitive element polymorphism-PCR to differentiate *Bacillus anthracis* strains. *Appl Environ Microbiol* **67**:3021-8.
This paper reports a PCR-based method to differentiate between different strains of the bacillus.
 12. **Dang, J. L., K. Heroux, J. Kearney, A. Arasteh, M. Gostomski, and P. A. Emanuel.** 2001. *Bacillus* spore inactivation methods affect detection assays. *Appl Environ Microbiol* **67**:3665-70.
This paper reports the effects of spore inactivation methods on diagnostic tests.
 13. **Duesbery, N. S., J. Resau, C. P. Webb, S. Koochekpour, H. M. Koo, S. H. Leppla, and G. F. Vande Woude.** 2001. Suppression of ras-mediated transformation and inhibition of tumor growth and angiogenesis by anthrax lethal factor, a proteolytic inhibitor of multiple MEK pathways. *Proc Natl Acad Sci U S A* **98**:4089-94.
This paper reports the effect of a toxin of the bacillus on signal transduction pathways.
 14. **Fellows, P. F., M. K. Linscott, B. E. Ivins, M. L. Pitt, C. A. Rossi, P. H. Gibbs, and A. M. Friedlander.** 2001. Efficacy of a human anthrax vaccine in guinea pigs, rabbits, and rhesus macaques against challenge by *Bacillus anthracis* isolates of diverse geographical origin. *Vaccine* **19**:3241-7.
This paper reports the evaluation of a vaccine candidate.
 15. **Keim, P., K. L. Smith, C. Keys, H. Takahashi, T. Kurata, and A. Kaufmann.** 2001. Molecular investigation of the Aum Shinrikyo anthrax release in Kameido, Japan. *J Clin Microbiol* **39**:4566-7.
This paper reports the characterization of a strain of the bacillus.
 16. **Le Fleche, P., Y. Hauck, L. Onteniente, A. Prieur, F. Denoeud, V. Ramiisse, P. Sylvestre, G. Benson, F. Ramiisse, and G. Vergnaud.** 2001. A tandem repeats database

- for bacterial genomes: application to the genotyping of *Yersinia pestis* and *Bacillus anthracis*. *BMC Microbiol* **1**:2.
This paper reports a method to differentiate strains of the bacillus.
17. **Liu, W. T., A. D. Mirzabekov, and D. A. Stahl.** 2001. Optimization of an oligonucleotide microchip for microbial identification studies: a non-equilibrium dissociation approach. *Environ Microbiol* **3**:619-29.
This paper reports a diagnostic system for the identification of the bacillus.
18. **Qi, Y., G. Patra, X. Liang, L. E. Williams, S. Rose, R. J. Redkar, and V. G. DelVecchio.** 2001. Utilization of the *rpoB* gene as a specific chromosomal marker for real-time PCR detection of *Bacillus anthracis*. *Appl Environ Microbiol* **67**:3720-7.
This paper reports the development of PCR-based diagnostic system for the detection of the bacillus.
19. **Welkos, S., S. Little, A. Friedlander, D. Fritz, and P. Fellows.** 2001. The role of antibodies to *Bacillus anthracis* and anthrax toxin components in inhibiting the early stages of infection by anthrax spores. *Microbiology* **147**:1677-85.
This paper reports the evaluation of antibodies and anthrax toxin as preventive therapeutics.
20. **Bell, C. A., J. R. Uhl, T. L. Hadfield, J. C. David, R. F. Meyer, T. F. Smith, and F. R. Cockerill, 3rd.** 2002. Detection of *Bacillus anthracis* DNA by LightCycler PCR. *J Clin Microbiol* **40**:2897-902.
This paper reports the development of a PCR-based diagnostic assay for the detection of the bacillus.
21. **Castillo, U. F., G. A. Strobel, E. J. Ford, W. M. Hess, H. Porter, J. B. Jensen, H. Albert, R. Robison, M. A. Condron, D. B. Teplow, D. Stevens, and D. Yaver.** 2002. Munumbicins, wide-spectrum antibiotics produced by *Streptomyces* NRRL 30562, endophytic on *Kennedia nigricans*. *Microbiology* **148**:2675-85.
This paper reports the effect of novel antibiotics on the bacillus.
22. **Coker, P. R., K. L. Smith, and M. E. Hugh-Jones.** 2002. Antimicrobial susceptibilities of diverse *Bacillus anthracis* isolates. *Antimicrob Agents Chemother* **46**:3843-5.
This paper reports the antibiotic susceptibility of different strains of the virus.
23. **De, B. K., S. L. Bragg, G. N. Sanden, K. E. Wilson, L. A. Diem, C. K. Marston, A. R. Hoffmaster, G. A. Barnett, R. S. Weyant, T. G. Abshire, J. W. Ezzell, and T. Popovic.** 2002. A two-component direct fluorescent-antibody assay for rapid identification of *Bacillus anthracis*. *Emerg Infect Dis* **8**:1060-5.
This paper reports the development of diagnostic assay for the detection of the bacillus.
24. **Elliott, T. B., I. Brook, R. A. Harding, S. S. Bouhaouala, M. O. Shoemaker, and G. B. Knudson.** 2002. Antimicrobial therapy for bacillus anthracis-induced polymicrobial infection in (60)Co gamma-irradiated mice. *Antimicrob Agents Chemother* **46**:3463-71.
This paper reports an antibiotic treatment regimen for irradiated mice infected with the bacillus.
25. **Espy, M. J., J. R. Uhl, L. M. Sloan, J. E. Rosenblatt, F. R. Cockerill, 3rd, and T. F. Smith.** 2002. Detection of vaccinia virus, herpes simplex virus, varicella-zoster virus, and *Bacillus anthracis* DNA by LightCycler polymerase chain reaction after autoclaving: implications for biosafety of bioterrorism agents. *Mayo Clin Proc* **77**:624-8.

- This paper reports the development of a PCR-based diagnostic system for the detection of the bacillus.
26. **Fellows, P. F., M. K. Linscott, S. F. Little, P. Gibbs, and B. E. Ivins.** 2002. Anthrax vaccine efficacy in golden Syrian hamsters. *Vaccine* **20**:1421-4.
This paper reports the avluation of a vaccine candidate.
27. **Fouet, A., K. L. Smith, C. Keys, J. Vaissaire, C. Le Doujet, M. Levy, M. Mock, and P. Keim.** 2002. Diversity among French Bacillus anthracis isolates. *J Clin Microbiol* **40**:4732-4.
This paper reports differences between strains of the bacillus.
28. **Hart, M. K., R. A. Del Giudice, and G. W. Korch, Jr.** 2002. Absence of mycoplasma contamination in the anthrax vaccine. *Emerg Infect Dis* **8**:94-6.
This paper reports the quality control of the anthrax vaccine.
29. **Hoffmaster, A. R., C. C. Fitzgerald, E. Ribot, L. W. Mayer, and T. Popovic.** 2002. Molecular subtyping of Bacillus anthracis and the 2001 bioterrorism-associated anthrax outbreak, United States. *Emerg Infect Dis* **8**:1111-6.
This paper reports the characterization of a strain of the bacillus.
30. **Hurtle, W., D. Shoemaker, E. Henchal, and D. Norwood.** 2002. Denaturing HPLC for identifying bacteria. *Biotechniques* **33**:386-8, 390-1.
This paper reports a method for indentifying the bacillus.
31. **Ireland, J. A., and P. C. Hanna.** 2002. Amino acid- and purine ribonucleoside-induced germination of Bacillus anthracis DeltaSterne endospores: gerS mediates responses to aromatic ring structures. *J Bacteriol* **184**:1296-303.
This paper reports the induction of sporulation of the bacillus by specific nutrients.
32. **Ireland, J. A., and P. C. Hanna.** 2002. Macrophage-enhanced germination of Bacillus anthracis endospores requires gerS. *Infect Immun* **70**:5870-2.
This paper reports the importance of a gene of the bacillus for sporulation.
33. **Kalns, J., J. Morris, J. Eggers, and J. Kiel.** 2002. Delayed treatment with doxycycline has limited effect on anthrax infection in BLK57/B6 mice. *Biochem Biophys Res Commun* **297**:506-9.
This paper reports the evaluation of a treatment regimen.
34. **Kalns, J., J. Scruggs, N. Millenbaugh, J. Vivekananda, D. Shealy, J. Eggers, and J. Kiel.** 2002. TNF receptor 1, IL-1 receptor, and iNOS genetic knockout mice are not protected from anthrax infection. *Biochem Biophys Res Commun* **292**:41-4.
This paper reports the effect of missing cytokines on protection of mice from infections with the bacillus.
35. **Kiel, J. L., J. E. Parker, H. Gifford, L. J. Stribling, J. L. Alls, M. L. Meltz, R. P. McCreary, and E. A. Holwitt.** 2002. Basis for the extraordinary genetic stability of anthrax. *Ann N Y Acad Sci* **969**:112-8.
This paper attempts to explain the genetic stability of strains of the bacillus.
36. **Mohammed, M. J., C. K. Marston, T. Popovic, R. S. Weyant, and F. C. Tenover.** 2002. Antimicrobial susceptibility testing of Bacillus anthracis: comparison of results obtained by using the National Committee for Clinical Laboratory Standards broth microdilution reference and Etest agar gradient diffusion methods. *J Clin Microbiol* **40**:1902-7.

- This paper reports the antimicrobial susceptibility testing of different strains of the bacillus.
37. **Pannucci, J., R. T. Okinaka, R. Sabin, and C. R. Kuske.** 2002. Bacillus anthracis pXO1 plasmid sequence conservation among closely related bacterial species. *J Bacteriol* **184**:134-41.
- This paper reports the sequence comparison of a plasmid of different strains of the bacillus.
38. **Patra, G., L. E. Williams, Y. Qi, S. Rose, R. Redkar, and V. G. Delvecchio.** 2002. Rapid genotyping of Bacillus anthracis strains by real-time polymerase chain reaction. *Ann N Y Acad Sci* **969**:106-11.
- This paper reports the identification of strains of the bacillus with a PCR-based assay.
39. **Popov, S. G., R. Villasmil, J. Bernardi, E. Grene, J. Cardwell, T. Popova, A. Wu, D. Alibek, C. Bailey, and K. Alibek.** 2002. Effect of Bacillus anthracis lethal toxin on human peripheral blood mononuclear cells. *FEBS Lett* **527**:211-5.
- This paper reports the effect of a toxin of the bacillus on human blood cells.
40. **Popov, S. G., R. Villasmil, J. Bernardi, E. Grene, J. Cardwell, A. Wu, D. Alibek, C. Bailey, and K. Alibek.** 2002. Lethal toxin of Bacillus anthracis causes apoptosis of macrophages. *Biochem Biophys Res Commun* **293**:349-55.
- This paper reports the effect of a toxin of the bacillus on macrophages.
41. **Ramirez, D. M., S. H. Leppla, R. Schneerson, and J. Shiloach.** 2002. Production, recovery and immunogenicity of the protective antigen from a recombinant strain of Bacillus anthracis. *J Ind Microbiol Biotechnol* **28**:232-8.
- This paper reports the characterization of protective antigen from a strain of the bacillus.
42. **Read, T. D., S. L. Salzberg, M. Pop, M. Shumway, L. Umayam, L. Jiang, E. Holtzapple, J. D. Busch, K. L. Smith, J. M. Schupp, D. Solomon, P. Keim, and C. M. Fraser.** 2002. Comparative genome sequencing for discovery of novel polymorphisms in Bacillus anthracis. *Science* **296**:2028-33.
- This paper reports the sequencing of different strains of the bacillus.
43. **Sacchi, C. T., A. M. Whitney, L. W. Mayer, R. Morey, A. Steigerwalt, A. Boras, R. S. Weyant, and T. Popovic.** 2002. Sequencing of 16S rRNA gene: a rapid tool for identification of Bacillus anthracis. *Emerg Infect Dis* **8**:1117-23.
- This paper reports a method to identify the bacillus.
44. **Saile, E., and T. M. Koehler.** 2002. Control of anthrax toxin gene expression by the transition state regulator abrB. *J Bacteriol* **184**:370-80.
- This paper reports the identification of a factor of the bacillus that controls expression of a toxin.
45. **Sanderson, W. T., M. J. Hein, L. Taylor, B. D. Curwin, G. M. Kinnes, T. A. Seitz, T. Popovic, H. T. Holmes, M. E. Kellum, S. K. McAllister, D. N. Whaley, E. A. Tupin, T. Walker, J. A. Freed, D. S. Small, B. Klusaritz, and J. H. Bridges.** 2002. Surface sampling methods for Bacillus anthracis spore contamination. *Emerg Infect Dis* **8**:1145-51.
- This paper reports a method to isolate the bacillus from surfaces.
46. **Schuch, R., D. Nelson, and V. A. Fischetti.** 2002. A bacteriolytic agent that detects and kills Bacillus anthracis. *Nature* **418**:884-9.

- This paper reports an antibiotic effective to kill the bacillus.
47. **Taitt, C. R., G. P. Anderson, B. M. Lingerfelt, M. J. Feldstein, and F. S. Ligler.** 2002. Nine-analyte detection using an array-based biosensor. *Anal Chem* **74**:6114-20.
- This paper reports the development of a biosensor capable of detection the bacillus.
48. **Vogler, A. J., J. D. Busch, S. Percy-Fine, C. Tipton-Hunton, K. L. Smith, and P. Keim.** 2002. Molecular analysis of rifampin resistance in *Bacillus anthracis* and *Bacillus cereus*. *Antimicrob Agents Chemother* **46**:511-3.
- This paper reports the molecular basis of resistance of the bacillus to an antibiotic.
49. **Welkos, S., A. Friedlander, S. Weeks, S. Little, and I. Mendelson.** 2002. In-vitro characterisation of the phagocytosis and fate of anthrax spores in macrophages and the effects of anti-PA antibody. *J Med Microbiol* **51**:821-31.
- This paper reports characteristics of the interaction of spores of the bacillus with macrophages.
50. **Arakawa, E. T., N. V. Lavrik, and P. G. Datskos.** 2003. Detection of anthrax simulants with microcalorimetric spectroscopy: *Bacillus subtilis* and *Bacillus cereus* spores. *Appl Opt* **42**:1757-62.
- This paper reports a method for identification of the bacillus.
51. **Ariel, N., A. Zvi, K. S. Makarova, T. Chitlaru, E. Elhanany, B. Velan, S. Cohen, A. M. Friedlander, and A. Shafferman.** 2003. Genome-based bioinformatic selection of chromosomal *Bacillus anthracis* putative vaccine candidates coupled with proteomic identification of surface-associated antigens. *Infect Immun* **71**:4563-79.
- This paper reports a strategy for developing vaccine candidates.
52. **Baillie, L., R. Hebdon, H. Flick-Smith, and D. Williamson.** 2003. Characterisation of the immune response to the UK human anthrax vaccine. *FEMS Immunol Med Microbiol* **36**:83-6.
- This paper reports the evaluation of a vaccine.
53. **Bourgogne, A., M. Drysdale, S. G. Hilsenbeck, S. N. Peterson, and T. M. Koehler.** 2003. Global effects of virulence gene regulators in a *Bacillus anthracis* strain with both virulence plasmids. *Infect Immun* **71**:2736-43.
- This paper reports the effect of gene-regulating factors on the bacillus.
54. **Boyaka, P. N., A. Tafaro, R. Fischer, S. H. Leppla, K. Fujihashi, and J. R. McGhee.** 2003. Effective mucosal immunity to anthrax: neutralizing antibodies and Th cell responses following nasal immunization with protective antigen. *J Immunol* **170**:5636-43.
- This paper reports the effect of a vaccine candidate.
55. **Breadmore, M. C., K. A. Wolfe, I. G. Arcibal, W. K. Leung, D. Dickson, B. C. Giordano, M. E. Power, J. P. Ferrance, S. H. Feldman, P. M. Norris, and J. P. Landers.** 2003. Microchip-based purification of DNA from biological samples. *Anal Chem* **75**:1880-6.
- This paper reports the development of a detection method.
56. **Castillo, U., J. K. Harper, G. A. Strobel, J. Sears, K. Alesi, E. Ford, J. Lin, M. Hunter, M. Maranta, H. Ge, D. Yaver, J. B. Jensen, H. Porter, R. Robison, D. Millar, W. M. Hess, M. Condrón, and D. Teplow.** 2003. Kakadumycins, novel antibiotics from *Streptomyces* sp NRRL 30566, an endophyte of *Grevillea pteridifolia*. *FEMS Microbiol Lett* **224**:183-90.

- This paper reports the evaluation of a new antibiotic.
57. **Chada, V. G., E. A. Sanstad, R. Wang, and A. Driks.** 2003. Morphogenesis of bacillus spore surfaces. *J Bacteriol* **185**:6255-61.
- This paper reports the morphogenesis of spores of the bacillus.
58. **Chen, Y., J. Succi, F. C. Tenover, and T. M. Koehler.** 2003. Beta-lactamase genes of the penicillin-susceptible *Bacillus anthracis* Sterne strain. *J Bacteriol* **185**:823-30.
- This paper reports the characterization of antibiotic resistance genes of a strain of the bacillus.
59. **Chopra, A. P., S. A. Boone, X. Liang, and N. S. Duesbery.** 2003. Anthrax lethal factor proteolysis and inactivation of MAPK kinase. *J Biol Chem* **278**:9402-6.
- This paper reports an effect of a toxin of the bacillus.
60. **Coker, P. R., K. L. Smith, P. F. Fellows, G. Rybachuck, K. G. Kousoulas, and M. E. Hugh-Jones.** 2003. *Bacillus anthracis* virulence in Guinea pigs vaccinated with anthrax vaccine adsorbed is linked to plasmid quantities and clonality. *J Clin Microbiol* **41**:1212-8.
- This paper reports the evaluation of a vaccine candidate.
61. **Frean, J., K. P. Klugman, L. Arntzen, and S. Bukofzer.** 2003. Susceptibility of *Bacillus anthracis* to eleven antimicrobial agents including novel fluoroquinolones and a ketolide. *J Antimicrob Chemother* **52**:297-9.
- This paper reports the antibiotic resistance spectrum of the bacillus.
62. **Galeano, B., E. Korff, and W. L. Nicholson.** 2003. Inactivation of vegetative cells, but not spores, of *Bacillus anthracis*, *B. cereus*, and *B. subtilis* on stainless steel surfaces coated with an antimicrobial silver- and zinc-containing zeolite formulation. *Appl Environ Microbiol* **69**:4329-31.
- This paper reports the evaluation of a spore inactivation method.
63. **Hartley, H. A., and A. J. Baeumner.** 2003. Biosensor for the specific detection of a single viable *B. anthracis* spore. *Anal Bioanal Chem* **376**:319-27.
- This paper reports the development of a biosensor for the detection of the bacillus.
64. **Higgins, J. A., M. Cooper, L. Schroeder-Tucker, S. Black, D. Miller, J. S. Karns, E. Manthey, R. Breeze, and M. L. Perdue.** 2003. A field investigation of *Bacillus anthracis* contamination of U.S. Department of Agriculture and other Washington, D.C., buildings during the anthrax attack of October 2001. *Appl Environ Microbiol* **69**:593-9.
- This paper reports the isolation and molecular characterization of different strains of the bacillus.
65. **Higgins, J. A., S. Nasarabadi, J. S. Karns, D. R. Shelton, M. Cooper, A. Gbakima, and R. P. Koopman.** 2003. A handheld real time thermal cycler for bacterial pathogen detection. *Biosens Bioelectron* **18**:1115-23.
- This paper reports the development of a PCR-based diagnostic system.
66. **Hurtle, W., E. Bode, R. S. Kaplan, J. Garrison, B. Kearney, D. Shoemaker, E. Henchal, and D. Norwood.** 2003. Use of denaturing high-performance liquid chromatography to identify *Bacillus anthracis* by analysis of the 16S-23S rRNA interspacer region and *gyrA* gene. *J Clin Microbiol* **41**:4758-66.
- This paper reports the development of a diagnostic system.

67. **Jones, M. B., and M. J. Blaser.** 2003. Detection of a luxS-signaling molecule in *Bacillus anthracis*. *Infect Immun* **71**:3914-9.
This paper reports the identification of a signaling molecule in the bacillus.
68. **Jones, M. E., J. Goguen, I. A. Critchley, D. C. Draghi, J. A. Karlowsky, D. F. Sahn, R. Porschen, G. Patra, and V. G. DelVecchio.** 2003. Antibiotic susceptibility of isolates of *Bacillus anthracis*, a bacterial pathogen with the potential to be used in biowarfare. *Clin Microbiol Infect* **9**:984-6.
This paper reports the antibiotic susceptibility of several strains of the bacillus.
69. **Klichko, V. I., J. Miller, A. Wu, S. G. Popov, and K. Alibek.** 2003. Anaerobic induction of *Bacillus anthracis* hemolytic activity. *Biochem Biophys Res Commun* **303**:855-62.
This paper describes the induction of the hemolytic activity of the bacillus.
70. **Lai, E. M., N. D. Phadke, M. T. Kachman, R. Giorno, S. Vazquez, J. A. Vazquez, J. R. Maddock, and A. Driks.** 2003. Proteomic analysis of the spore coats of *Bacillus subtilis* and *Bacillus anthracis*. *J Bacteriol* **185**:1443-54.
This paper reports the composition of the spore coats of the bacillus.
71. **Lee, J. S., A. G. Hadjipanayis, and S. L. Welkos.** 2003. Venezuelan equine encephalitis virus-vectored vaccines protect mice against anthrax spore challenge. *Infect Immun* **71**:1491-6.
This paper reports the evaluation of a vaccine candidate.
72. **Luna, V. A., D. King, C. Davis, T. Rycerz, M. Ewert, A. Cannons, P. Amuso, and J. Cattani.** 2003. Novel sample preparation method for safe and rapid detection of *Bacillus anthracis* spores in environmental powders and nasal swabs. *J Clin Microbiol* **41**:1252-5.
This paper reports a sample method for the bacillus.
73. **Naqvi, A., E. Tinsley, and S. A. Khan.** 2003. Purification and characterization of the PcrA helicase of *Bacillus anthracis*. *J Bacteriol* **185**:6633-9.
This paper reports the isolation of an enzyme of the bacillus.
74. **Nicholson, W. L., and B. Galeano.** 2003. UV resistance of *Bacillus anthracis* spores revisited: validation of *Bacillus subtilis* spores as UV surrogates for spores of *B. anthracis* Sterne. *Appl Environ Microbiol* **69**:1327-30.
This paper reports the evaluation of UV light as an inactivator for spores of the bacillus.
75. **Niebuhr, S. E., and J. S. Dickson.** 2003. Destruction of *Bacillus anthracis* strain Sterne 34F2 spores in postal envelopes by exposure to electron beam irradiation. *Lett Appl Microbiol* **37**:17-20.
This paper reports the inactivation of the bacillus by electron beams.
76. **Perdue, M. L., J. Karns, J. Higgins, and J. A. Van Kessel.** 2003. Detection and fate of *Bacillus anthracis* (Sterne) vegetative cells and spores added to bulk tank milk. *J Food Prot* **66**:2349-54.
This paper reports the detection of the bacillus in bulk tank milk.
77. **Pomerantsev, A. P., K. V. Kalnin, M. Osorio, and S. H. Leppla.** 2003. Phosphatidylcholine-specific phospholipase C and sphingomyelinase activities in bacteria of the *Bacillus cereus* group. *Infect Immun* **71**:6591-606.
This paper reports the activities of certain enzymes of the bacillus.

78. **Radnedge, L., P. G. Agron, K. K. Hill, P. J. Jackson, L. O. Ticknor, P. Keim, and G. L. Andersen.** 2003. Genome differences that distinguish *Bacillus anthracis* from *Bacillus cereus* and *Bacillus thuringiensis*. *Appl Environ Microbiol* **69**:2755-64.
This paper reports genomic characteristics of the bacillus.
79. **Radyuk, S. N., P. A. Mericko, T. G. Popova, E. Grene, and K. Alibek.** 2003. In vitro-generated respiratory mucosa: a new tool to study inhalational anthrax. *Biochem Biophys Res Commun* **305**:624-32.
This paper reports a method to study inhalational anthrax.
80. **Read, T. D., S. N. Peterson, N. Tourasse, L. W. Baillie, I. T. Paulsen, K. E. Nelson, H. Tettelin, D. E. Fouts, J. A. Eisen, S. R. Gill, E. K. Holtzapple, O. A. Okstad, E. Helgason, J. Rilstone, M. Wu, J. F. Kolonay, M. J. Beanan, R. J. Dodson, L. M. Brinkac, M. Gwinn, R. T. DeBoy, R. Madpu, S. C. Daugherty, A. S. Durkin, D. H. Haft, W. C. Nelson, J. D. Peterson, M. Pop, H. M. Khouri, D. Radune, J. L. Benton, Y. Mahamoud, L. Jiang, I. R. Hance, J. F. Weidman, K. J. Berry, R. D. Plaut, A. M. Wolf, K. L. Watkins, W. C. Nierman, A. Hazen, R. Cline, C. Redmond, J. E. Thwaite, O. White, S. L. Salzberg, B. Thomason, A. M. Friedlander, T. M. Koehler, P. C. Hanna, A. B. Kolsto, and C. M. Fraser.** 2003. The genome sequence of *Bacillus anthracis* Ames and comparison to closely related bacteria. *Nature* **423**:81-6.
This paper reports the genomic sequence of a strain of the virus.
81. **Schneerson, R., J. Kubler-Kielb, T. Y. Liu, Z. D. Dai, S. H. Leppla, A. Yergey, P. Backlund, J. Shiloach, F. Majadly, and J. B. Robbins.** 2003. Poly(γ -D-glutamic acid) protein conjugates induce IgG antibodies in mice to the capsule of *Bacillus anthracis*: a potential addition to the anthrax vaccine. *Proc Natl Acad Sci U S A* **100**:8945-50.
This paper reports the evaluation of an adjuvant for a vaccine.
82. **Shannon, J. G., C. L. Ross, T. M. Koehler, and R. F. Rest.** 2003. Characterization of anthrolysin O, the *Bacillus anthracis* cholesterol-dependent cytolysin. *Infect Immun* **71**:3183-9.
This paper reports the characterization of a toxin of the bacillus.
83. **Shieh, W. J., J. Guarner, C. Paddock, P. Greer, K. Tatti, M. Fischer, M. Layton, M. Philips, E. Bresnitz, C. P. Quinn, T. Popovic, B. A. Perkins, and S. R. Zaki.** 2003. The critical role of pathology in the investigation of bioterrorism-related cutaneous anthrax. *Am J Pathol* **163**:1901-10.
This paper describes approaches to describe the pathology induced by the bacillus.
84. **Steichen, C., P. Chen, J. F. Kearney, and C. L. Turnbough, Jr.** 2003. Identification of the immunodominant protein and other proteins of the *Bacillus anthracis* exosporium. *J Bacteriol* **185**:1903-10.
This paper reports the identification of a protein of the bacillus.
85. **Walter, M. H., and D. D. Baker.** 2003. Three *Bacillus anthracis* bacteriophages from topsoil. *Curr Microbiol* **47**:55-8.
This paper reports the isolation of three viruses of the bacillus.
86. **Warscheid, B., and C. Fenselau.** 2003. Characterization of *Bacillus* spore species and their mixtures using postsource decay with a curved-field reflectron. *Anal Chem* **75**:5618-27.

- This paper reports the development of a detection system for the bacillus.
87. **Weiner, M. A., and P. C. Hanna.** 2003. Macrophage-mediated germination of *Bacillus anthracis* endospores requires the gerH operon. *Infect Immun* **71**:3954-9.
This paper reports the requirement of certain genes of the bacillus for successful germination of its spores.
88. **Weiner, M. A., T. D. Read, and P. C. Hanna.** 2003. Identification and characterization of the gerH operon of *Bacillus anthracis* endospores: a differential This paper reports the requirement of certain genes of the bacillus for successful germination of its spores.
89. **Whittaker, P., M. M. Mossoba, S. Al-Khaldi, F. S. Fry, V. C. Dunkel, B. D. Tall, and M. P. Yurawecz.** 2003. Identification of foodborne bacteria by infrared spectroscopy using cellular fatty acid methyl esters. *J Microbiol Methods* **55**:709-16.
This paper reports the development of a detection method.
90. **Williams, D. D., O. Benedek, and C. L. Turnbough, Jr.** 2003. Species-specific peptide ligands for the detection of *Bacillus anthracis* spores. *Appl Environ Microbiol* **69**:6288-93.
This paper reports the development of a detection method.
91. **Williams, R. C., M. L. Rees, M. F. Jacobs, Z. Pragai, J. E. Thwaite, L. W. Baillie, P. T. Emmerson, and C. R. Harwood.** 2003. Production of *Bacillus anthracis* protective antigen is dependent on the extracellular chaperone, PrsA. *J Biol Chem* **278**:18056-62.
This paper reports the identification of a protein necessary for production of protective antigen by the bacillus.
92. **Anand, S. P., P. Mitra, A. Naqvi, and S. A. Khan.** 2004. *Bacillus anthracis* and *Bacillus cereus* PcrA helicases can support DNA unwinding and in vitro rolling-circle replication of plasmid pT181 of *Staphylococcus aureus*. *J Bacteriol* **186**:2195-9.
This paper reports the functional characterization of an enzyme that is important for replication of the bacillus.
93. **Babaoglu, K., J. Qi, R. E. Lee, and S. W. White.** 2004. Crystal structure of 7,8-dihydropteroate synthase from *Bacillus anthracis*: mechanism and novel inhibitor design. *Structure (Camb)* **12**:1705-17.
This paper reports the crystal structure of an enzyme of the bacillus.
94. **Baemner, A. J., B. Leonard, J. McElwee, and R. A. Montagna.** 2004. A rapid biosensor for viable *B. anthracis* spores. *Anal Bioanal Chem* **380**:15-23.
This paper reports the development of a detection method.
95. **Barrow, E. W., P. C. Bourne, and W. W. Barrow.** 2004. Functional cloning of *Bacillus anthracis* dihydrofolate reductase and confirmation of natural resistance to trimethoprim. *Antimicrob Agents Chemother* **48**:4643-9.
This paper reports the cloning of an enzyme of the bacillus that is important for antibiotic resistance.
96. **Bavykin, S. G., Y. P. Lysov, V. Zakhariev, J. J. Kelly, J. Jackman, D. A. Stahl, and A. Cherni.** 2004. Use of 16S rRNA, 23S rRNA, and gyrB gene sequence analysis to determine phylogenetic relationships of *Bacillus cereus* group microorganisms. *J Clin Microbiol* **42**:3711-30.
This paper reports the sequencing of certain genes of the bacillus to determine its phylogenetic relationships.

97. **Belosludtsev, Y. Y., D. Bowerman, R. Weil, N. Marthandan, R. Balog, K. Luebke, J. Lawson, S. A. Johnston, C. R. Lyons, K. Obrien, H. R. Garner, and T. F. Powdrill.** 2004. Organism identification using a genome sequence-independent universal microarray probe set. *Biotechniques* **37**:654-8, 660.
This paper reports an identification method.
98. **Bode, E., W. Hurtle, and D. Norwood.** 2004. Real-time PCR assay for a unique chromosomal sequence of *Bacillus anthracis*. *J Clin Microbiol* **42**:5825-31.
This paper reports the development of a detection system,
99. **Brigati, J., D. D. Williams, I. B. Sorokulova, V. Nanduri, I. H. Chen, C. L. Turnbough, Jr., and V. A. Petrenko.** 2004. Diagnostic probes for *Bacillus anthracis* spores selected from a landscape phage library. *Clin Chem* **50**:1899-906.
This paper reports a detection method.
100. **Brumlik, M. J., A. Bielawska-Drozd, D. Zakowska, X. Liang, R. A. Spalletta, G. Patra, and V. G. Delvecchio.** 2004. Genetic diversity among *Bacillus anthracis*, *Bacillus cereus* and *Bacillus thuringiensis* strains using repetitive element polymorphism-PCR. *Pol J Microbiol* **53**:215-25.
This paper reports the differentiation of different strains of bacillus.
101. **Cendrowski, S., W. MacArthur, and P. Hanna.** 2004. *Bacillus anthracis* requires siderophore biosynthesis for growth in macrophages and mouse virulence. *Mol Microbiol* **51**:407-17.
This paper reports a factor important for sustenance of the bacillus in macrophages.
102. **Chabot, D. J., A. Scorpio, S. A. Tobery, S. F. Little, S. L. Norris, and A. M. Friedlander.** 2004. Anthrax capsule vaccine protects against experimental infection. *Vaccine* **23**:43-7.
This paper reports the evaluation of a vaccine candidate.
103. **Chen, Y., F. C. Tenover, and T. M. Koehler.** 2004. Beta-lactamase gene expression in a penicillin-resistant *Bacillus anthracis* strain. *Antimicrob Agents Chemother* **48**:4873-7.
This paper reports the examination of the expression of a gene important for antibiotic resistance of the bacillus.
104. **Cote, C. K., K. M. Rea, S. L. Norris, N. van Rooijen, and S. L. Welkos.** 2004. The use of a model of in vivo macrophage depletion to study the role of macrophages during infection with *Bacillus anthracis* spores. *Microb Pathog* **37**:169-75.
This paper describes the dependency of the bacillus on macrophages.
105. **Coyne, S. R., P. D. Craw, D. A. Norwood, and M. P. Ulrich.** 2004. Comparative analysis of the Schleicher and Schuell IsoCode Stix DNA isolation device and the Qiagen QIAamp DNA Mini Kit. *J Clin Microbiol* **42**:4859-62.
This paper reports the evaluation of a detection method.
106. **Daubenspeck, J. M., H. Zeng, P. Chen, S. Dong, C. T. Steichen, N. R. Krishna, D. G. Pritchard, and C. L. Turnbough, Jr.** 2004. Novel oligosaccharide side chains of the collagen-like region of BclA, the major glycoprotein of the *Bacillus anthracis* exosporium. *J Biol Chem* **279**:30945-53.
This paper reports the characterization of a surface protein of the bacillus.

107. **Drysdale, M., A. Bourgogne, S. G. Hilsenbeck, and T. M. Koehler.** 2004. atxA controls Bacillus anthracis capsule synthesis via acpA and a newly discovered regulator, acpB. *J Bacteriol* **186**:307-15.
This paper reports the identification of a protein of the bacillus that is important for capsule synthesis.
108. **Dwyer, K. G., J. M. Lamonica, J. A. Schumacher, L. E. Williams, J. Bishara, A. Lewandowski, R. Redkar, G. Patra, and V. G. DelVecchio.** 2004. Identification of Bacillus anthracis specific chromosomal sequences by suppressive subtractive hybridization. *BMC Genomics* **5**:15.
This paper reports the identification of sequences specific to the bacillus.
109. **Ferencko, L., M. A. Cote, and B. Rotman.** 2004. Esterase activity as a novel parameter of spore germination in Bacillus anthracis. *Biochem Biophys Res Commun* **319**:854-8.
This paper the identification of an important factor for bacillus spore germination.
110. **Galloway, D., A. Liner, J. Legutki, A. Mateczun, R. Barnewall, and J. Estep.** 2004. Genetic immunization against anthrax. *Vaccine* **22**:1604-8.
This paper reports the development of a vaccine candidate.
111. **Garner, B. L., J. E. Arceneaux, and B. R. Byers.** 2004. Temperature control of a 3,4-dihydroxybenzoate (protocatechuate)-based siderophore in Bacillus anthracis. *Curr Microbiol* **49**:89-94.
This paper reports the expression control of an iron-binding protein of the bacillus.
112. **Gold, J. A., Y. Hoshino, S. Hoshino, M. B. Jones, A. Nolan, and M. D. Weiden.** 2004. Exogenous gamma and alpha/beta interferon rescues human macrophages from cell death induced by Bacillus anthracis. *Infect Immun* **72**:1291-7.
This paper reports the importance of certain cytokines for the protection of macrophages from Bacillus-induced death.
113. **Hammamieh, R., S. Bi, R. Das, R. Neill, and M. Jett.** 2004. Modeling of SEB-induced host gene expression to correlate in vitro to in vivo responses. *Biosens Bioelectron* **20**:719-27.
This paper reports the response of peripheral blood mononuclear cells to exposure with the bacillus.
114. **Hill, K. K., L. O. Ticknor, R. T. Okinaka, M. Asay, H. Blair, K. A. Bliss, M. Laker, P. E. Pardington, A. P. Richardson, M. Tonks, D. J. Beecher, J. D. Kemp, A. B. Kolsto, A. C. Wong, P. Keim, and P. J. Jackson.** 2004. Fluorescent amplified fragment length polymorphism analysis of Bacillus anthracis, Bacillus cereus, and Bacillus thuringiensis isolates. *Appl Environ Microbiol* **70**:1068-80.
This paper reports a method to differentiate bacillus strains.
115. **Hsu, L. C., J. M. Park, K. Zhang, J. L. Luo, S. Maeda, R. J. Kaufman, L. Eckmann, D. G. Guiney, and M. Karin.** 2004. The protein kinase PKR is required for macrophage apoptosis after activation of Toll-like receptor 4. *Nature* **428**:341-5.
This paper reports that the bacillus selectively induces apoptosis of activated macrophages through its lethal toxin.
116. **Huang, C. M., K. W. Foster, T. S. DeSilva, K. R. Van Kampen, C. A. Elmetts, and D. C. Tang.** 2004. Identification of Bacillus anthracis proteins associated with germination and early outgrowth by proteomic profiling of anthrax spores. *Proteomics* **4**:2653-61.

- This paper reports the identification of proteins important for germination of bacillus spores.
117. **Hurtle, W., E. Bode, D. A. Kulesh, R. S. Kaplan, J. Garrison, D. Bridge, M. House, M. S. Frye, B. Loveless, and D. Norwood.** 2004. Detection of the *Bacillus anthracis* *gyrA* gene by using a minor groove binder probe. *J Clin Microbiol* **42**:179-85.
This paper reports the detection of a gene of the bacillus.
118. **Karginov, V. A., T. M. Robinson, J. Riemenschneider, B. Golding, M. Kennedy, J. Shiloach, and K. Alibek.** 2004. Treatment of anthrax infection with combination of ciprofloxacin and antibodies to protective antigen of *Bacillus anthracis*. *FEMS Immunol Med Microbiol* **40**:71-4.
This paper reports the evaluation of a treatment regimen.
119. **Kenney, R. T., J. Yu, M. Guebre-Xabier, S. A. Frech, A. Lambert, B. A. Heller, L. R. Ellingsworth, J. E. Eyles, E. D. Williamson, and G. M. Glenn.** 2004. Induction of protective immunity against lethal anthrax challenge with a patch. *J Infect Dis* **190**:774-82.
This paper reports the evaluation of a vaccine candidate.
120. **Kim, H. S., D. Sherman, F. Johnson, and A. I. Aronson.** 2004. Characterization of a major *Bacillus anthracis* spore coat protein and its role in spore inactivation. *J Bacteriol* **186**:2413-7.
This paper reports the characterization of a spore protein of the bacillus.
121. **Klinman, D. M., H. Xie, S. F. Little, D. Currie, and B. E. Ivins.** 2004. CpG oligonucleotides improve the protective immune response induced by the anthrax vaccination of rhesus macaques. *Vaccine* **22**:2881-6.
This paper reports the improvement of a vaccine candidate.
122. **Kozel, T. R., W. J. Murphy, S. Brandt, B. R. Blazar, J. A. Lovchik, P. Thorkildson, A. Percival, and C. R. Lyons.** 2004. mAbs to *Bacillus anthracis* capsular antigen for immunoprotection in anthrax and detection of antigenemia. *Proc Natl Acad Sci U S A* **101**:5042-7.
This paper reports the development of a vaccine candidate.
123. **Little, S. F.** 2004. Western blot analysis of the exotoxin components from *Bacillus anthracis* separated by isoelectric focusing gel electrophoresis. *Biochem Biophys Res Commun* **317**:294-300.
This paper reports the separation and detection of toxin components of the bacillus.
124. **Little, S. F., B. E. Ivins, P. F. Fellows, M. L. Pitt, S. L. Norris, and G. P. Andrews.** 2004. Defining a serological correlate of protection in rabbits for a recombinant anthrax vaccine. *Vaccine* **22**:422-30.
This paper reports the evaluation of a vaccine candidate.
125. **Liu, H., N. H. Bergman, B. Thomason, S. Shallom, A. Hazen, J. Crossno, D. A. Rasko, J. Ravel, T. D. Read, S. N. Peterson, J. Yates, 3rd, and P. C. Hanna.** 2004. Formation and composition of the *Bacillus anthracis* endospore. *J Bacteriol* **186**:164-78.
This paper reports the characterization of the endospore of the bacillus.
126. **Lockwood, N. A., J. R. Haseman, M. V. Tirrell, and K. H. Mayo.** 2004. Acylation of SC4 dodecapeptide increases bactericidal potency against Gram-positive bacteria, including drug-resistant strains. *Biochem J* **378**:93-103.

- This paper reports an antibiotic candidate.
127. **Lyons, C. R., J. Lovchik, J. Hutt, M. F. Lipscomb, E. Wang, S. Heninger, L. Berliba, and K. Garrison.** 2004. Murine model of pulmonary anthrax: kinetics of dissemination, histopathology, and mouse strain susceptibility. *Infect Immun* **72**:4801-9.
This paper reports a mouse model for anthrax.
128. **Mendelson, I., S. Tobery, A. Scorpio, J. Bozue, A. Shafferman, and A. M. Friedlander.** 2004. The NheA component of the non-hemolytic enterotoxin of *Bacillus cereus* is produced by *Bacillus anthracis* but is not required for virulence. *Microb Pathog* **37**:149-54.
This paper reports the production of a toxin compound by the bacillus.
129. **Park, J. M., V. H. Ng, S. Maeda, R. F. Rest, and M. Karin.** 2004. Anthrolysin O and other gram-positive cytolysins are toll-like receptor 4 agonists. *J Exp Med* **200**:1647-55.
This paper reports the identification of a toxin of the bacillus as an agonist of the innate immune system.
130. **Pearson, T., J. D. Busch, J. Ravel, T. D. Read, S. D. Rhoton, J. M. U'Ren, T. S. Simonson, S. M. Kachur, R. R. Leadem, M. L. Cardon, M. N. Van Ert, L. Y. Huynh, C. M. Fraser, and P. Keim.** 2004. Phylogenetic discovery bias in *Bacillus anthracis* using single-nucleotide polymorphisms from whole-genome sequencing. *Proc Natl Acad Sci U S A* **101**:13536-41.
This paper reports problems with the differentiation of strains of the bacillus.
131. **Pickering, A. K., and T. J. Merkel.** 2004. Macrophages release tumor necrosis factor alpha and interleukin-12 in response to intracellular *Bacillus anthracis* spores. *Infect Immun* **72**:3069-72.
This paper reports the release of cytokines by macrophages infected with the bacillus.
132. **Pickering, A. K., M. Osorio, G. M. Lee, V. K. Grippe, M. Bray, and T. J. Merkel.** 2004. Cytokine response to infection with *Bacillus anthracis* spores. *Infect Immun* **72**:6382-9.
This paper reports the cytokine response to infection with the bacillus.
133. **Pombo, M., I. Berthold, E. Gingrich, M. Jaramillo, M. Leef, L. Sirota, H. Hsu, and J. Arciniega.** 2004. Validation of an anti-PA-ELISA for the potency testing of anthrax vaccine in mice. *Biologicals* **32**:157-63.
This paper reports the development of a diagnostic system.
134. **Pomerantsev, A. P., O. M. Pomerantseva, and S. H. Leppla.** 2004. A spontaneous translational fusion of *Bacillus cereus* PlcR and PapR activates transcription of PlcR-dependent genes in *Bacillus anthracis* via binding with a specific palindromic sequence. *Infect Immun* **72**:5814-23.
This paper reports the functionality of a protein from a microbe related to the bacillus.
135. **Popov, S. G., T. G. Popova, E. Grene, F. Klotz, J. Cardwell, C. Bradburne, Y. Jama, M. Maland, J. Wells, A. Nalca, T. Voss, C. Bailey, and K. Alibek.** 2004. Systemic cytokine response in murine anthrax. *Cell Microbiol* **6**:225-33.
This paper reports the cytokine response in mice infected with the bacillus.
136. **Priest, F. G., M. Barker, L. W. Baillie, E. C. Holmes, and M. C. Maiden.** 2004. Population structure and evolution of the *Bacillus cereus* group. *J Bacteriol* **186**:7959-70.
This paper reports the phylogenetic relationships of the bacillus.

137. **Redmond, C., L. W. Baillie, S. Hibbs, A. J. Moir, and A. Moir.** 2004. Identification of proteins in the exosporium of *Bacillus anthracis*. *Microbiology* **150**:355-63.
This paper reports the identification of novel proteins in the spores of the bacillus.
138. **Robart, A. R., N. K. Montgomery, K. L. Smith, and S. Zimmerly.** 2004. Principles of 3' splice site selection and alternative splicing for an unusual group II intron from *Bacillus anthracis*. *Rna* **10**:854-62.
This paper reports specifics of the DNA splicing processes of the bacillus.
139. **Rose, L., B. Jensen, A. Peterson, S. N. Banerjee, and M. J. Srduno.** 2004. Swab materials and *Bacillus anthracis* spore recovery from nonporous surfaces. *Emerg Infect Dis* **10**:1023-9.
This paper reports an isolation method for spores of the bacillus.
140. **Ruthel, G., W. J. Ribot, S. Bavari, and T. A. Hoover.** 2004. Time-lapse confocal imaging of development of *Bacillus anthracis* in macrophages. *J Infect Dis* **189**:1313-6.
This paper reports characteristics of the development of the bacillus within macrophages.
141. **Snyder, A. P., J. P. Dworzanski, A. Tripathi, W. M. Maswadeh, and C. H. Wick.** 2004. Correlation of mass spectrometry identified bacterial biomarkers from a fielded pyrolysis-gas chromatography-ion mobility spectrometry biodetector with the microbiological gram stain classification scheme. *Anal Chem* **76**:6492-9.
This paper reports a detection method.
142. **Tims, T. B., and D. V. Lim.** 2004. Rapid detection of *Bacillus anthracis* spores directly from powders with an evanescent wave fiber-optic biosensor. *J Microbiol Methods* **59**:127-30.
This paper reports a detection method.
143. **Tinsley, E., A. Naqvi, A. Bourgogne, T. M. Koehler, and S. A. Khan.** 2004. Isolation of a minireplicon of the virulence plasmid pXO2 of *Bacillus anthracis* and characterization of the plasmid-encoded RepS replication protein. *J Bacteriol* **186**:2717-23.
This paper reports the isolation of a plasmid of the bacillus and the characterization of a protein that is involved in its replication.
144. **Turnbull, P. C., N. M. Sirianni, C. I. LeBron, M. N. Samaan, F. N. Sutton, A. E. Reyes, and L. F. Peruski, Jr.** 2004. MICs of selected antibiotics for *Bacillus anthracis*, *Bacillus cereus*, *Bacillus thuringiensis*, and *Bacillus mycoides* from a range of clinical and environmental sources as determined by the Etest. *J Clin Microbiol* **42**:3626-34.
This paper reports the antibiotic susceptibility of the bacillus.
145. **Turnbull, P. C., B. W. Tindall, J. D. Coetzee, C. M. Conradie, R. L. Bull, P. M. Lindeque, and O. J. Huebschle.** 2004. Vaccine-induced protection against anthrax in cheetah (*Acinonyx jubatus*) and black rhinoceros (*Diceros bicornis*). *Vaccine* **22**:3340-7.
This paper reports the evaluation of a vaccine candidate.
146. **Ulrich, R. L.** 2004. Quorum quenching: enzymatic disruption of N-acylhomoserine lactone-mediated bacterial communication in *Burkholderia thailandensis*. *Appl Environ Microbiol* **70**:6173-80.
This paper reports on communication between bacteria, including the bacillus.
147. **Van Ert, M. N., S. A. Hofstadler, Y. Jiang, J. D. Busch, D. M. Wagner, J. J. Drader, D. J. Ecker, J. C. Hannis, L. Y. Huynh, J. M. Schupp, T. S. Simonson, and P. Keim.**

2004. Mass spectrometry provides accurate characterization of two genetic marker types in *Bacillus anthracis*. *Biotechniques* **37**:642-4, 646, 648 passim.
This paper reports a potential detection method.
148. **Varma-Basil, M., H. El-Hajj, S. A. Marras, M. H. Hazbon, J. M. Mann, N. D. Connell, F. R. Kramer, and D. Alland.** 2004. Molecular beacons for multiplex detection of four bacterial bioterrorism agents. *Clin Chem* **50**:1060-2.
This paper reports a potential detection method.
149. **Volokhov, D., A. Pomerantsev, V. Kivovich, A. Rasooly, and V. Chizhikov.** 2004. Identification of *Bacillus anthracis* by multiprobe microarray hybridization. *Diagn Microbiol Infect Dis* **49**:163-71.
This paper reports a potential detection method.
150. **Waller, L. N., N. Fox, K. F. Fox, A. Fox, and R. L. Price.** 2004. Ruthenium red staining for ultrastructural visualization of a glycoprotein layer surrounding the spore of *Bacillus anthracis* and *Bacillus subtilis*. *J Microbiol Methods* **58**:23-30.
This paper reports a method to visualize spores of the bacillus.
151. **Wang, T. T., P. F. Fellows, T. J. Leighton, and A. H. Lucas.** 2004. Induction of opsonic antibodies to the gamma-D-glutamic acid capsule of *Bacillus anthracis* by immunization with a synthetic peptide-carrier protein conjugate. *FEMS Immunol Med Microbiol* **40**:231-7.
This paper reports a vaccine candidate.
152. **Wang, T. T., and A. H. Lucas.** 2004. The capsule of *Bacillus anthracis* behaves as a thymus-independent type 2 antigen. *Infect Immun* **72**:5460-3.
This paper reports a vaccine candidate.
153. **Warscheid, B., and C. Fenselau.** 2004. A targeted proteomics approach to the rapid identification of bacterial cell mixtures by matrix-assisted laser desorption/ionization mass spectrometry. *Proteomics* **4**:2877-92.
This paper reports a detection method.
154. **Welkos, S. L., C. K. Cote, K. M. Rea, and P. H. Gibbs.** 2004. A microtiter fluorometric assay to detect the germination of *Bacillus anthracis* spores and the germination inhibitory effects of antibodies. *J Microbiol Methods* **56**:253-65.
This paper reports a detection system for germinating spores of the bacillus.
155. **Williams, D. D., and C. L. Turnbough, Jr.** 2004. Surface layer protein EA1 is not a component of *Bacillus anthracis* spores but is a persistent contaminant in spore preparations. *J Bacteriol* **186**:566-9.
This paper reports a foreign protein inside of spores of the bacillus.
156. **Xu, Y., X. Liang, Y. Chen, T. M. Koehler, and M. Hook.** 2004. Identification and biochemical characterization of two novel collagen binding MSCRAMMs of *Bacillus anthracis*. *J Biol Chem* **279**:51760-8.
This paper reports the characterization of two proteins of the bacillus.
157. **Beuchat, L. R., C. A. Pettigrew, M. E. Tremblay, B. J. Roselle, and A. J. Scouten.** 2004. Lethality of chlorine, chlorine dioxide, and a commercial fruit and vegetable sanitizer to vegetative cells and spores of *Bacillus cereus* and spores of *Bacillus thuringiensis*. *J Food Prot* **67**:1702-8.
This paper reports the bactericidal effect of certain compounds on the bacillus.

158. **Aronson, A. I., C. Bell, and B. Fulroth.** 2005. Plasmid-encoded regulator of extracellular proteases in *Bacillus anthracis*. *J Bacteriol* **187**:3133-8.
This paper reports the identification of a protein of the bacillus that is important for regulating its extracellular proteases.
159. **Baillie, L., S. Hibbs, P. Tsai, G. L. Cao, and G. M. Rosen.** 2005. Role of superoxide in the germination of *Bacillus anthracis* endospores. *FEMS Microbiol Lett* **245**:33-8.
This paper reports the importance of a chemical for the germination of spores of the bacillus.
160. **Bergman, N. H., K. D. Passalacqua, R. Gaspard, L. M. Shetron-Rama, J. Quackenbush, and P. C. Hanna.** 2005. Murine macrophage transcriptional responses to *Bacillus anthracis* infection and intoxication. *Infect Immun* **73**:1069-80.
This paper reports the transcriptional response of macrophages from mice infected with the bacillus.
161. **Beuchat, L. R., C. A. Pettigrew, M. E. Tremblay, B. J. Roselle, and A. J. Scouten.** 2005. Lethality of chlorine, chlorine dioxide, and a commercial fruit and vegetable sanitizer to vegetative cells and spores of *Bacillus cereus* and spores of *Bacillus thuringiensis*. *J Ind Microbiol Biotechnol*. In press.
This paper reports the bactericidal effect of certain compounds on the bacillus.
162. **Bozue, J. A., N. Parthasarathy, L. R. Phillips, C. K. Cote, P. F. Fellows, I. Mendelson, A. Shafferman, and A. M. Friedlander.** 2005. Construction of a rhamnose mutation in *Bacillus anthracis* affects adherence to macrophages but not virulence in guinea pigs. *Microb Pathog* **38**:1-12.
This paper reports the importance of a sugar for the ability of the bacillus to adhere to macrophages.
163. **Brittingham, K. C., G. Ruthel, R. G. Panchal, C. L. Fuller, W. J. Ribot, T. A. Hoover, H. A. Young, A. O. Anderson, and S. Bavari.** 2005. Dendritic cells endocytose *Bacillus anthracis* spores: implications for anthrax pathogenesis. *J Immunol* **174**:5545-52.
This paper reports the involvement of dendritic cells in replication of the bacillus.
164. **Drysdale, M., S. Heninger, J. Hutt, Y. Chen, C. R. Lyons, and T. M. Koehler.** 2005. Capsule synthesis by *Bacillus anthracis* is required for dissemination in murine inhalation anthrax. *Embo J* **24**:221-7.
This paper reports the importance the capsule of the bacillus for dissemination in mice.
165. **Easterday, W. R., M. N. Van Ert, T. S. Simonson, D. M. Wagner, L. J. Kenefic, C. J. Allender, and P. Keim.** 2005. Use of single nucleotide polymorphisms in the *plcR* gene for specific identification of *Bacillus anthracis*. *J Clin Microbiol* **43**:1995-7.
This paper reports a detection method.
166. **Francis, A. W., C. E. Ruggiero, A. T. Koppisch, J. Dong, J. Song, T. Brettin, and S. Iyer.** 2005. Proteomic analysis of *Bacillus anthracis* Sterne vegetative cells. *Biochim Biophys Acta* **1748**:191-200.
This paper reports the proteome of a strain of the bacillus.
167. **Gutting, B. W., K. S. Gaske, A. S. Schilling, A. F. Slaterbeck, L. Sobota, R. S. Mackie, and T. L. Buhr.** 2005. Differential susceptibility of macrophage cell lines to *Bacillus anthracis*-Vollum 1B. *Toxicol In Vitro* **19**:221-9.
This paper reports the susceptibilities of different macrophages to a strain of the bacillus.

168. **Hull, A. K., C. J. Criscuolo, V. Mett, H. Groen, W. Steeman, H. Westra, G. Chapman, B. Legutki, L. Baillie, and V. Yusibov.** 2005. Human-derived, plant-produced monoclonal antibody for the treatment of anthrax. *Vaccine* **23**:2082-6.
This paper reports the development of a treatment.
169. **Jones, M. B., R. Jani, D. Ren, T. K. Wood, and M. J. Blaser.** 2005. Inhibition of *Bacillus anthracis* Growth and Virulence-Gene Expression by Inhibitors of Quorum-Sensing. *J Infect Dis* **191**:1881-8.
This paper reports the discovery of an inhibitor of the bacillus.
170. **Kim, K., J. Seo, K. Wheeler, C. Park, D. Kim, S. Park, W. Kim, S. I. Chung, and T. Leighton.** 2005. Rapid genotypic detection of *Bacillus anthracis* and the *Bacillus cereus* group by multiplex real-time PCR melting curve analysis. *FEMS Immunol Med Microbiol* **43**:301-10.
This paper reports a PCR-based detection method.
171. **Mikszta, J. A., V. J. Sullivan, C. Dean, A. M. Waterston, J. B. Alarcon, J. P. Dekker, 3rd, J. M. Brittingham, J. Huang, C. R. Hwang, M. Ferriter, G. Jiang, K. Mar, K. U. Saikh, B. G. Stiles, C. J. Roy, R. G. Ulrich, and N. G. Harvey.** 2005. Protective immunization against inhalational anthrax: a comparison of minimally invasive delivery platforms. *J Infect Dis* **191**:278-88.
This paper reports the evaluation of a vaccine candidate.
172. **Novak, J. S., J. Call, P. Tomasula, and J. B. Luchansky.** 2005. An assessment of pasteurization treatment of water, media, and milk with respect to *Bacillus* spores. *J Food Prot* **68**:751-7.
This paper reports the evaluation of disinfection methods.
173. **Popov, S. G., T. G. Popova, S. Hopkins, R. S. Weinstein, R. MacAfee, K. J. Fryxell, V. Chandhoke, C. Bailey, and K. Alibek.** 2005. Effective antiprotease-antibiotic treatment of experimental anthrax. *BMC Infect Dis* **5**:25.
This paper reports the evaluation of a treatment regimen.
174. **Popovic, T., A. Hoffmaster, J. W. Ezzell, T. G. Abshire, and J. E. Brown.** 2005. Validation of methods for confirmatory identification of presumptive isolates of *Bacillus anthracis*. *J AOAC Int* **88**:175-7.
This paper reports a comparison of detection methods.
175. **Rose, L. J., E. W. Rice, B. Jensen, R. Murga, A. Peterson, R. M. Donlan, and M. J. Arduino.** 2005. Chlorine inactivation of bacterial bioterrorism agents. *Appl Environ Microbiol* **71**:566-8.
This paper reports a disinfection method.
176. **Shatalin, K. Y., and A. A. Neyfakh.** 2005. Efficient gene inactivation in *Bacillus anthracis*. *FEMS Microbiol Lett* **245**:315-9.
This paper reports a method to inactivate genes of the bacillus.
177. **Vetter, S. M., and P. M. Schlievert.** 2005. Glycerol monolaurate inhibits virulence factor production in *Bacillus anthracis*. *Antimicrob Agents Chemother* **49**:1302-5.
This paper reports the identification of a lipid that prevents virulence factor expression.
178. **Xie, H., I. Gursel, B. E. Ivins, M. Singh, D. T. O'Hagan, J. B. Ulmer, and D. M. Klinman.** 2005. CpG oligodeoxynucleotides adsorbed onto polylactide-co-glycolide

microparticles improve the immunogenicity and protective activity of the licensed anthrax vaccine. *Infect Immun* **73**:828-33.

This paper reports the evaluation of an adjuvant for a vaccine candidate.

NIH Grants:

1	72	1R21AI055643-01	BARROW, WILLIAM	<u>Narrow-Spectrum Drug Targets for <i>Bacillus anthracis</i></u>
Total: \$493,350			<ul style="list-style-type: none"> \$265,650 2004 Barrow, William OKLAHOMA STATE UNIVERSITY STILLWATER STILLWATER, OK \$227,700 2003 Barrow, William OKLAHOMA STATE UNIVERSITY STILLWATER STILLWATER, OK 	
2	72	1R21AI057974-01A1	KHAN, SALEEM	<u>Plasmid pXO2 Replication in <i>Bacillus anthracis</i></u>
Total: \$509,566			<ul style="list-style-type: none"> \$254,708 2005 Khan, Saleem A UNIVERSITY OF PITTSBURGH AT PITTSBURGH PITTSBURGH, PA \$254,858 2004 Khan, Saleem A UNIVERSITY OF PITTSBURGH PITTSBURGH, PA 	
3	62	1R21AI053526-01	COOK, JAMES	<u>Macrophage-Dependent Immunopathogenesis of Anthrax</u>
Total: \$467,610			<ul style="list-style-type: none"> \$233,805 2003 Cook, James L UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$233,805 2002 Cook, James L UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
4	62	1R21AI058002-01	HUANG, CHUN-MING	<u>Anthrax vaccination by targeting spore germination</u>
Total: \$289,083			<ul style="list-style-type: none"> \$289,083 2004 Huang, Chunming UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
5	62	1Z01BJ003011-01	MERKEL, TOD	<u>Identification and regulation of virulence factors of B.</u>
6	62	1Z01BJ003011-02	MERKEL, TOD	<u>Identification and regulation of virulence factors of B.</u>
7	52	1R01AI048505-01	ARONSON, ARTHUR	<u>STRATEGIES FOR INACTIVATING BACILLUS ANTHRACIS SPORES</u>
Total: \$856,622			<ul style="list-style-type: none"> \$218,750 2003 Aronson, Arthur I PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$191,500 2002 Aronson, Arthur I PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$217,750 2001 Aronson, Arthur I. PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$228,622 2000 ARONSON, ARTHUR I PURDUE UNIVERSITY WEST 	

			LAFAYETTE WEST LAFAYETTE, IN	
8	52	1U01AI056477-01	BROUILLETTE, WAYNE	<u>A Novel Target for New Anti-Anthrax Drugs</u>
Total: \$906,250			<ul style="list-style-type: none"> • \$362,500 2005 Brouillette, Wayne J UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL • \$362,500 2004 Brouillette, Wayne J UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL • \$181,250 2003 Brouillette, Wayne J UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
9	52	1R21AI053548-01A1	ELLINGTON, ANDREW	<u>Auto Selection of aptamers binding to pX01 proteome</u>
Total: \$415,000			<ul style="list-style-type: none"> • \$207,500 2004 Ellington, Andrew D UNIVERSITY OF TEXAS AUSTIN AUSTIN, TX • \$207,500 2003 Ellington, Andrew D UNIVERSITY OF TEXAS AUSTIN AUSTIN, TX 	
10	52	1U54AI057153-010001	JOACHIMIAK, ANDRZEJ	<u>Therapeutic Inhibition of B. Anthracis Pathogenesis</u>
Total: \$20,734,800 *			<ul style="list-style-type: none"> • \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 	
11	52	2R01AI033537-11	KOEHLER, THERESA	<u>Virulence Gene Expression by Bacillus anthracis</u>
Total: \$1,164,714			<ul style="list-style-type: none"> • \$257,246 2005 Koehler, Theresa M UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX • \$282,323 2004 Koehler, Theresa M UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX • \$201,330 2002 Koehler, Theresa M UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX • \$17,074 2001 Koehler, Theresa M. UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX • \$195,467 2001 Koehler, Theresa M. UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX • \$211,274 2000 KOEHLER, THERESA M UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX 	
12	51	1R21AI053317-01	KRULWICH, TERRY	<u>Bacillus anthracis Spores: Initiation of Germination</u>
Total: \$364,000			<ul style="list-style-type: none"> • \$169,500 2003 Krulwich, Terry A MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY • \$194,500 2002 Krulwich, Terry A MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	

13	51	1R43AI056520-01	TRAWICK, JOHN	<u>A novel platform to discover biodefense therapeutics</u>
Total: \$331,141			<ul style="list-style-type: none"> \$331,141 2003 Trawick, John D ELITRA PHARMACEUTICALS, INC. SAN DIEGO, CA 	
14	41	1Z01BJ003016-01	BURNS, DRUSILLA	<u>Pathogenesis of Bordetella pertussis and Bacillus anthra</u>
15	41	1R01AI057472-01	FISCHETTI, VINCENT	<u>Isolaton of new phage enzymes to kill B. anthracis</u>
Total: \$759,282			<ul style="list-style-type: none"> \$380,157 2005 Fischetti, Vincent A ROCKEFELLER UNIVERSITY NEW YORK, NY \$379,125 2004 Fischetti, Vincent A ROCKEFELLER UNIVERSITY NEW YORK, NY 	
16	41	1R43AI052587-01	GOLDMAN, MARK	<u>Inhibitors of Anthrax Lethal Factor Metalloproteinase</u>
Total: \$295,510			<ul style="list-style-type: none"> \$295,510 2002 Goldman, Mark E HAWAII BIOTECH, INC. AIEA, HI 	
17	41	1R01AI055860-01	HOCH, JAMES	<u>Signal Transduction Networks in Bacillus anthracis</u>
Total: \$1,278,384			<ul style="list-style-type: none"> \$523,462 2005 Hoch, James A SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$508,215 2004 Hoch, James A SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$246,707 2003 Hoch, James A SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA 	
18	41	1U54AI057156-010001	KOEHLER, THERESA	<u>Bacillus Anthracis - Host Interactions</u>
Total: \$27,834,107 *			<ul style="list-style-type: none"> \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
19	41	1R21AI061702-01	LARNER, ANDREW	<u>The Effects of Interferons on Anthrax Toxicity</u>
Total: \$153,000			<ul style="list-style-type: none"> \$153,000 2004 Larner, Andrew C CLEVELAND CLINIC LERNER COL/MED-CWRU CLEVELAND, OH 	
20	41	1Z01BJ003017-01	MERKEL, TOD	<u>Pathogenic Mechanisms of Bacterial Respiratory Pathogens</u>
21	41	1Z01BP005026-01	NAKHASI, HIRA	<u>Molecular Mechanism and Diagnosis of Leishmaniasis</u>

22	41	1U01AI056443-01	RAO, VENIGALLA	<u>A Multicomponent Anthrax Vaccine using Phage T4 Display</u>
Total: \$1,678,602			<ul style="list-style-type: none"> \$695,043 2005 Rao, Venigalla B CATHOLIC UNIVERSITY OF AMERICA WASHINGTON, DC \$666,736 2004 Rao, Venigalla B CATHOLIC UNIVERSITY OF AMERICA WASHINGTON, DC \$316,823 2003 Rao, Venigalla B CATHOLIC UNIVERSITY OF AMERICA WASHINGTON, DC 	
23	41	2R44AI045237-02A1	RIDEOUT, DARRYL	<u>Non-Peptides Inhibitors of Anthrax Lethal Factor</u>
Total: \$754,259			<ul style="list-style-type: none"> \$383,032 2003 Rideout, Darryl C CEMENT THERAPEUTICS, INC. SAN DIEGO, CA \$371,227 2002 Rideout, Darryl C STRUCTURAL BIOINFORMATICS, INC. SAN DIEGO, CA 	
24	41	1Z01BJ005018-01	STIBITZ, E.	<u>Molecular Genetics and Regulation of Bacterial Pathogens</u>
25	41	1Z01BJ004013-01	VANN, WILLIE	<u>Glycobiology of Bacterial Pathogens</u>
26	38	1R21AI056275-01	GOLDFINE, HOWARD	<u>Escape of Bacillus anthracis from the phagosome</u>
Total: \$475,500			<ul style="list-style-type: none"> \$237,750 2004 Goldfine, Howard UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA \$237,750 2003 Goldfine, Howard UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA 	
27	38	1R03AI059117-01	HALDENWANG, WILLIAM	<u>Optimization of Mariner Transposon for Bacillus</u>
Total: \$146,000			<ul style="list-style-type: none"> \$73,000 2005 Haldenwang, William G UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX \$73,000 2004 Haldenwang, William G UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX 	
28	38	2R44AI055079-02	LEMIEUX, BERTRAND	<u>A Hand-Held System for Live Anthrax Spore Detection</u>
Total: \$1,999,861			<ul style="list-style-type: none"> \$792,489 2005 Lemieux, Bertrand IQUUM, INC. ALLSTON, MA \$1,207,372 2004 Lemieux, Bertrand IQUUM, INC. ALLSTON, MA 	
29	38	1R43ES012993-01	NAKHAI, BITA	<u>Novel Devices for Processing Bioterrorism Agents</u>
Total: \$149,976			<ul style="list-style-type: none"> \$149,976 2004 Nakhai, Bitu SERACARE LIFE SCIENCES, INC. OCEANSIDE, MD 	
30	38	1Z01HD001301-	SCHNEERSON,	<u>Human Immune Response To</u>

		22	RACHEL	<u>Polysaccharide-protein Conjugat</u>
31	38	2R44AI052926-02	STORHOFF, JAMES	<u>Nanoparticle Probe Assay for Biological Threat Agents</u>
Total: \$374,900			<ul style="list-style-type: none"> \$374,900 2004 Storhoff, James J NANOSPHERE, INC. NORTHBROOK, IL 	
32	31	1R21EB000982-01	BASHIR, RASHID	<u>Rapid Determination of Viability of Anthrax Spores</u>
Total: \$450,000			<ul style="list-style-type: none"> \$225,000 2003 Bashir, Rashid PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$225,000 2002 Bashir, Rashid PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN 	
33	31	1P01CI000095-01	BOKOCH, GARY	<u>Regulation of the Innate Immune Response to B Anthracis</u>
34	31	1U19AI056575-010004	CAFFREY, MICHAEL	<u>Development of Inhibitors for B. anthracis Protective Antigen</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
35	31	1R21AI056061-01	CARLSON, RUSSELL	<u>Bacillus anthracis cell surface carbohydrates</u>
Total: \$588,800			<ul style="list-style-type: none"> \$294,400 2004 Carlson, Russell W UNIVERSITY OF GEORGIA ATHENS, GA \$294,400 2003 Carlson, Russell W UNIVERSITY OF GEORGIA ATHENS, GA 	
36	31	1U54AI057158-010001	CASADEVALL, ARTURO	<u>B cell related prophylaxis and therapeutics</u>
Total: \$21,685,329 *			<ul style="list-style-type: none"> \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY 	
37	31	1U19AI056575-010005	COOK, JAMES	<u>Therapeutics for the Anthrax-Macrophage Shock Syndrome</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT 	

			CHICAGO CHICAGO, IL	
38	31	1R43AI052499-01	DEAN, DAVID	<u>Development of a device for rapid detection of anthrax</u>
Total: \$160,042			<ul style="list-style-type: none"> \$160,042 2002 Dean, David A TETRACORE, INC. GAITHERSBURG, MD 	
39	31	1R21AI053365-01	DRIKS, ADAM	<u>IDENTIFICATION OF B. ANTRACIS SPORE-SURFACE PROTEINS</u>
Total: \$222,000			<ul style="list-style-type: none"> \$222,000 2002 Driks, Adam LOYOLA UNIVERSITY MEDICAL CENTER MAYWOOD, IL 	
40	31	1Z01BP005021-01	DUNCAN, ROBERT	<u>Pathogen Chip for Detection of Bioterrorism Agents in BI</u>
41	31	1U54AI057157-010005	HANNA, PHILIP	<u>Control of Bacillus Anthracis Spore Formation</u>
Total: \$24,284,241 *			<ul style="list-style-type: none"> \$10,247,734 2005 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$9,829,455 2004 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$4,207,052 2003 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC 	
42	31	1R43AI052886-01	HILFINGER, JOHN	<u>Development of an Oral Anthrax Vaccine</u>
Total: \$203,609			<ul style="list-style-type: none"> \$203,609 2002 Hilfinger, John M TSRL, INC. ANN ARBOR, MI 	
43	31	1R21AI058051-01A2	HUANG, ZHEN	<u>Bacillus anthracis Detection with RNA Microchip</u>
44	31	1U19AI056575-01	JOHNSON, MICHAEL	<u>Novel Therapeutics for Bacillus anthracis</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
45	31	1U19AI056575-010003	JOHNSON, MICHAEL	<u>Structure-Based Design of Novel B. anthracis Therapeutic Agents</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	

46	31	1R21AI057781-01	KAPLAN, GILLA	<u>Cytokines in Pathogenesis of Anthrax Infection</u>
Total: \$466,800			<ul style="list-style-type: none"> \$233,400 2005 Kaplan, Gilla PUBLIC HEALTH RESEARCH INSTITUTE NEWARK, NJ \$233,400 2004 Kaplan, Gilla PUBLIC HEALTH RESEARCH INSTITUTE NEWARK, NJ 	
47	31	1P01AI057699-01A1	KEARNEY, JOHN	<u>Immunity to Bacillus anthracis: Spore-Host Interactions</u>
Total: \$1,018,127			<ul style="list-style-type: none"> \$1,018,127 2004 Kearney, John F UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
48	31	1R01GM060795-01	KEIM, PAUL	<u>ANTHRAX MOLECULAR EVOLUTION, DIVERSITY AND EPIDEMIOLOGY</u>
Total: \$1,141,231			<ul style="list-style-type: none"> \$290,343 2003 Keim, Paul S NORTHERN ARIZONA UNIVERSITY FLAGSTAFF, AZ \$284,723 2002 Keim, Paul S NORTHERN ARIZONA UNIVERSITY FLAGSTAFF, AZ \$282,924 2001 Keim, Paul S NORTHERN ARIZONA UNIVERSITY FLAGSTAFF, AZ \$283,241 2000 KEIM, PAUL S Department Name Project Title, Major Component, AZ 	
49	31	1U01AI053860-01	KOKAI-KUN, JOHN	<u>Nisin-based topical formulation for treatment of anthrax</u>
Total: \$796,091			<ul style="list-style-type: none"> \$388,596 2003 Kokaikun, John F BIOSYNEXUS, INC. GAITHERSBURG, MD \$407,495 2002 Kokai-Kun, John F BIOSYNEXUS, INC. GAITHERSBURG, MD 	
50	31	1Z01AI000929-02	LEPPLA, STEPHEN	<u>Targeted Cytotoxic Proteins Derived From Bacterial Toxin</u>
51	31	1P01AI056295-01A1	LYONS, C.	<u>Pulmonary responses to Bioweapon Category A Pathogens</u>
Total: \$1,890,737			<ul style="list-style-type: none"> \$1,890,737 2005 Lyons, C Rick UNIVERSITY OF NEW MEXICO ALBUQUERQUE ALBUQUERQUE, NM 	
52	31	1K01OH008029-01A1	MAINELIS, GEDIMINAS	<u>Evaluation of Portable Samplers for Viable Bioaerosols</u>
53	31	2R44AI052587-02	MCCLELLAND, ALAN	<u>Inhibitors of Anthrax Lethal Factor Metalloproteinase</u>
Total: \$3,951,250			<ul style="list-style-type: none"> \$1,953,830 2005 Mcclelland, Alan HAWAII BIOTECH, INC. AIEA, HI \$1,997,420 2004 Goldman, Mark E HAWAII BIOTECH, INC. AIEA, HI 	

54	31	1U54AI057153-010008	MISSIAKAS, DOMINIQUE	<u>Genetic Analysis of Bacillus Anthracis Secretary Pathway</u>
Total: \$20,734,800 *			<ul style="list-style-type: none"> \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 	
55	31	1U19AI056575-010002	NEYFAKH, ALEX	<u>Genetic Identification of Drug Targets in B. anthracis</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
56	31	1R43AI052936-01	PADHYE, NISHA	<u>Rapid PCR of Bacillus anthracis DNA</u>
Total: \$98,330			<ul style="list-style-type: none"> \$98,330 2002 Padhye, Nisha V MEGABASE RESEARCH PRODUCTS LINCOLN, NE 	
57	31	1R21AI053442-01A1	RYAN, EDWARD	<u>Application of IVIAT to Bacillus anthracis</u>
Total: \$616,810			<ul style="list-style-type: none"> \$343,810 2004 Ryan, Edward T MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA \$273,000 2003 Ryan, Edward T MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA 	
58	31	1U56AI057164-010001	SCHLIEVERT, PATRICK	<u>Role of BrrA-BrrB in Anthrax</u>
Total: \$1,354,051 *			<ul style="list-style-type: none"> \$670,963 2004 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN \$683,088 2003 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN 	
59	31	1Z01BJ004007-02	SCHMITT, MICHAEL	<u>Characterization of iron regulon in Bacillus anthracis</u>
60	31	1Z01DK015500-42	SHILOACH, JOSEPH	<u>Large-scale Production & Purification Of Compounds</u>
61	31	1Z01DK015500-43	SHILOACH, JOSEPH	<u>Large-scale Production & Purification Of Compounds With</u>
62	31	1R21AI053359-01A1	STEINHAUER, DAVID	<u>Novel Vaccines for Anthrax Prevention</u>

Total: \$608,000			<ul style="list-style-type: none"> \$304,000 2004 Steinhauer, David A EMORY UNIVERSITY ATLANTA, GA \$304,000 2003 Steinhauer, David A EMORY UNIVERSITY ATLANTA, GA 	
63	31	1Z01MH002585-13	STERNBERG, ESTHER	<u>Role Of Neuroendocrine Stress Response In Inflammatory A</u>
64	31	1Z01MH002585-14	STERNBERG, ESTHER	<u>Neuroendocrine Stress Response in Inflammatory/Behavior</u>
65	31	1R41AI061901-01	TUROS, EDWARD	<u>A Mechanistically Novel Antibiotic for Anthrax</u>
Total: \$99,750			<ul style="list-style-type: none"> \$99,750 2004 Turos, Edward NANOPHARMA TECHNOLOGIES, INC. TAMPA, FL 	
66	31	1Z01BJ004006-01	VANN, WILLIE	<u>Biosynthesis of polysaccharides in Bacillus anthracis</u>
67	31	1Z01BJ004006-02	VANN, WILLIE	<u>Biosynthesis of polysaccharides in Bacillus anthracis</u>
68	31	1R01AI055556-01	WARD, E	<u>Antibody engineering: targeting Bacillus anthracis</u>
Total: \$819,000			<ul style="list-style-type: none"> \$351,000 2005 Ward, E Sally UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$351,000 2004 Ward, E Sally UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$117,000 2003 Ward, E Sally UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
69	31	1R41AI052522-01	WEINSTOCK, GEORGE	<u>Bacillus anthracis clone set</u>
Total: \$99,510			<ul style="list-style-type: none"> \$99,510 2002 Weinstock, George M SEQWRIGHT, LLC HOUSTON, TX 	
70	31	1R21AI061555-01	XU, YI	<u>Cell wall protein in Bacillus anthracis pathogenesis</u>
Total: \$181,875			<ul style="list-style-type: none"> \$181,875 2004 Xu, Yi TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX 	
71	31	1R43AI053009-01	YOUNGMAN, PHILIP	<u>Target and antibiotic discovery in Bacillus anthracis</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2002 Youngman, Philip J ELITRA PHARMACEUTICALS, INC. SAN DIEGO, CA 	
72	31	1R21AI053554-01A1	ZHOU, DAOGUO	<u>Germination of Bacillus anthracis Spores in Macrophages</u>
Total: \$450,000			<ul style="list-style-type: none"> \$225,000 2004 Zhou, Daoguo PURDUE UNIVERSITY WEST LAFAYETTE 	

			WEST LAFAYETTE, IN <ul style="list-style-type: none"> \$225,000 2003 Zhou, Daoguo PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN
73	26	1R21AI059798-01	NEPOM, GERALD <u>MHC tetramers for epitopes of B anthracis PA</u>
Total: \$702,000			<ul style="list-style-type: none"> \$351,000 2005 Nepom, Gerald T BENAROYA RESEARCH INST AT VIRGINIA MASON SEATTLE, WA \$351,000 2004 Nepom, Gerald T BENAROYA RESEARCH INST AT VIRGINIA MASON SEATTLE, WA
74	26	1Z01HD001301-21	SCHNEERSON, RACHEL <u>Human Immune Response To Polysaccharide-protein Conjugat</u>
75	26	1U19AI056543-010003	SHAPIRO, DANIEL <u>Diagnostics</u>
Total: \$6,264,376			<ul style="list-style-type: none"> \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA
76	26	1R01AI057926-01A1	WANG, JULIA <u>Dually Active Anthrax Vaccine Against Bacilli and Toxins</u>
Total: \$821,200			<ul style="list-style-type: none"> \$412,425 2005 Wang, Julia Y BRIGHAM AND WOMEN'S HOSPITAL BOSTON, MA \$408,775 2004 Wang, Julia Y BRIGHAM AND WOMEN'S HOSPITAL BOSTON, MA
77	26	1F32GM070400-01	WILLBY, MELISA <u>Germination of Bacillus subtilis spores</u>
Total: \$91,272			<ul style="list-style-type: none"> \$48,296 2005 Willby, Melisa J EMORY UNIVERSITY ATLANTA, GA \$42,976 2004 Willby, Melisa J EMORY UNIVERSITY ATLANTA, GA
78	21	1R43AI052905-01A1	AFONINA, IRINA <u>MGB Eclipse Probe Detection of Category A Organisms</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2003 Afonina, Irina A EPOCH BIOSCIENCES, INC. BOTHELL, WA
79	21	1R21HD044861-01	BALLARD, JIMMY <u>Impact of Anthrax Toxin on Embryonic Development</u>
Total: \$581,559			<ul style="list-style-type: none"> \$290,954 2004 Ballard, Jimmy D UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK \$290,605 2003 Ballard, Jimmy D UNIVERSITY OF OKLAHOMA NORMAN NORMAN, OK

80	21	1R21AI053407-01A1	BOHM, A	<u>Molecular Basis for Inhibition of Edema Factor</u>
Total: \$430,894			<ul style="list-style-type: none"> \$208,500 2005 Bohm, A Andrew TUFTS UNIVERSITY BOSTON BOSTON, MA \$222,394 2004 Bohm, A Andrew TUFTS UNIVERSITY BOSTON BOSTON, MA 	
81	21	2R01AI043197-06	BOYAKA, PROSPER	<u>MOLECULAR ADJUVANTS FOR NALT-BASED IMMUNITY TO ANTHRAX</u>
Total: \$2,062,631			<ul style="list-style-type: none"> \$362,500 2005 Boyaka, Prosper N UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$362,500 2004 Boyaka, Prosper N UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$362,500 2003 Mcghee, Jerry R UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$333,549 2002 Mcghee, Jerry R UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$324,960 2001 Mcghee, Jerry R UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$316,622 2000 MCGHEE, JERRY R UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
82	21	1R01AI057870-01	BRADLEY, KENNETH	<u>CHARACTERIZATION OF ANTHRAX TOXIN RECEPTOR INTERACTIONS</u>
Total: \$682,140			<ul style="list-style-type: none"> \$342,156 2005 Bradley, Kenneth Alan UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA \$339,984 2004 Bradley, Kenneth Alan UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
83	21	1R43AI053048-01	BROWN, MARK	<u>Antibiotic Screen for Isoprenoid Pathway in B.anthraxis</u>
Total: \$98,560			<ul style="list-style-type: none"> \$98,560 2002 Brown, Mark J ECHELON BIOSCIENCES, INC. SALT LAKE CITY, UT 	
84	21	1R43AI058423-01	BRUNO, JOHN	<u>Nuclease-Resistant Aptamers for Anthrax Opsonization</u>
Total: \$99,934			<ul style="list-style-type: none"> \$99,934 2004 Bruno, John G OPERATIONAL TECHNOLOGIES CORPORATION SAN ANTONIO, TX 	
85	21	1Z01BJ003014-01	BURNS, DRUSILLA	<u>PATHOGENESIS OF B ANTHRACIS AND PROTECTIVE IMMUNITY</u>
86	21	1Z01BJ003014-02	BURNS, DRUSILLA	<u>Studies on the Pathogenesis of B. anthracis and Protecti</u>
87	21	1Z01BJ003014-03	BURNS, DRUSILLA	<u>Studies on the Pathogenesis of B. anthracis and Protecti</u>

88	21	1R21AI056134-01	CHAN, JOANNE	<u>Attacking anthrax action by blocking receptor signaling</u>
Total: \$677,965			<ul style="list-style-type: none"> \$342,000 2004 Chan, Joanne DANA-FARBER CANCER INSTITUTE BOSTON, MA \$335,965 2003 Chan, Joanne DANA-FARBER CANCER INSTITUTE BOSTON, MA 	
89	21	1R43AI052909-01	CHAPPLE, JOANNE	<u>Inhibitors of Bacterial Undecaprenyl Diphosphate Synthase</u>
Total: \$258,814			<ul style="list-style-type: none"> \$258,814 2002 Chapple, Joanne P CUBIST PHARMACEUTICALS, INC. LEXINGTON, MA 	
90	21	1Z01BO002008-01	CLOUSE-STREBEL, K.	<u>Identifying biological agents that counteract the effect</u>
91	21	1U54AI057159-010001	COLLIER, R.	<u>Direct Inhibition of Anthrax Toxin Action</u>
Total: \$26,169,985 *			<ul style="list-style-type: none"> \$10,173,756 2005 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$11,843,830 2004 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$4,152,399 2003 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA 	
92	21	1R01AI056047-01	COLLINS, GREG	<u>Sensitive Diagnosis of Biowarfare Agents on a Microchip</u>
Total: \$1,154,639			<ul style="list-style-type: none"> \$456,719 2005 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC \$455,617 2004 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC \$242,303 2003 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC 	
93	21	1U54AI057158-010002	CRYSTAL, RONALD	<u>Vaccine Platforms</u>
Total: \$21,685,329 *			<ul style="list-style-type: none"> \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY 	
94	21	1R21EB000980-01	DALY, DON	<u>Microbial Fingerprinting Chip and Automated Analysis</u>
Total: \$526,794			<ul style="list-style-type: none"> \$262,537 2003 Daly, Don S BATTELLE PACIFIC NORTHWEST LABORATORIES RICHLAND, WA \$264,257 2002 Wunschel, Sharon C BATTELLE PACIFIC NORTHWEST 	

			LABORATORIES RICHLAND, WA	
95	21	2R01AI043321-06	DIETRICH, WILLIAM	<u>Genetic Analysis of Lethal Factor Sensitivity</u>
Total: \$1,330,769			<ul style="list-style-type: none"> • \$423,750 2005 Dietrich, William F HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA • \$211,719 2004 Dietrich, William F HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA • \$210,000 2003 Dietrich, William F HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA • \$166,348 2002 Dietrich, William F HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA • \$161,723 2001 Dietrich, William F HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA • \$157,229 2000 DIETRICH, WILLIAM F RAZZAQUE A OCULAR PEMPHIGOID--MECHANISM OF PATHOGENESIS 5 R01EY008379-11 AHMED, MA 	
96	21	1U01AI057315-01	DRMANAC, RADOJE	<u>Comprehensive pathogen diagnostics with rSBH system</u>
Total: \$2,305,894			<ul style="list-style-type: none"> • \$725,838 2005 Drmanac, Radoje CALLIDA GENOMICS, INC. SUNNYVALE, CA • \$903,169 2004 Drmanac, Radoje CALLIDA GENOMICS, INC. SUNNYVALE, CA • \$676,887 2003 Drmanac, Radoje CALLIDA GENOMICS SUNNYVALE, CA 	
97	21	1P01AI060908-01A1	DRUSANO, GEORGE	<u>Choosing Drug Doses for Biodefence Pathogens</u>
98	21	1Z01CL008066-01	EICHACKER, PETER	<u>Fluid Treatment in B. Anthracis Lethal Toxin Rat Model</u>
99	21	1Z01CL008067-01	EICHACKER, PETER	<u>PA-mAb in a Rat Model of Anthrax Sepsis</u>
100	21	1R21AI056161-01	FLAJNIK, MARTIN	<u>Highly Stable, Anthrax-specific Shark Antibody Fragment</u>
Total: \$538,481			<ul style="list-style-type: none"> • \$263,178 2004 Flajnik, Martin F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$275,303 2003 Flajnik, Martin F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
101	21	1R21AI053578-01A1	FREYTAG, LUCY	<u>NOVEL IMMUNIZATION STRATEGIES AGAINST ANTHRAX</u>
Total: \$594,000			<ul style="list-style-type: none"> • \$297,000 2004 Freytag, Lucy C TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA • \$297,000 2003 Freytag, Lucia C TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	

102	21	1R43AI053115-01	FUJII, GARY	<u>Rapid Vaccine Development System</u>
Total: \$131,960			<ul style="list-style-type: none"> \$131,960 2002 Fujii, Gary MOLECULAR EXPRESS, INC. LOS ANGELES, CA 	
103	21	1R43AI055120-01	GULNIK, SERGEI	<u>Broadly active inhibitors of high priority pathogens</u>
Total: \$802,627			<ul style="list-style-type: none"> \$310,030 2004 Gulnik, Sergei SEQUOIA PHARMACEUTICALS, INC. GAITHERSBURG, MD \$492,597 2003 Gulnik, Sergei SEQUOIA PHARMACEUTICALS, INC. GAITHERSBURG, MD 	
104	21	1P01AI056293-010001	HACKETT, NEIL	<u>INTERACTION OF ALVEOLAR MACROPHAGE WITH ANTHRAX TOXIN</u>
Total: \$3,474,964			<ul style="list-style-type: none"> \$1,388,080 2005 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$1,344,411 2004 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$742,473 2003 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
105	21	1R01AI045740-01A1	HANNA, PHILIP	<u>EARLY ESTABLISHMENT STAGES OF ANTHRAX INFECTION</u>
Total: \$1,096,196			<ul style="list-style-type: none"> \$222,897 2004 Hanna, Philip C UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$222,897 2003 Hanna, Philip C UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$13,000 2002 Hanna, Philip C UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$189,463 2002 Hanna, Philip C UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$223,612 2001 Hanna, Philip C UNIVERSITY OF MICHIGAN ANN ARBOR, MI \$224,327 2000 HANNA, PHILIP C UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI 	
106	21	1U01AI054374-01	HENRICKSON, KELLY	<u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u>
Total: \$1,346,667			<ul style="list-style-type: none"> \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI 	
107	21	1R43AI056761-01	HERRMANN, JOHN	<u>Therapeutic antibodies for lethal anthrax infection</u>

Total: \$263,086			<ul style="list-style-type: none"> \$263,086 2003 Herrmann, John E ANTIBODY SCIENCE, INC. WORCESTER, MA 	
108	21	1U54AI057168-010001	HEWLETTE, ERIK	<u>BACTERIAL ANTIGENS AND ANTHRAX VACCINE DEVELOPMENT</u>
Total: \$22,072,698			<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
109	21	1R21AI056113-01	HUGHES, MOLLY	<u>Studies on Macrophage Resistance to Anthrax Lethal Toxin</u>
Total: \$560,235			<ul style="list-style-type: none"> \$266,219 2004 Hughes, Molly A UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA \$294,016 2003 Hughes, Molly A UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA 	
110	21	1R21AI059231-01A1	IMPERIALE, MICHAEL	<u>Recombinant Adenovirus Vaccines Against B. anthracis</u>
Total: \$301,502			<ul style="list-style-type: none"> \$301,502 2005 Imperiale, Michael J UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI 	
111	21	1U01AI061271-01	JANDA, KIM	<u>Human Monoclonal IgG for Protection against Anthrax</u>
Total: \$676,414			<ul style="list-style-type: none"> \$317,177 2005 Janda, Kim D SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$359,237 2004 Janda, Kim D SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA 	
112	21	1R43AI052894-01	KARGINOV, VLADIMIR	<u>Small Molecule Blockers of B. anthracis Toxin</u>
Total: \$106,498			<ul style="list-style-type: none"> \$106,498 2002 Karginov, Vladimir ADVANCED BIOSYSTEMS, INC. MANASSAS, VA 	
113	21	1R01AI061712-01	KARIN, MICHAEL	<u>How Anthrax lethal factor kills macrophages</u>
Total: \$754,800			<ul style="list-style-type: none"> \$380,000 2005 Karin, Michael UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA \$374,800 2004 Karin, Michael UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA 	
114	21	1R21AI053528-	KARIN, MICHAEL	<u>How Anthrax lethal factor kills</u>

		01		<u>activated macrophages</u>
Total: \$450,800			<ul style="list-style-type: none"> \$228,000 2003 Karin, Michael UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA \$222,800 2002 Karin, Michael UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA 	
115	21	1R43AI052963-01	KENNEY, RICHARD	<u>Transcutaneous Immunization for an Anthrax Vaccine</u>
Total: \$666,550			<ul style="list-style-type: none"> \$376,150 2003 Kenney, Richard T IOMAI CORPORATION GAITHERSBURG, MD \$290,400 2002 Kenney, Richard T IOMAI CORPORATION GAITHERSBURG, MD 	
116	21	1R43AI052892-01	KITTRELL, JAMES	<u>Destruction of Air-Borne Pathogenic Bacteria</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2002 Kittrell, James R KSE, INC. AMHERST, MA 	
117	21	1R21AI053376-01	KLEMPNER, MARK	<u>New Method for Detecting Bacillus Anthracis Spores</u>
Total: \$433,468			<ul style="list-style-type: none"> \$216,368 2003 Klempner, Mark S BOSTON MEDICAL CENTER BOSTON, MA \$217,100 2002 Klempner, Mark S BOSTON MEDICAL CENTER BOSTON, MA 	
118	21	1R01AI066506-01	KNAP, ANIA	<u>Broad Spectrum Agents Against Cat A Bacterial Pathogens</u>
Total: \$1,450,688			<ul style="list-style-type: none"> \$1,450,688 2005 Knap, Ania MAXTHERA, INC. READING, MA 	
119	21	1R43AI053021-01	KOCHI, SIMS	<u>Live Attenuated Bacterial Vaccines Against Anthrax</u>
Total: \$120,511			<ul style="list-style-type: none"> \$120,511 2002 Kochi, Sims K AVANT IMMUNOTHERAPEUTICS, INC. NEEDHAM, MA 	
120	21	1Z01BJ005013-02	KOPECKO, DENNIS	<u>Development of vaccines against anthrax</u>
121	21	1R01AI059348-01	KOZEL, THOMAS	<u>B. anthracis: passive immunization with anticapsular mAb</u>
Total: \$893,577			<ul style="list-style-type: none"> \$447,683 2005 Kozel, Thomas R UNIVERSITY OF NEVADA RENO RENO, NV \$445,894 2004 Kozel, Thomas R UNIVERSITY OF NEVADA RENO RENO, NV 	
122	21	1R01AI058107-01A1	KUROSAWA, SHINICHIRO	<u>PRIMATE MODEL AND PATHOGENESIS OF ANTHRAX</u>

				<u>SEPSIS</u>
Total: \$495,897			<ul style="list-style-type: none"> \$495,897 2005 Kurosawa, Shinichiro OKLAHOMA MEDICAL RESEARCH FOUNDATION OKLAHOMA CITY, OK 	
123	21	1R21AI059489-01	LEWIS, KIM	<u>BIODEFENSE THERAPEUTICS FROM UNCULTURED MICROORGANISMS</u>
Total: \$630,000			<ul style="list-style-type: none"> \$315,000 2005 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA \$315,000 2004 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA 	
124	21	1R43AI060283-01A1	LI, XING-XIANG	<u>A Rapid, Sensitive and Fully Automated Anthrax Test</u>
Total: \$294,393			<ul style="list-style-type: none"> \$294,393 2005 Li, Xingxiang CELLEX, INC. ROCKVILLE, MD 	
125	21	1U01AI054774-01	LIN, AUGUSTINE	<u>Development of a Novel Retrogen Vaccine for Anthrax</u>
Total: \$536,817			<ul style="list-style-type: none"> \$178,309 2004 Lin, Augustine Y MITHRAGEN, INC. HOUSTON, TX \$358,508 2003 Lin, Augustine Y MITHRAGEN, INC. HOUSTON, TX 	
126	21	1R01AI066504-01	LING, LOSEE	<u>Novel Antibiotics from Unculturable Actinomycetes</u>
Total: \$932,873			<ul style="list-style-type: none"> \$932,873 2005 Ling, Losee Lucy NOVOBIOTIC PHARMACEUTICALS, LLC CAMBRIDGE, MA 	
127	21	1U01AI061314-01	LOWY, ISRAEL	<u>Development of Fully Human mAbs as Anthrax Antitoxins</u>
Total: \$781,093			<ul style="list-style-type: none"> \$781,093 2004 Lowy, Israel MEDAREX, INC. PRINCETON, NJ 	
128	21	2R42AI052670-02	LUXEMBOURG, ALAIN	<u>Potentiating an Anthrax DNA Vaccine with Electroporation</u>
Total: \$1,128,919			<ul style="list-style-type: none"> \$1,128,919 2004 Luxembourg, Alain T ICHOR MEDICAL SYSTEMS, INC. SAN DIEGO, CA 	
129	21	1R43AI053936-01A1	LUXEMBOURG, ALAIN	<u>Application Protocols for a DNA Vaccine Against Anthrax</u>
Total: \$299,919			<ul style="list-style-type: none"> \$299,919 2003 Luxembourg, Alain T ICHOR MEDICAL SYSTEMS, INC. SAN DIEGO, CA 	
130	21	1R21AI053360-01	MADDOCK, JANINE	<u>Proteomics of B anthracis membrane and spore proteins</u>

Total: \$444,187			<ul style="list-style-type: none"> • \$225,775 2003 Maddock, Janine R UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI • \$218,412 2002 Maddock, Janine R UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI 	
131	21	1P01AI056013-01	MANCHESTER, MARIANNE	<u>Multivalent display of anthrax toxin inhibitors</u>
Total: \$4,988,380			<ul style="list-style-type: none"> • \$2,060,333 2005 Manchester, Marianne SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$2,000,047 2004 Manchester, Marianne SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$928,000 2003 Manchester, Marianne SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA 	
132	21	1U19AI056575-010001	MANKIN, ALEXANDER	<u>New Antibiotic Inhibitors of the B. anthracis Ribosome</u>
Total: \$8,548,157 *			<ul style="list-style-type: none"> • \$3,420,271 2005 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL • \$3,320,641 2004 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL • \$1,807,245 2003 Johnson, Michael E UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
133	21	1U01AI057276-01	MARKHAM, PENELOPE	<u>PTE-based drug for antibiotic-resistant anthrax</u>
Total: \$3,189,520			<ul style="list-style-type: none"> • \$1,156,790 2005 Burns, Christopher PROTEZ PHARMACEUTICALS, INC. MALVERN, PA • \$1,284,387 2004 Markham, Penelope N PROTEZ PHARMACEUTICALS, INC. MALVERN, PA • \$748,343 2003 Markham, Penelope N INFLUX, INC. CHICAGO, IL 	
134	21	1R21AI054602-01	MATSUMURA, ICHIRO	<u>Engineered alkaline phosphatases as biosensors</u>
Total: \$532,000			<ul style="list-style-type: none"> • \$266,000 2004 Matsumura, Ichiro EMORY UNIVERSITY ATLANTA, GA • \$266,000 2003 Matsumura, Ichiro EMORY UNIVERSITY ATLANTA, GA 	
135	21	1F32AI055245-01	MAYNARD, JENNIFER	<u>Bacterial Adenylate Cyclase Toxins: Role in Pathogenesis</u>
Total: \$41,608			<ul style="list-style-type: none"> • \$41,608 2003 Maynard, Jennifer A STANFORD UNIVERSITY STANFORD, CA 	
136	21	1Z01BJ007008-01	MEADE, BRUCE	<u>Development and evaluation of laboratory methods that as</u>
137	21	1U54AI057159-010003	MEKALANOS, JOHN	<u>Microbial Vectors for Antigen Delivery</u>
Total: \$26,169,985 *			<ul style="list-style-type: none"> • \$10,173,756 2005 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL 	

				<p>SCHOOL) BOSTON, MA</p> <ul style="list-style-type: none"> \$11,843,830 2004 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$4,152,399 2003 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA
138	21	1R21AI059520-01	METODIEV, METODI	<u>Yeast based model of anthrax lethal factor toxicity</u>
Total: \$193,750			<ul style="list-style-type: none"> \$193,750 2004 Metodiev, Metodi V UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
139	21	1U01AI056546-01	MOGRIDGE, JEREMY	<u>Development and testing of anthrax toxin inhibitors</u>
Total: \$3,026,916			<ul style="list-style-type: none"> \$1,155,989 2005 Mogridge, Jeremy S UNIVERSITY OF TORONTO CANADA - TORONTO \$1,122,727 2004 Mogridge, Jeremy S UNIVERSITY OF TORONTO CANADA - TORONTO \$748,200 2003 Mogridge, Jeremy S UNIVERSITY OF TORONTO CANADA - TORONTO 	
140	21	1R43AI053959-01	NYE, STEVEN	<u>Combinatorial rat panels that genetically screen anthrax</u>
Total: \$312,536			<ul style="list-style-type: none"> \$312,536 2003 Nye, Steven H PHYSIOGENIX, INC. WAUWATOSA, WI 	
141	21	1R21AI053397-01	O'BRIEN, ALISON	<u>Immunoprotective monoclonals to B anthracis spores</u>
Total: \$446,100			<ul style="list-style-type: none"> \$223,050 2003 O'Brien, Alison D HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$223,050 2002 O'Brien, Alison D HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD 	
142	21	2R44AI052936-02	PADHYE, NISHA	<u>A PCR Jet for Rapid Detection of Special pathogens</u>
Total: \$394,873			<ul style="list-style-type: none"> \$394,873 2004 Padhye, Nisha V MEGABASE RESEARCH PRODUCTS LINCOLN, NE 	
143	21	1R43AI058536-01	PALECANDA, AIYAPPA	<u>Anthrax Vaccine Formulations Combining PA/Spore Epitopes</u>
Total: \$728,648			<ul style="list-style-type: none"> \$291,720 2005 Palecanda, Aiyappa M LIGOCYTE PHARMACEUTICALS, INC. BOZEMAN, MT \$436,928 2004 Palecanda, Aiyappa M LIGOCYTE PHARMACEUTICALS, INC. BOZEMAN, MT 	
144	21	1R03AI054622-01	PETERS, WENDY	<u>Role of Chemokines in Anthrax Pathogenesis</u>
Total: \$179,000			<ul style="list-style-type: none"> \$89,500 2004 Peters, Wendy J. DAVID GLADSTONE INSTITUTES 	

			SAN FRANCISCO, CA	
			<ul style="list-style-type: none"> \$89,500 2003 Peters, Wendy J. DAVID GLADSTONE INSTITUTES SAN FRANCISCO, CA 	
145	21	1R21AI056110-01	PETERS, WENDY	<u>Chemokines and their Receptors in Anthrax Infection</u>
		Total: \$498,519	<ul style="list-style-type: none"> \$242,953 2004 Peters, Wendy J. DAVID GLADSTONE INSTITUTES SAN FRANCISCO, CA \$255,566 2003 Peters, Wendy J. DAVID GLADSTONE INSTITUTES SAN FRANCISCO, CA 	
146	21	1U01AI053858-01	PETERSON, JOHNNY	<u>Development of Therapeutic Inhibitors to Anthrax Toxins</u>
		Total: \$1,540,401	<ul style="list-style-type: none"> \$441,167 2004 Peterson, Johnny W UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$728,317 2003 Peterson, Johnny W UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$370,917 2002 Peterson, Johnny W UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
147	21	1R21AI053292-01	PIZZO, SALVATORE	<u>Alpha2-Macroglobulin-PA Complexes: Novel Anthrax Vaccin*</u>
		Total: \$462,000	<ul style="list-style-type: none"> \$231,000 2003 Pizzo, Salvatore V DUKE UNIVERSITY DURHAM, NC \$231,000 2002 Pizzo, Salvatore DUKE UNIVERSITY DURHAM, NC 	
148	21	1R01AI056499-01	PULENDRAN, BALI	<u>ANTHRAX TOXIN, DENDRITIC CELLS AND ADAPTIVE IMMUNITY</u>
		Total: \$950,625	<ul style="list-style-type: none"> \$380,250 2005 Pulendran, Bali EMORY UNIVERSITY ATLANTA, GA \$380,250 2004 Pulendran, Bali EMORY UNIVERSITY ATLANTA, GA \$190,125 2003 Pulendran, Bali EMORY UNIVERSITY ATLANTA, GA 	
149	21	1Z01BM006014-01	PURI, RAJ	<u>Activity of extracellular domain of anthrax toxin</u>
150	21	1R01AI054444-01	RAMAN, C	<u>Structural Biology of Prokaryotic NO Synthases</u>
		Total: \$830,063	<ul style="list-style-type: none"> \$259,875 2005 Raman, C S UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX \$259,875 2004 Raman, C S UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX \$310,313 2003 Raman, C S UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON HOUSTON, TX 	
151	21	1R01AI066508-01	REASON, DONALD	<u>Human monoclonal panel mimicking anthrax immune globulin</u>

Total: \$722,405			<ul style="list-style-type: none"> \$722,405 2005 Reason, Donald C CHILDREN'S HOSPITAL & RES CTR AT OAKLAND OAKLAND, CA 	
152	21	1R43AI054086-01	SATHIYASSEELAN, THILLAINAYAGAM	<u>Human Abs to B. Anthracis in Cloned Transgenic Cattle</u>
Total: \$137,316			<ul style="list-style-type: none"> \$137,316 2003 Sathiyasseelan, Thillainayagam HEMATECH, LLC WESTPORT, CT 	
153	21	1R21AI056229-01	SCANDURRO, ALINE	<u>Discovery of New Cellular Targets of Anthrax Toxin</u>
Total: \$445,500			<ul style="list-style-type: none"> \$222,750 2004 Scandurro, Aline B TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$222,750 2003 Scandurro, Aline B TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	
154	21	1U56AI057164-01	SCHLIEVERT, PATRICK	<u>MWCE: Transmission/Pathogenesis of Bioterrorism Agents</u>
Total: \$1,354,051 *			<ul style="list-style-type: none"> \$670,963 2004 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN \$683,088 2003 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN 	
155	21	1Z01BJ004007-01	SCHMITT, MICHAEL	<u>Characterization of the iron regulon in Bacillus anthrac</u>
156	21	1Z01BJ004012-01	SCHMITT, MICHAEL	<u>Identification of virulence determinants in Corynebacter</u>
157	21	1R41AI059138-01A1	SCHOEN, CHRISTIAN	<u>Automated, portable, concurrent, WMD detection system</u>
Total: \$994,832			<ul style="list-style-type: none"> \$500,000 2005 Schoen, Christian CONCURRENT ANALYTICAL, INC. Kailua, HI \$494,832 2004 Schoen, Christian CONCURRENT ANALYTICAL, INC. Kailua, HI 	
158	21	1P30AR050948-010002	SHI, ZHONGKAI	<u>E. coli filtrates as Adjuvant for Topical Anthrax Vaccin</u>
Total: \$571,940			<ul style="list-style-type: none"> \$571,940 2004 Elmets, Craig A UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
159	21	1Z01DK015500-41	SHILOACH, JOSEPH	<u>Large-scale Production & Purification Of Compounds With</u>
160	21	1R21AI053524-01	SIMON, SANFORD	<u>Treatment of Anthrax with Nonantimicrobial Tetracyclines</u>
Total: \$451,500			<ul style="list-style-type: none"> \$225,750 2003 Simon, Sanford R STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	

			<ul style="list-style-type: none"> \$225,750 2002 Simon, Sanford R STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY
161	21	1R21AI059436-01	<p>STEWART, GEORGE</p> <p><u>Function of the Bacillus anthracis Spore Carboydrate</u></p>
Total: \$535,000			<ul style="list-style-type: none"> \$48,789 2005 Stewart, George C UNIVERSITY OF MISSOURI COLUMBIA COLUMBIA, MO \$240,257 2005 Stewart, George C UNIVERSITY OF MISSOURI COLUMBIA COLUMBIA, MO \$245,954 2004 Stewart, George C KANSAS STATE UNIVERSITY MANHATTAN, KS
162	21	1Z01BJ005015-01	<p>STIBITZ, E.</p> <p><u>Development of genetic tools for the manipulation of Bac</u></p>
163	21	1Z01BJ005015-02	<p>STIBITZ, E.</p> <p><u>Development of genetic tools for the manipulation of Bac</u></p>
164	21	1R43AI058410-01	<p>SURBER, MARK</p> <p><u>Antibacterial Therapy by Pathogen Osmolality Disruption</u></p>
Total: \$265,985			<ul style="list-style-type: none"> \$265,985 2004 Surber, Mark W MPEX PHARMACEUTICALS, INC. SAN DIEGO, CA
165	21	1U01AI055010-01A1	<p>SYKES, KATHRYN</p> <p><u>Discovery of new anti-bacteremia vaccines for anthrax</u></p>
Total: \$3,453,389			<ul style="list-style-type: none"> \$1,114,614 2005 Sykes, Kathryn F UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,225,780 2004 Sykes, Kathryn F MACROGENICS, INC. DALLAS, TX \$1,112,995 2003 Sykes, Kathryn F MACROGENICS, INC. DALLAS, TX
166	21	1R01GM062548-01	<p>TANG, WEI-JEN</p> <p><u>CALMODULIN REGULATION OF ANTHRAX AND ADENYLYL CYCLASES</u></p>
Total: \$1,107,848			<ul style="list-style-type: none"> \$278,077 2004 Tang, Weijen UNIVERSITY OF CHICAGO CHICAGO, IL \$270,527 2003 Tang, Weijen UNIVERSITY OF CHICAGO CHICAGO, IL \$31,310 2002 Tang, Wei-Jen UNIVERSITY OF CHICAGO CHICAGO, IL \$263,192 2002 Tang, Wei-Jen UNIVERSITY OF CHICAGO CHICAGO, IL \$264,742 2001 Tang, Wei-Jen UNIVERSITY OF CHICAGO CHICAGO, IL
167	21	1R01AI058052-01	<p>TEUSCHER, CORY</p> <p><u>Genetics of Suscptibility to Anthrax Toxin in vivo</u></p>
Total: \$757,500			<ul style="list-style-type: none"> \$378,750 2005 Teuscher, Cory UNIVERSITY OF VERMONT & ST AGRIC COLLEGE BURLINGTON, VT \$378,750 2004 Teuscher, Cory UNIVERSITY OF VERMONT & ST AGRIC COLLEGE BURLINGTON, VT

168	21	1R21AI053270-01A1	VAN DER GOOT, FRANCOISE	<u>Anthrax toxin-host cell interactions</u>
Total: \$300,000			<ul style="list-style-type: none"> \$150,000 2004 Vandergoot, Francoise G UNIVERSITY OF GENEVA SWITZERLAND - GENEVA \$150,000 2003 Vandergoot, Francoise G UNIVERSITY OF GENEVA SWITZERLAND - GENEVA 	
169	21	1U01AI056559-01	VAN NEST, GARY	<u>Advanced anthrax vaccine made with ISS DNA formulations</u>
Total: \$1,507,236			<ul style="list-style-type: none"> \$816,464 2005 Vannest, Gary A DYNAVAX TECHNOLOGIES CORPORATION BERKELEY, CA \$456,128 2004 Vannest, Gary A DYNAVAX TECHNOLOGIES CORPORATION BERKELEY, CA \$234,644 2003 Vannest, Gary A DYNAVAX TECHNOLOGIES CORPORATION BERKELEY, CA 	
170	21	1R41AI052916-01	VODOVOTZ, YORAM	<u>Mathematical Modeling of Anthrax Infection</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2002 Vodovotz, Yoram IMMUNETRICS, INC. PITTSBURGH, PA 	
171	21	1R21AI053410-01	VOGT, PETER	<u>Potent inhibitors of Anthrax Lethal Factor</u>
Total: \$555,600			<ul style="list-style-type: none"> \$277,800 2003 Vogt, Peter K SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$277,800 2002 Vogt, Peter K SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
172	21	1R03AI059500-01	WANG, JULIA	<u>Chemical Structure of Anthrax Spore Polysaccharide</u>
Total: \$86,500			<ul style="list-style-type: none"> \$86,500 2004 Wang, Julia Y BRIGHAM AND WOMEN'S HOSPITAL BOSTON, MA 	
173	21	1R21AI053369-01	WANG, JULIA	<u>DEVELOPMENT OF MULTIVALENT ANTHRAX TOXIN INHIBITORS</u>
Total: \$506,473			<ul style="list-style-type: none"> \$254,025 2003 Wang, Julia Y BRIGHAM AND WOMEN'S HOSPITAL BOSTON, MA \$252,448 2002 Wang, Julia Y BRIGHAM AND WOMEN'S HOSPITAL BOSTON, MA 	
174	21	1U01AI061297-01	WOLINSKY, STEVEN	<u>Detection of Category A Pathogens by Gold Nanoparticles</u>
Total: \$1,316,780			<ul style="list-style-type: none"> \$1,316,780 2004 Wolinsky, Steven M NORTHWESTERN UNIVERSITY CHICAGO, IL 	
175	21	1R21NS051130-	WU, YUNTAO	<u>Targeting Brain Macrophages by a</u>

		01A1		<u>novel lentiviral vector</u>
Total: \$131,792			<ul style="list-style-type: none"> \$131,792 2005 Wu, Yuntao GEORGE MASON UNIVERSITY FAIRFAX, VA 	
176	21	1R43AI053005-01A1	WYCOFF, KEITH	<u>Immunotherapy for Pulmonary Anthrax</u>
Total: \$109,500			<ul style="list-style-type: none"> \$109,500 2003 Wycoff, Keith L PLANET BIOTECHNOLOGY, INC. HAYWARD, CA 	
177	21	1R43AI053018-01	YING, BAOLING	<u>Development of a virus vector vaccine against anthrax</u>
Total: \$140,710			<ul style="list-style-type: none"> \$140,710 2002 Krajcsi, Peter VIRRX, INC. ST. LOUIS, MO 	
178	21	1R01AI048489-01	YOUNG, JOHN	<u>STRATEGIES TO INHIBIT CELLULAR UPTAKE OF ANTHRAX TOXIN</u>
Total: \$2,638,183 *			<ul style="list-style-type: none"> \$581,627 2005 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$586,123 2004 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$449,673 2003 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$346,383 2002 Young, John A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$359,538 2001 Young, John A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$314,839 2000 YOUNG, JOHN A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
179	21	2R01AI048489-06	YOUNG, JOHN	<u>Anthrax Toxin Entry into Cells</u>
Total: \$2,638,183 *			<ul style="list-style-type: none"> \$581,627 2005 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$586,123 2004 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$449,673 2003 Young, John At SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA \$346,383 2002 Young, John A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$359,538 2001 Young, John A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$314,839 2000 YOUNG, JOHN A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
180	21	1R21AI057889-01	ZANETTI, MAURIZIO	<u>Conformationally-Constrained PA Anthrax Vaccine</u>
Total: \$209,033			<ul style="list-style-type: none"> \$209,033 2004 Zanetti, Maurizio UNIVERSITY OF CALIFORNIA SAN 	

			DIEGO LA JOLLA, CA	
181	21	1R03AI053598-01	ZENG, MINGTAO	<u>Multi-component and easily administrated anthrax vaccine</u>
Total: \$157,500			<ul style="list-style-type: none"> • \$78,750 2003 Zeng, Mingtao UNIVERSITY OF ROCHESTER ROCHESTER, NY • \$78,750 2002 Zeng, Mingtao UNIVERSITY OF ROCHESTER ROCHESTER, NY 	
182	21	1R21AI054395-01	ZHANG, HONG-ZHONG	<u>Beta-lactamase Antibiotic Resistance of B anthracis</u>
Total: \$302,833			<ul style="list-style-type: none"> • \$151,500 2004 Zhang, Hongzhong UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA • \$151,333 2003 Zhang, Hongzhong UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA 	
183	21	1R21AI053306-01	ZOLLA-PAZNER, SUSAN	<u>Human Monoclonal Antitoxin to Anthrax Protective Antigen</u>
Total: \$506,250			<ul style="list-style-type: none"> • \$253,500 2003 Zollapazner, Susan B NEW YORK UNIVERSITY SCHOOL OF MEDICINE NEW YORK, NY • \$252,750 2002 Zolla-Pazner, Susan NEW YORK UNIVERSITY SCHOOL OF MEDICINE NEW YORK, NY 	
184	13	1R43AI052508-01	BRADLEY, BRUCE	<u>Vacuum Collection and Containment of Anthrax/Pathogens</u>
Total: \$100,000			<ul style="list-style-type: none"> • \$100,000 2002 Bradley, Bruce J ROCKY MOUNTAIN RESOURCE LABS, INC. JEROME, ID 	
185	13	1R21CI000096-01	COLLINS, CHRISTOPHER	<u>DISCOVERY AND DEVELOPMENT OF BIODEFENSE ANTIMICROBIALS</u>
186	13	2R01GM031655-21	COZZARELLI, NICHOLAS	<u>RNA Ligase Function and Use in DNA Synthesis</u>
Total: \$2,003,500			<ul style="list-style-type: none"> • \$347,979 2005 Cozzarelli, Nicholas R UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA • \$348,911 2004 Cozzarelli, Nicholas R UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA • \$315,941 2003 Cozzarelli, Nicholas R UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA • \$306,951 2002 Cozzarelli, Nicholas R UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA • \$364,983 2001 Cozzarelli, Nicholas R. UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA • \$318,735 2000 COZZARELLI, NICHOLAS R UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA 	

187	13	1R01AI047152-01	LIDDINGTON, ROBERT	<u>STRUCTURAL STUDIES ON THE ANTHRAX LETHAL TOXIN</u>
Total: \$1,706,250			<ul style="list-style-type: none"> \$341,250 2004 Liddington, Robert C BURNHAM INSTITUTE LA JOLLA, CA \$341,250 2003 Liddington, Robert C BURNHAM INSTITUTE LA JOLLA, CA \$341,250 2002 Liddington, Robert C BURNHAM INSTITUTE SAN DIEGO, CA \$341,250 2001 Liddington, Robert C BURNHAM INSTITUTE SAN DIEGO, CA \$341,250 2000 LIDDINGTON, ROBERT C BURNHAM INSTITUTE SAN DIEGO, CA 	
188	13	1R21AI053517-01	LINDBERG, IRIS	<u>Blockade of Anthrax Cytotoxicity Using Furin Inhibitors</u>
Total: \$382,100			<ul style="list-style-type: none"> \$177,500 2003 Lindberg, Iris LOUISIANA STATE UNIV HSC NEW ORLEANS NEW ORLEANS, LA \$204,600 2002 Lindberg, Iris LOUISIANA STATE UNIV HSC NEW ORLEANS NEW ORLEANS, LA 	
189	10	1R43AI058627-01A1	ALEKSHUN, MICHAEL	<u>Novel Therapeutics for Biodefense</u>
Total: \$1,684,306			<ul style="list-style-type: none"> \$854,748 2005 Alekshun, Michael N PARATEK PHARMACEUTICALS BOSTON, MA \$829,558 2004 Alekshun, Michael N PARATEK PHARMACEUTICALS BOSTON, MA 	
190	10	1R43AI066437-01	ALIBEK, KEN	<u>New Generation of Anthrax Prophylaxis and Therapy</u>
Total: \$432,829			<ul style="list-style-type: none"> \$432,829 2005 Alibek, Ken ADVANCED BIOSYSTEMS, INC. GERMANTOWN, MD 	
191	10	1R21AI053426-01	ARTENSTEIN, ANDREW	<u>Novel Approaches to the Inhibition of Anthrax Toxin</u>
Total: \$461,700			<ul style="list-style-type: none"> \$230,850 2003 Artenstein, Andrew W UNIVERSITY OF RHODE ISLAND KINGSTON,, RI \$230,850 2002 Artenstein, Andrew W MEMORIAL HOSPITAL OF RHODE ISLAND PAWTUCKET, RI 	
192	10	1R43AI054060-01	BACKER, JOSEPH	<u>Targeted delivery of anti-anthrax therapeutics</u>
Total: \$107,000			<ul style="list-style-type: none"> \$107,000 2003 Backer, Joseph M SIBTECH, INC. NEWINGTON, CT 	
193	10	1U19AI056578-010001	BAILLIE, LESLIE	<u>Rational Design of an Anthrax Toxin Neutralizing Vaccine</u>
Total: \$4,457,410			<ul style="list-style-type: none"> \$1,930,417 2005 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	

				<ul style="list-style-type: none"> \$1,881,608 2004 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$645,385 2003 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD
194	10	1P01CI000095-010001	BEUTLER, BRUCE	<u>Genes Required for Responses to Anthrax Lethal Factor</u>
195	10	1U01AI057232-01	BOCHNER, BARRY	<u>Detection of Bioterrorism Agents with PM Technology</u>
Total: \$1,864,722				<ul style="list-style-type: none"> \$550,250 2005 Bochner, Barry R BIOLOG, INC. HAYWARD, CA \$920,940 2004 Bochner, Barry R BIOLOG, INC. HAYWARD, CA \$393,532 2003 Bochner, Barry R BIOLOG, INC. HAYWARD, CA
196	10	1P01CI000095-010004	BOKOCH, GARY	<u>Regulation of Human Leukocyte Function by Anthrax Toxins</u>
197	10	1U01AI061311-01	BOWDISH, KATHERINE	<u>Human Antibody Therapeutics Against Anthrax</u>
Total: \$737,620				<ul style="list-style-type: none"> \$737,620 2004 Bowdish, Katherine S ALEXION ANTIBODY TECHNOLOGIES, INC. SAN DIEGO, CA
198	10	1R21AI053303-01	BROOKMEYER, RONALD	<u>Statistical Models for Anthrax</u>
Total: \$490,500				<ul style="list-style-type: none"> \$245,250 2003 Brookmeyer, Ronald S JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$245,250 2002 Brookmeyer, Ronald S JOHNS HOPKINS UNIVERSITY BALTIMORE, MD
199	10	1R43AI060348-01A1	BUTLER, MICHELLE	<u>DEVELOPMENT OF SCREENS FOR BACILLUS ANTHRACIS TARGETS</u>
Total: \$386,681				<ul style="list-style-type: none"> \$386,681 2005 Butler, Michelle M MICROBIOTIX, INC. WORCESTER, MA
200	10	1U19AI062629-01	CAPRA, J	<u>Molecular and Immunologic Analysis of the Pathobiology of Anthrax</u>
Total: \$2,786,653				<ul style="list-style-type: none"> \$26,472 2005 Capra, J Donald OKLAHOMA MEDICAL RESEARCH FOUNDATION OKLAHOMA CITY, OK \$2,760,181 2004 Capra, J Donald OKLAHOMA MEDICAL RESEARCH FOUNDATION OKLAHOMA CITY, OK
201	10	1R21AI059233-01	CHEN, ZHENG	<u>T cell immunity to B. anthracis</u>
Total: \$340,000				<ul style="list-style-type: none"> \$340,000 2004 Chen, Zheng W BETH ISRAEL DEACONESS MEDICAL CENTER BOSTON, MA

202	10	1R21AI055013-01	CLEMENTS, JOHN	<u>Combinatorial vaccines against anthrax and plague</u>
Total: \$610,500			<ul style="list-style-type: none"> • \$313,500 2004 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA • \$297,000 2003 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	
203	10	1U01AI056452-01	CLEMENTS, JOHN	<u>Novel adjuvants for biodefense vaccines</u>
Total: \$1,759,403			<ul style="list-style-type: none"> • \$270,779 2005 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA • \$460,814 2004 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA • \$1,027,810 2003 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	
204	10	1R43AI052891-01	COESHOTT, CLAIRE	<u>A novel adjuvant/delivery system for anthrax vaccine</u>
Total: \$224,518			<ul style="list-style-type: none"> • \$224,518 2002 Coeshott, Claire M RXKINETIX, INC. LOUISVILLE, CO 	
205	10	1P01CI000095-010005	CROSS, ANDREW	<u>NOX Proteins and Resistance to Infectious Disease</u>
206	10	1R21AI060941-01	DAVIS, GEORGE	<u>Function of CMG-2, an Anthrax Toxin Receptor</u>
Total: \$363,750			<ul style="list-style-type: none"> • \$181,875 2005 Davis, George E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$181,875 2004 Davis, George E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX 	
207	10	1U01AI061199-01	DUBENSKY, THOMAS	<u>Psoralen-Killed, Metabolically-Active Anthrax Vaccine</u>
Total: \$1,461,608			<ul style="list-style-type: none"> • \$1,461,608 2004 Dubensky, Thomas W CERUS CORPORATION CONCORD, CA 	
208	10	1P20RR015564-01	DYER, DAVID	<u>FUNCTIONAL GENOMIC/PROTEOMICS OF BACTERIAL HOST INTERACT</u>
Total: \$9,678,543			<ul style="list-style-type: none"> • \$1,931,192 2004 Iandolo, John J UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK • \$1,932,056 2003 Iandolo, John J UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK • \$1,945,714 2002 Iandolo, John J UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK • \$33,548 2001 Dyer, David W UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK • \$1,906,517 2001 Dyer, David W UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK 	

			<ul style="list-style-type: none"> \$1,929,516 2000 DYER, DAVID W UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR OKLAHOMA CITY, OK
209	10	1R01CI000099-01	ECKER, DAVID <u>Automated Simultaneous Detection of Bioterrorism Agents</u>
210	10	1Z01CL008068-01	EICHACKER, PETER <u>Pretreatment Sublethal B. Anthracis Lethal Toxin in Rats</u>
211	10	1R43AI052941-01	FATHI, ZAKARYAE <u>Sterilization of Mail using Variable Frequency Microwave</u>
Total: \$97,866			<ul style="list-style-type: none"> \$97,866 2002 Fathi, Zakaryae LAMBDA TECHNOLOGIES, INC. MORRISVILLE, NC
212	10	1U19AI056510-01	FISCHETTI, VINCENT <u>Pathogen-specific drug targets for weaponized bacteria</u>
Total: \$3,399,387			<ul style="list-style-type: none"> \$1,349,740 2005 Fischetti, Vincent A ROCKEFELLER UNIVERSITY NEW YORK, NY \$1,317,962 2004 Fischetti, Vincent A ROCKEFELLER UNIVERSITY NEW YORK, NY \$731,685 2003 Fischetti, Vincent A ROCKEFELLER UNIVERSITY NEW YORK, NY
213	10	1Z01BO002009-01	FRUCHT, DAVID <u>Host Factors that Modulate Anthrax Lethal Toxin</u>
214	10	2R44AI052963-03	GLENN, GREGORY <u>Transcutaneous Immunization for an Anthrax Vaccine</u>
Total: \$1,985,771			<ul style="list-style-type: none"> \$985,771 2005 Glenn, Gregory M IOMAI CORPORATION GAITHERSBURG, MD \$1,000,000 2004 Glenn, Gregory M SIGNAIGO, KATHLEEN GAITHERSBURG, MD
215	10	1R01AI054796-01	HAN, JIAHUAI <u>Molecular Mechanisms of Anthrax-Induced Macrophage Death</u>
Total: \$1,126,200			<ul style="list-style-type: none"> \$375,400 2005 Han, Jiahuai SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$375,400 2004 Han, Jiahuai SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$375,400 2003 Han, Jiahuai SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA
216	10	1R41AI053060-01	HOBART, PETER <u>Prophylactic Anthrax Toxin Vaccine</u>
Total: \$462,918			<ul style="list-style-type: none"> \$462,918 2002 Hobart, Peter M VICAL INCORPORATED SAN DIEGO, CA
217	10	2R44AI053060-02	HOBART, PETER <u>Prophylactic Anthrax Toxin</u>

				<u>Vaccine</u>
Total: \$3,841,474			<ul style="list-style-type: none"> \$1,945,441 2004 Hobart, Peter M VICAL, INC. SAN DIEGO, CA \$1,896,033 2003 Hobart, Peter M VICAL, INC. SAN DIEGO, CA 	
218	10	1R03AI061722-01	HYBERTSON, BROOKS	<u>Respirable ciprofloxacin aerosol for inhaled anthrax</u>
Total: \$77,000			<ul style="list-style-type: none"> \$77,000 2004 Hybertson, Brooks M UNIVERSITY OF COLORADO DENVER/HSC AURORA AURORA, CO 	
219	10	1R21AI055968-01	JOHN, MANOHAR	<u>Anthrax spore-surface antigens for biosensor development</u>
Total: \$605,500			<ul style="list-style-type: none"> \$302,750 2004 John, Manohar MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA \$302,750 2003 John, Manohar MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA 	
220	10	1R21AI053506-01A1	KANE, RAVI	<u>The Design of Inhibitors of Anthrax Toxin</u>
Total: \$507,034			<ul style="list-style-type: none"> \$246,929 2004 Kane, Ravi S RENSSELAER POLYTECHNIC INSTITUTE TROY, NY \$260,105 2003 Kane, Ravi S RENSSELAER POLYTECHNIC INSTITUTE TROY, NY 	
221	10	1R43AI058458-01	KANG, ANGRAY	<u>Human Antibodies for Exposure/Protection from Anthrax</u>
Total: \$750,263			<ul style="list-style-type: none"> \$350,348 2005 Scholz, Wolfgang W AVANIR PHARMACEUTICALS SAN DIEGO, CA \$399,915 2004 Kang, Angray S AVANIR PHARMACEUTICALS SAN DIEGO, CA 	
222	10	2R44AI052894-02	KARGINOV, VLADIMIR	<u>Small Molecule Blockers of B. anthracis Toxin</u>
Total: \$1,500,659			<ul style="list-style-type: none"> \$912,224 2005 Karginov, Vladimir INNOVATIVE BIOLOGICS, INC. MANASSAS, VA \$588,435 2004 Karginov, Vladimir INNOVATIVE BIOLOGICS, INC. MANASSAS, VA 	

Bluetongue virus (exotic)

Taxonomy: Family *Reoviridae*, Genus *Orbivirus*, Species *Bluetongue virus*. Virus: Bluetongue

virus, exotic strains: 1, 3-9, 12, 14-16, 18-22.

Publications:

1. **Taus, Wilson W. C., H. C. Ma, E. H. Venter, A. A. van Djik, B. S. Seal, and J. O. Mecham.** 2000. Phylogenetic relationships of bluetongue viruses based on gene S7. *Virus Res* **67**:141-51.
This paper reports the phylogenetic analysis of the L3 gene segment of various Bluetongue virus isolates.
2. **Bonneau, K. R, N. Z. Zhang, W. C. Wilson, J. B. Zhu, F. Q. Zhang, Z. H. Li, K. L. Zhang, L. Xiao, W. B. Xiang, and N. J. MacLachlan.** 2000. Phylogenetic analysis of the S7 gene does not segregate Chinese strains of bluetongue virus into a single topotype. *Arch Virol* **145**:1163-71.
This paper reports the phylogenetic comparison of the S7 gene segment of exotic Bluetongue virus isolates with US-endemic strains.
3. **Meissner, J. D., J. O. Mecham, and W. C. Wilson.** 2001. Verification of bluetongue virus S9 segment nucleotide sequences. *Virus Res* **81**:93-101.
This paper reports the phylogenetic comparison of the S9 gene segment of exotic Bluetongue virus isolates with US-endemic strains.

NIH grants: None identified.

Bovine spongiform encephalopathy prion

Taxonomy: Prion.

Publications:

1. **Koo, H. C., Y. H. Park, B. C. Lee, C. Chae, K. I. O'Rourke, and T. V. Baszler.** 2001. Immunohistochemical detection of Prion protein (PrP-Sc) and epidemiological study of BSE in Korea. *J Vet Sci* **2**:25-31.
This paper reports the immunohistochemical detection of the prion in bovine tissues.
2. **Lloyd, S. E., J. B. Uphill, P. V. Targonski, E. M. Fisher, and J. Collinge.** 2002. Identification of genetic loci affecting mouse-adapted bovine spongiform encephalopathy incubation time in mice. *Neurogenetics* **4**:77-81.
This paper reports genomic characteristics of mice that influence the outcome of infection with the prion.
3. **Safar, J. G., M. Scott, J. Monaghan, C. Deering, S. Didorenko, J. Vergara, H. Ball, G. Legname, E. Leclerc, L. Solfrosi, H. Serban, D. Groth, D. R. Burton, S. B. Prusiner, and R. A. Williamson.** 2002. Measuring prions causing bovine spongiform encephalopathy or chronic wasting disease by immunoassays and transgenic mice. *Nat Biotechnol* **20**:1147-50.
This paper reports a detection method.

4. **Lasmezas, C. I., E. Comoy, S. Hawkins, C. Herzog, F. Mouthon, T. Konold, F. Auvre, E. Correia, N. Lescoutra-Etchegaray, N. Sales, G. Wells, P. Brown, and J. P. Deslys.** 2005. Risk of oral infection with bovine spongiform encephalopathy agent in primates. *Lancet* **365**:781-3.
This paper reports the characterization of oral transmission of the prion in primates.
5. **Scott, M. R., D. Peretz, H. O. Nguyen, S. J. Dearmond, and S. B. Prusiner.** 2005. Transmission barriers for bovine, ovine, and human prions in transgenic mice. *J Virol* **79**:5259-71.
This paper reports transmission restrictions of transgenic mice for different prions.

NIH Grants:

1	23	1R21NS045908-01	EYESTONE, WILLARD	<u>Generation of Prion Knockout Cattle</u>
Total: \$299,336			<ul style="list-style-type: none"> \$164,835 2004 Eyestone, Willard H VIRGINIA POLYTECHNIC INST AND ST UNIV BLACKSBURG, VA \$134,501 2003 Eyestone, Willard H VIRGINIA POLYTECHNIC INST AND ST UNIV BLACKSBURG, VA 	
2	19	2P01AG014359-060005	SINGH, NEENA	<u>PRP-SCRAPIE TRANSPORT-- INTESTINAL & BLOOD BRAIN BARRIER</u>
Total: \$7,768,728 *			<ul style="list-style-type: none"> \$1,559,093 2004 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,519,120 2003 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,500,000 2002 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$300,000 2002 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$99,500 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,000,000 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$905,844 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$885,171 2000 GAMBETTI, PIERLUIGI CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH 	
3	19	1R01NS040334-01	TELLING, GLENN	<u>TRANSGENETIC STUDIES OF PRION DISEASE IN CERVIDS</u>
Total: \$1,954,959			<ul style="list-style-type: none"> \$335,792 2005 Telling, Glenn C UNIVERSITY OF KENTUCKY LEXINGTON, KY \$289,600 2002 Telling, Glenn C UNIVERSITY OF KENTUCKY LEXINGTON, KY \$750,000 2001 Telling, Glenn C. UNIVERSITY OF KENTUCKY LEXINGTON, KY \$289,600 2001 Telling, Glenn C. UNIVERSITY OF KENTUCKY 	

				LEXINGTON, KY <ul style="list-style-type: none"> \$289,967 2000 TELLING, GLENN C UNIVERSITY OF KENTUCKY LEXINGTON, KY
4	10	1Z01BP005002-01	ASHER, DAVID	<u>INFECTIONS WITH TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHY</u>
5	10	1Z01BP005002-02	ASHER, DAVID	<u>Susceptibility to spongiform encephalopathies</u>
6	10	1Z01BP005002-03	ASHER, DAVID	<u>Susceptibility of genetically modified candidate cell su</u>
7	10	1Z01BP005003-04	ASHER, DAVID	<u>VALIDATE TRANSGENIC MICE TO DETECT SPONGIFORM ENCEPHALOP</u>
8	10	1Z01BP005018-01	ASHER, DAVID	<u>Effects of leukofiltration on cells experimentally infec</u>
9	10	1Z01BP005027-01	ASHER, DAVID	<u>Transmissible Spongiform Encephalopathies: Product Safet</u>
10	10	1Z01NS002957-07	BROWN, PAUL	<u>Transmissible Spongiform Encephalopathies</u>
11	10	1Z01NS002957-08	BROWN, PAUL	<u>Transmissible Spongiform Encephalopathies</u>
12	10	2P01AG004342-210015	BURTON, DENNIS	<u>Identification of anti-scrapie drugs</u>
Total: \$8,127,226 *				<ul style="list-style-type: none"> \$1,535,853 2005 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,503,420 2004 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,289,807 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,255,043 2002 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$123,004 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$1,048,805 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$145,840 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$1,225,454 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA
13	10	1P01NS041997-01	CARLSON, GEORGE	<u>Functional Genetics of Susceptibility to Prions</u>
Total: \$6,297,239				<ul style="list-style-type: none"> \$1,572,933 2004 Carlson, George A MC LAUGHLIN RESEARCH INS TITUTE GREAT FALLS, MT \$1,569,184 2003 Carlson, George A MC LAUGHLIN RESEARCH INS FOR BIOMED SCIS GREAT FALLS, MT \$1,561,788 2002 Carlson, George A MC LAUGHLIN RESEARCH INS FOR BIOMED SCIS GREAT FALLS, MT

				<ul style="list-style-type: none"> \$1,593,334 2001 Carlson, George A MC LAUGHLIN RESEARCH INS FOR BIOMED SCIS GREAT FALLS, MT
14	10	1R03AG024642-01	CASTILLA, JOAQUIN	<u>Biochemical Detection of Prions in Blood</u>
Total: \$61,910				<ul style="list-style-type: none"> \$61,910 2004 Castilla, Joaquin UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX
15	10	1Z01AI000580-14	CAUGHEY, BYRON	<u>Biochemistry Of Scrapie Pathogenesis</u>
16	10	1Z01AI000580-15	CAUGHEY, BYRON	<u>Biochemistry Of Scrapie Pathogenesis</u>
17	10	2P01AG014359-060003	CHEN, SHU	<u>MOLECULAR STUDIES OF HUMAN AND ANIMAL PRION PROTEINS</u>
Total: \$7,768,728 *				<ul style="list-style-type: none"> \$1,559,093 2004 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,519,120 2003 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,500,000 2002 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$300,000 2002 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$99,500 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$1,000,000 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$905,844 2001 Gambetti, Pierluigi CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$885,171 2000 GAMBETTI, PIERLUIGI CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH
18	10	1Z01NS002950-04	GIBBS, CLARENCE	<u>TRANSMISSIBLE SPONGIFORM ENCEPHALOPATHIES</u>
19	10	1Z01NS002950-05	GIBBS, CLARENCE	<u>Transmissible Spongiform Encephalopathies</u>
20	10	1Z01NS002950-06	GIBBS, CLARENCE	<u>Transmissible Spongiform Encephalopathies</u>
21	10	1R03AG022606-01A1	GREEN, MICHAEL	<u>Interaction of Prions with Dendritic Cells</u>
Total: \$60,270				<ul style="list-style-type: none"> \$60,270 2004 Green, Michael H JACOBS FACILITIES, INC. ST LOUIS, MO
22	10	1K08AI060680-01	HARRINGTON, ROBERT	<u>Transmission of Prions Within and Between Species</u>
Total: \$152,938				<ul style="list-style-type: none"> \$77,280 2005 Harrington, Robert D WASHINGTON STATE UNIVERSITY PULLMAN, WA

			<ul style="list-style-type: none"> \$75,658 2004 Harrington, Robert D WASHINGTON STATE UNIVERSITY PULLMAN, WA
23	10	1F32NS047785-01A1	JACKSON, WALKER <u>Analysis of Cytoplasmic Prion Protein Toxicity</u>
Total: \$42,976			<ul style="list-style-type: none"> \$42,976 2004 Jackson, Walker S WHITEHEAD INSTITUTE FOR BIOMEDICAL RES CAMBRIDGE, MA
24	10	1R01NS046037-01	MASTRIANNI, JAMES <u>Defining the prion domain of PrP</u>
Total: \$1,030,467			<ul style="list-style-type: none"> \$348,959 2005 Mastrianni, James A UNIVERSITY OF CHICAGO CHICAGO, IL \$344,557 2004 Mastrianni, James A UNIVERSITY OF CHICAGO CHICAGO, IL \$336,951 2003 Mastrianni, James A UNIVERSITY OF CHICAGO CHICAGO, IL
25	10	2P01AG004342-21	OLDSTONE, MICHAEL <u>Aging Disease-- Prion/Transgenic/Immunologic Studies</u>
Total: \$8,127,226 *			<ul style="list-style-type: none"> \$1,535,853 2005 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,503,420 2004 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,289,807 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,255,043 2002 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$123,004 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$1,048,805 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$145,840 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$1,225,454 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA
26	10	2P01AG004342-210013	OLDSTONE, MICHAEL <u>Transgenic models of transmissible spongiform encephalop</u>
Total: \$8,127,226 *			<ul style="list-style-type: none"> \$1,535,853 2005 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,503,420 2004 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,289,807 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$1,255,043 2002 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$123,004 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$1,048,805 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$145,840 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE

				<ul style="list-style-type: none"> SAN DIEGO, CA • \$1,225,454 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA
27	10	1R01NS047375-01	OLDSTONE, MICHAEL	<u>Pathogenesis Studies in Scrapie (TSE Diseases)</u>
Total: \$347,245				<ul style="list-style-type: none"> • \$347,245 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA
28	10	1R43HL070399-01	ORSER, CINDY	<u>A Catalytic Conformational Prion Sensor</u>
Total: \$102,362				<ul style="list-style-type: none"> • \$102,362 2002 Orser, Cindy S ARETE ASSOCIATES ARLINGTON, VA
29	10	1Z01AI000752-05	PRIOLA, SUZETTE	<u>MOLECULAR GENETICS OF SCRAPIE PATHOGENESIS</u>
30	10	1Z01AI000752-06	PRIOLA, SUZETTE	<u>Molecular Genetics Of Scrapie Pathogenesis</u>
31	10	1Z01AI000752-07	PRIOLA, SUZETTE	<u>Molecular Genetics Of Scrapie Pathogenesis</u>
32	10	1Z01AI000752-08	PRIOLA, SUZETTE	<u>Molecular Genetics Of Scrapie Pathogenesis</u>
33	10	1Z01AI000752-09	PRIOLA, SUZETTE	<u>Molecular Genetics Of Scrapie Pathogenesis</u>
34	10	1P01AG021601-010002	PRUSINER, STANLEY	<u>TRANSGENIC MOUSE MODELS FOR PRION DISEASE TREATMENT</u>
Total: \$12,384,078				<ul style="list-style-type: none"> • \$4,792,766 2005 Prusiner, Stanley B UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA • \$4,778,184 2004 Prusiner, Stanley B UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA • \$2,813,128 2003 Prusiner, Stanley B UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA
35	10	1Z01AI000265-19	RACE, RICHARD	<u>IMMUNOBIOLOGY OF SCRAPIE VIRUS INFECTION</u>
36	10	1Z01AI000265-20	RACE, RICHARD	<u>Immunobiology Of Scrapie Virus Infection</u>
37	10	1Z01AI000265-21	RACE, RICHARD	<u>Immunobiology Of Scrapie Virus Infection</u>
38	10	1R01NS045774-01	RIEK, ROLAND	<u>Structural Investigations of the Prion Protein het-s</u>
Total: \$936,654				<ul style="list-style-type: none"> • \$312,218 2005 Riek, Roland P SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA • \$312,218 2004 Riek, Roland P SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA

				<ul style="list-style-type: none"> \$312,218 2003 Riek, Roland P SALK INSTITUTE FOR BIOLOGICAL STUDIES LA JOLLA, CA
39	10	1R01NS044209-01A2	SINGH, NEENA	<u>PrP-scrapie transport across intestinal & BBB</u>
Total: \$267,750			<ul style="list-style-type: none"> \$267,750 2004 Singh, Neena CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH 	
40	10	1R01NS049173-01A1	SOTO, CLAUDIO	<u>Cyclic Amplification of Prion Protein Misfolding</u>
Total: \$304,834			<ul style="list-style-type: none"> \$304,834 2005 Soto, Claudio A UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
41	10	1F32NS041500-01	STEWART, RICHARD	<u>A NOVEL TOPOLOGICAL FORM OF PRP IN PRION DISEASE</u>
Total: \$83,708			<ul style="list-style-type: none"> \$46,192 2002 Stewart, Richard S VIRRX, INC. ST. LOUIS, MO \$37,516 2000 STEWART, RICHARD S WASHINGTON UNIVERSITY ST. LOUIS, MO 	
42	10	1R01NS045981-01	SY, MAN-SUN	<u>Intercellular transfer of prion in prion disease</u>
Total: \$1,079,895			<ul style="list-style-type: none"> \$370,656 2005 Sy, Mansun M CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$359,859 2004 Sy, Mansun M CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH \$349,380 2003 Sy, Mansun M CASE WESTERN RESERVE UNIVERSITY CLEVELAND, OH 	

Brucella melitensis (strains abortus, melitensis, suis)

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Alphaproteobacteria*, Order *Rhizobiales*, Family *Brucellaceae*.

Publications:

- Baloglu, S., T. E. Toth, G. G. Schurig, N. Sriranganathan, and S. M. Boyle.** 2000. Humoral immune response of BALB/c mice to a vaccinia virus recombinant expressing *Brucella abortus* GroEL does not correlate with protection against a *B. abortus* challenge. *Vet Microbiol* **76**:193-9.
This paper reports the evaluation of a vaccine candidate.
- Bricker, B. J.** 2000. Characterization of the three ribosomal RNA operons *rrnA*, *rrnB*, and *rrnC*, from *Brucella melitensis*. *Gene* **255**:117-26.

- This paper reports the characterization of three gene clusters of the bacterium.
3. **Bricker, B. J., D. R. Ewalt, A. P. MacMillan, G. Foster, and S. Brew.** 2000. Molecular characterization of *Brucella* strains isolated from marine mammals. *J Clin Microbiol* **38**:1258-62.
This paper reports the characterization of new strains of the bacterium.
 4. **Capsel, R. L., S. C. Olsen, N. F. Cheville, and C. O. Thoen.** 2000. Survival of *Brucella abortus* strain RB51 lyophilized and as liquid vaccine under different storage conditions. *Biologicals* **28**:209-15.
This paper reports the evaluation of different storage conditions for freeze-dried brucella vaccine.
 5. **Cook, W. E., E. S. Williams, E. T. Thorne, T. J. Kreeger, G. W. Stout, G. Schurig, L. A. Colby, F. Enright, and P. H. Elzer.** 2000. Safety of *Brucella abortus* strain RB51 in bull elk. *J Wildl Dis* **36**:484-8.
This paper reports the evaluation of a vaccine candidate.
 6. **Edmonds, M., N. Booth, S. Hagius, J. Walker, F. Enright, R. M. Roop, 2nd, and P. Elzer.** 2000. Attenuation and immunogenicity of a *Brucella abortus* htrA cycL double mutant in cattle. *Vet Microbiol* **76**:81-90.
This paper reports the evaluation of a vaccine candidate.
 7. **Ewalt, D. R., and B. J. Bricker.** 2000. Validation of the abbreviated *Brucella* AMOS PCR as a rapid screening method for differentiation of *Brucella abortus* field strain isolates and the vaccine strains, 19 and RB51. *J Clin Microbiol* **38**:3085-6.
This paper reports the evaluation of a PCR-based diagnostic assay.
 8. **Eze, M. O., L. Yuan, R. M. Crawford, C. M. Parnavitana, T. L. Hadfield, A. K. Bhattacharjee, R. L. Warren, and D. L. Hoover.** 2000. Effects of opsonization and gamma interferon on growth of *Brucella melitensis* 16M in mouse peritoneal macrophages in vitro. *Infect Immun* **68**:257-63.
This paper reports the effects of a cytokine and the immune response on growth of the bacterium in macrophages.
 9. **Forbes, L. B., O. Nielsen, L. Measures, and D. R. Ewalt.** 2000. Brucellosis in ringed seals and harp seals from Canada. lforbes@em.agr.ca. *J Wildl Dis* **36**:595-8.
This paper reports the isolation and characterization of strains of the bacterium.
 10. **Gall, D., K. Nielsen, L. Forbes, D. Davis, P. Elzer, S. Olsen, S. Balsevicius, L. Kelly, P. Smith, S. Tan, and D. Joly.** 2000. Validation of the fluorescence polarization assay and comparison to other serological assays for the detection of serum antibodies to *Brucella abortus* in bison. *J Wildl Dis* **36**:469-76.
This paper reports the evaluation of a diagnostic system.
 11. **Gidlewski, T., N. F. Cheville, J. C. Rhyan, L. D. Miller, and M. J. Gilsdorf.** 2000. Experimental *Brucella abortus* induced abortion in a llama: pathologic effects. *Vet Pathol* **37**:77-82.
This paper reports the pathology of llama abortion due to the bacterium.
 12. **Hong, P. C., R. M. Tsolis, and T. A. Ficht.** 2000. Identification of genes required for chronic persistence of *Brucella abortus* in mice. *Infect Immun* **68**:4102-7.
This paper reports the identification of genes required for persistence of the bacterium in mice.

13. **Hornsby, R. L., A. E. Jensen, S. C. Olsen, and C. O. Thoen.** 2000. Selective media for isolation of *Brucella abortus* strain RB51. *Vet Microbiol* **73**:51-60.
This paper reports the development of special media for the isolation of a strain of the bacterium.
14. **Izadjoo, M. J., Y. Polotsky, M. G. Mense, A. K. Bhattacharjee, C. M. Paronavitana, T. L. Hadfield, and D. L. Hoover.** 2000. Impaired control of *Brucella melitensis* infection in Rag1-deficient mice. *Infect Immun* **68**:5314-20.
This paper reports the effects of a gene knock-out in mice on infection with the bacterium.
15. **Kim, J. A., and J. Mayfield.** 2000. Identification of *Brucella abortus* OxyR and its role in control of catalase expression. *J Bacteriol* **182**:5631-3.
This paper reports the identification of a protein of the bacterium.
16. **Kim, J. A., Z. Sha, and J. E. Mayfield.** 2000. Regulation of *Brucella abortus* catalase. *Infect Immun* **68**:3861-6.
This paper reports specifics of the regulation of an enzyme of the bacterium.
17. **Ko, J., and G. A. Splitter.** 2000. *Brucella abortus* tandem repeated ATP-binding proteins, BapA and BapB, homologs of *Haemophilus influenzae* LktB, are not necessary for intracellular survival. *Microb Pathog* **29**:245-53.
This paper reports that two proteins of the bacterium are not necessary for its intracellular survival.
18. **Ko, J., and G. A. Splitter.** 2000. Residual virulence of *Brucella abortus* in the absence of the cytochrome bc(1) complex in a murine model in vitro and in vivo. *Microb Pathog* **29**:191-200.
This paper reports the effect of deletion of a protein complex on virulence of the bacterium.
19. **Kreeger, T. J., M. W. Miller, M. A. Wild, P. H. Elzer, and S. C. Olsen.** 2000. Safety and efficacy of *Brucella abortus* strain RB51 vaccine in captive pregnant elk. *J Wildl Dis* **36**:477-83.
This paper reports the evaluation of a vaccine candidate.
20. **LeVier, K., R. W. Phillips, V. K. Grippe, R. M. Roop, 2nd, and G. C. Walker.** 2000. Similar requirements of a plant symbiont and a mammalian pathogen for prolonged intracellular survival. *Science* **287**:2492-3.
This paper reports the identification of factors necessary for intracellular survival of the bacterium.
21. **Olsen, S. C.** 2000. Responses of adult cattle to vaccination with a reduced dose of *Brucella abortus* strain RB51. *Res Vet Sci* **69**:135-40.
This paper reports the evaluation of a vaccine candidate.
22. **Onate, A., E. Andrews, A. Beltran, G. Eller, G. Schurig, and H. Folch.** 2000. Frequent exposure of mice to crude *Brucella abortus* proteins down-regulates immune response. *J Vet Med B Infect Dis Vet Public Health* **47**:677-82.
This paper reports the effect of proteins of the bacterium on the immune system of mice.
23. **Robertson, G. T., M. E. Kovach, C. A. Allen, T. A. Ficht, and R. M. Roop, 2nd.** 2000. The *Brucella abortus* Lon functions as a generalized stress response protease and is required for wild-type virulence in BALB/c mice. *Mol Microbiol* **35**:577-88.
This paper reports the identification of a virulence factor of the bacterium.

24. **Robertson, G. T., A. Reisenauer, R. Wright, R. B. Jensen, A. Jensen, L. Shapiro, and R. M. Roop, 2nd.** 2000. The *Brucella abortus* CcrM DNA methyltransferase is essential for viability, and its overexpression attenuates intracellular replication in murine macrophages. *J Bacteriol* **182**:3482-9.
This paper reports the identification of an important DNA-modifying enzyme that is essential for the viability of the bacterium.
25. **Samartino, L. E., M. Fort, R. Gregoret, and G. G. Schurig.** 2000. Use of *Brucella abortus* vaccine strain RB51 in pregnant cows after calfhooed vaccination with strain 19 in Argentina. *Prev Vet Med* **45**:193-9.
This paper reports the evaluation of a vaccine candidate.
26. **Sathiyaseelan, J., X. Jiang, and C. L. Baldwin.** 2000. Growth of *Brucella abortus* in macrophages from resistant and susceptible mouse strains. *Clin Exp Immunol* **121**:289-94.
This paper reports the characterization of growth of the bacterium in macrophages from different mouse strains.
27. **Soberon-Mobarak, A., E. Diaz-Aparicio, J. Torres-Armenta, L. G. Adams, and F. Suarez-Guemes.** 2000. Absence of shedding of two *B. abortus* strains in goats after vaccination with live vaccines. *Vaccine* **18**:3018-20.
This paper reports the evaluation of vaccine candidates.
28. **Sreevatsan, S., J. B. Bookout, F. Ringpis, V. S. Perumaalla, T. A. Ficht, L. G. Adams, S. D. Hagius, P. H. Elzer, B. J. Bricker, G. K. Kumar, M. Rajasekhar, S. Isloor, and R. R. Barathur.** 2000. A multiplex approach to molecular detection of *Brucella abortus* and/or *Mycobacterium bovis* infection in cattle. *J Clin Microbiol* **38**:2602-10.
This paper reports the development of a PCR-based diagnostic system.
29. **Uza, F. A., L. Samartino, G. Schurig, A. Carrasco, K. Nielsen, R. F. Cabrera, and H. R. Taddeo.** 2000. Effect of vaccination with *Brucella abortus* strain RB51 on heifers and pregnant cattle. *Vet Res Commun* **24**:143-51.
This paper reports the evaluation of a vaccine candidate.
30. **Vemulapalli, R., S. Cravero, C. L. Calvert, T. E. Toth, N. Sriranganathan, S. M. Boyle, O. L. Rossetti, and G. G. Schurig.** 2000. Characterization of specific immune responses of mice inoculated with recombinant vaccinia virus expressing an 18-kilodalton outer membrane protein of *Brucella abortus*. *Clin Diagn Lab Immunol* **7**:114-8.
This paper reports the evaluation of a vaccine candidate.
31. **Vemulapalli, R., Y. He, S. M. Boyle, N. Sriranganathan, and G. G. Schurig.** 2000. *Brucella abortus* strain RB51 as a vector for heterologous protein expression and induction of specific Th1 type immune responses. *Infect Immun* **68**:3290-6.
This paper reports the evaluation of a vaccine candidate.
32. **Vemulapalli, R., Y. He, L. S. Buccolo, S. M. Boyle, N. Sriranganathan, and G. G. Schurig.** 2000. Complementation of *Brucella abortus* RB51 with a functional *wboA* gene results in O-antigen synthesis and enhanced vaccine efficacy but no change in rough phenotype and attenuation. *Infect Immun* **68**:3927-32.
This paper reports the evaluation of a vaccine candidate.

33. **Vemulapalli, R., Y. He, S. Cravero, N. Sriranganathan, S. M. Boyle, and G. G. Schurig.** 2000. Overexpression of protective antigen as a novel approach to enhance vaccine efficacy of *Brucella abortus* strain RB51. *Infect Immun* **68**:3286-9.
This paper reports the evaluation of a vaccine candidate.
34. **Adone, R., F. Ciuchini, and S. Olsen.** 2001. Field validation of the use of RB51 as antigen in a complement fixation test to identify calves vaccinated with *Brucella abortus* RB51. *Clin Diagn Lab Immunol* **8**:385-7.
This paper reports the evaluation of a diagnostic system.
35. **Barthel, R., J. Feng, J. A. Piedrahita, D. N. McMurray, J. W. Templeton, and L. G. Adams.** 2001. Stable transfection of the bovine NRAMP1 gene into murine RAW264.7 cells: effect on *Brucella abortus* survival. *Infect Immun* **69**:3110-9.
This paper reports a bovine protein as a protective factor against infection with the bacterium.
36. **Edmonds, M. D., L. E. Samartino, P. G. Hoyt, S. D. Hagijs, J. V. Walker, F. M. Enright, G. G. Schurig, and P. Elzer.** 2001. Oral vaccination of sexually mature pigs with *Brucella abortus* vaccine strain RB51. *Am J Vet Res* **62**:1328-31.
This paper reports the evaluation of a vaccine candidate.
37. **Endley, S., D. McMurray, and T. A. Ficht.** 2001. Interruption of the *cydB* locus in *Brucella abortus* attenuates intracellular survival and virulence in the mouse model of infection. *J Bacteriol* **183**:2454-62.
This paper reports the identification of a protein that is important for intracellular survival of the bacterium and its virulence.
38. **Fernandez-Prada, C. M., M. Nikolich, R. Vemulapalli, N. Sriranganathan, S. M. Boyle, G. G. Schurig, T. L. Hadfield, and D. L. Hoover.** 2001. Deletion of *wboA* enhances activation of the lectin pathway of complement in *Brucella abortus* and *Brucella melitensis*. *Infect Immun* **69**:4407-16.
This paper reports the importance of a protein of the bacterium for one of its metabolic pathways.
39. **Gilsdorf, M. J., C. O. Thoen, R. M. Temple, T. Gidlewski, D. Ewalt, B. Martin, and S. B. Henneger.** 2001. Experimental exposure of llamas (*Lama glama*) to *Brucella abortus*: humoral antibody response. *Vet Microbiol* **81**:85-91.
This paper reports the antibody response of llamas to infection with the bacterium.
40. **He, Y., R. Vemulapalli, A. Zeytun, and G. G. Schurig.** 2001. Induction of specific cytotoxic lymphocytes in mice vaccinated with *Brucella abortus* RB51. *Infect Immun* **69**:5502-8.
This paper reports the evaluation of a vaccine candidate.
41. **Lee, I. K., S. C. Olsen, and C. A. Bolin.** 2001. Effects of exogenous recombinant interleukin-12 on immune responses and protection against *Brucella abortus* in a murine model. *Can J Vet Res* **65**:223-8.
This paper reports the evaluation of a treatment regimen.
42. **Mense, M. G., L. L. Van De Verg, A. K. Bhattacharjee, J. L. Garrett, J. A. Hart, L. E. Lindler, T. L. Hadfield, and D. L. Hoover.** 2001. Bacteriologic and histologic features in mice after intranasal inoculation of *Brucella melitensis*. *Am J Vet Res* **62**:398-405.

- This paper reports the pathology of mice after infection with the bacterium.
43. **Murphy, E. A., M. Parent, J. Sathiyaseelan, X. Jiang, and C. L. Baldwin.** 2001. Immune control of *Brucella abortus* 2308 infections in BALB/c mice. *FEMS Immunol Med Microbiol* **32**:85-8.
- This paper reports the immune response of a mouse strain to a strain of the bacterium.
44. **Redkar, R., S. Rose, B. Bricker, and V. DeVecchio.** 2001. Real-time detection of *Brucella abortus*, *Brucella melitensis* and *Brucella suis*. *Mol Cell Probes* **15**:43-52.
- This paper reports the development of a PCR-based diagnostic system.
45. **Rhyan, J. C., T. Gidlewski, T. J. Roffe, K. Aune, L. M. Philo, and D. R. Ewalt.** 2001. Pathology of brucellosis in bison from Yellowstone National Park. *J Wildl Dis* **37**:101-9.
- This paper reports the pathology of bison after infection with the bacterium.
46. **Roop, R. M., 2nd, R. W. Phillips, S. Hagijs, J. V. Walker, N. J. Booth, W. T. Fulton, M. D. Edmonds, and P. H. Elzer.** 2001. Re-examination of the role of the *Brucella melitensis* HtrA stress response protease in virulence in pregnant goats. *Vet Microbiol* **82**:91-5.
- This paper reports the evaluation of the important of a protein for virulence of the bacterium in goats.
47. **Scharf, O., I. Agranovich, K. Lee, N. L. Eller, L. Levy, J. Inman, D. E. Scott, and B. Golding.** 2001. Ontogeny of Th1 memory responses against a *Brucella abortus* conjugate. *Infect Immun* **69**:5417-22.
- This paper reports the evaluation of a vaccine candidate.
48. **Zhou, H., A. J. Buitenhuis, S. Weigend, and S. J. Lamont.** 2001. Candidate gene promoter polymorphisms and antibody response kinetics in chickens: interferon-gamma, interleukin-2, and immunoglobulin light chain. *Poult Sci* **80**:1679-89.
- This paper reports the immune response of chickens to infection with the bacterium.
49. **Bae, J. E., G. G. Schurig, and T. E. Toth.** 2002. Mice immune responses to *Brucella abortus* heat shock proteins. Use of baculovirus recombinant-expressing whole insect cells, purified *Brucella abortus* recombinant proteins, and a vaccinia virus recombinant as immunogens. *Vet Microbiol* **88**:189-202.
- This paper reports the evaluation of a vaccine candidate.
50. **Baldwin, C. L., and M. Parent.** 2002. Fundamentals of host immune response against *Brucella abortus*: what the mouse model has revealed about control of infection. *Vet Microbiol* **90**:367-82.
- This paper reports the characteristics of the immune response of mice to infection with the bacterium.
51. **Bardenstein, S., M. Mandelboim, T. A. Ficht, M. Baum, and M. Banai.** 2002. Identification of the *Brucella melitensis* vaccine strain Rev.1 in animals and humans in Israel by PCR analysis of the PstI site polymorphism of its omp2 gene. *J Clin Microbiol* **40**:1475-80.
- This paper reports the identification of a strain of the bacterium with a PCR-based diagnostic system.
52. **Bhattacharjee, A. K., L. Van de Verg, M. J. Izadjoo, L. Yuan, T. L. Hadfield, W. D. Zollinger, and D. L. Hoover.** 2002. Protection of mice against brucellosis by intranasal

- immunization with *Brucella melitensis* lipopolysaccharide as a noncovalent complex with *Neisseria meningitidis* group B outer membrane protein. *Infect Immun* **70**:3324-9.
This paper reports the evaluation of a vaccine candidate.
53. **Chirgwin, S. R., P. H. Elzer, S. U. Coleman, J. M. Nowling, S. D. Hagijs, M. D. Edmonds, and T. R. Klei.** 2002. Infection outcome and cytokine gene expression in *Brugia pahangi*-infected gerbils (*Meriones unguiculatus*) sensitized with *Brucella abortus*. *Infect Immun* **70**:5938-45.
This paper reports the cytokine response of filarial-infected gerbils sensitized with the bacterium.
54. **Colby, L. A., G. G. Schurig, and P. H. Elzer.** 2002. An indirect ELISA to detect the serologic response of elk (*Cervus elaphus nelsoni*) inoculated with *Brucella abortus* strain RB51. *J Wildl Dis* **38**:752-9.
This paper reports a detection method.
55. **Cook, W. E., E. S. Williams, E. T. Thorne, T. J. Kreeger, G. Stout, K. Bardsley, H. Edwards, G. Schurig, L. A. Colby, F. Enright, and P. H. Elzer.** 2002. *Brucella abortus* strain RB51 vaccination in elk. I. Efficacy of reduced dosage. *J Wildl Dis* **38**:18-26.
This paper reports the evaluation of a vaccine candidate.
56. **DelVecchio, V. G., V. Kapatral, R. J. Redkar, G. Patra, C. Mujer, T. Los, N. Ivanova, I. Anderson, A. Bhattacharyya, A. Lykidis, G. Reznik, L. Jablonski, N. Larsen, M. D'Souza, A. Bernal, M. Mazur, E. Goltsman, E. Selkov, P. H. Elzer, S. Hagijs, D. O'Callaghan, J. J. Letesson, R. Haselkorn, N. Kyrpides, and R. Overbeek.** 2002. The genome sequence of the facultative intracellular pathogen *Brucella melitensis*. *Proc Natl Acad Sci U S A* **99**:443-8.
This paper reports the genomic sequence of the bacterium.
57. **Edmonds, M. D., A. Cloeckert, and P. H. Elzer.** 2002. *Brucella* species lacking the major outer membrane protein *Omp25* are attenuated in mice and protect against *Brucella melitensis* and *Brucella ovis*. *Vet Microbiol* **88**:205-21.
This paper reports the evaluation of a vaccine candidate.
58. **Edmonds, M. D., A. Cloeckert, S. D. Hagijs, L. E. Samartino, W. T. Fulton, J. V. Walker, F. M. Enright, N. J. Booth, and P. H. Elzer.** 2002. Pathogenicity and protective activity in pregnant goats of a *Brucella melitensis* *Deltaomp25* deletion mutant. *Res Vet Sci* **72**:235-9.
This paper reports the evaluation of a vaccine candidate.
59. **Elzer, P. H., S. D. Hagijs, D. S. Davis, V. G. DelVecchio, and F. M. Enright.** 2002. Characterization of the caprine model for ruminant brucellosis. *Vet Microbiol* **90**:425-31.
This paper reports a goat model for brucellosis.
60. **Eschenbrenner, M., M. A. Wagner, T. A. Horn, J. A. Kraycer, C. V. Mujer, S. Hagijs, P. Elzer, and V. G. DelVecchio.** 2002. Comparative proteome analysis of *Brucella melitensis* vaccine strain Rev 1 and a virulent strain, 16M. *J Bacteriol* **184**:4962-70.
This paper reports the proteomes of different strains of the bacterium.
61. **He, Y., R. Vemulapalli, and G. G. Schurig.** 2002. Recombinant *Ochrobactrum anthropi* expressing *Brucella abortus* Cu,Zn superoxide dismutase protects mice against *B. abortus*

infection only after switching of immune responses to Th1 type. *Infect Immun* **70**:2535-43.

This paper reports the evaluation of a vaccine candidate.

62. **Ko, J., A. Gendron-Fitzpatrick, T. A. Ficht, and G. A. Splitter.** 2002. Virulence criteria for *Brucella abortus* strains as determined by interferon regulatory factor 1-deficient mice. *Infect Immun* **70**:7004-12.

This paper reports specifics of the immune response to the bacterium.

63. **Ko, J., A. Gendron-Fitzpatrick, and G. A. Splitter.** 2002. Susceptibility of IFN regulatory factor-1 and IFN consensus sequence binding protein-deficient mice to brucellosis. *J Immunol* **168**:2433-40.

This paper reports specifics of the immune response to the bacterium.

64. **Kreeger, T. J., W. E. Cook, W. H. Edwards, P. H. Elzer, and S. C. Olsen.** 2002. *Brucella abortus* strain RB51 vaccination in elk. II. Failure of high dosage to prevent abortion. *J Wildl Dis* **38**:27-31.

This paper reports the evaluation of a vaccine candidate.

65. **Kreeger, T. J., T. J. DeLiberto, S. C. Olsen, W. H. Edwards, and W. E. Cook.** 2002. Safety of *Brucella abortus* strain RB51 vaccine in non-target ungulates and coyotes. *J Wildl Dis* **38**:552-7.

This paper reports the evaluation of a vaccine candidate.

66. **Mujer, C. V., M. A. Wagner, M. Eschenbrenner, T. Horn, J. A. Kraycer, R. Redkar, S. Hagius, P. Elzer, and V. G. Delvecchio.** 2002. Global analysis of *Brucella melitensis* proteomes. *Ann N Y Acad Sci* **969**:97-101.

This paper reports proteomes of strains of the bacterium.

67. **Murphy, E., G. T. Robertson, M. Parent, S. D. Hagius, R. M. Roop, 2nd, P. H. Elzer, and C. L. Baldwin.** 2002. Major histocompatibility complex class I and II expression on macrophages containing a virulent strain of *Brucella abortus* measured using green fluorescent protein-expressing brucellae and flow cytometry. *FEMS Immunol Med Microbiol* **33**:191-200.

This paper reports the immunological response of macrophages to infection with the bacterium.

68. **Olsen, S. C., T. J. Kreeger, and M. V. Palmer.** 2002. Immune responses of elk to vaccination with *Brucella abortus* strain RB51. *J Wildl Dis* **38**:746-51.

This paper reports the evaluation of a vaccine candidate.

69. **Olsen, S. C., T. J. Kreeger, and W. Schultz.** 2002. Immune responses of bison to ballistic or hand vaccination with *Brucella abortus* strain RB51. *J Wildl Dis* **38**:738-45.

This paper reports the evaluation of a vaccine candidate.

70. **Parent, M. A., B. H. Bellaire, E. A. Murphy, R. M. Roop, 2nd, P. H. Elzer, and C. L. Baldwin.** 2002. *Brucella abortus* siderophore 2,3-dihydroxybenzoic acid (DHBA) facilitates intracellular survival of the bacteria. *Microb Pathog* **32**:239-48.

This paper reports the identification of a virulence factor of the bacterium.

71. **Pasquali, P., R. Adone, L. C. Gasbarre, C. Pistoia, and F. Ciuchini.** 2002. Effect of exogenous interleukin-18 (IL-18) and IL-12 in the course of *Brucella abortus* 2308 infection in mice. *Clin Diagn Lab Immunol* **9**:491-2.

This paper reports a treatment regimen.

72. **Rosinha, G. M., D. A. Freitas, A. Miyoshi, V. Azevedo, E. Campos, S. L. Cravero, O. Rossetti, G. Splitter, and S. C. Oliveira.** 2002. Identification and characterization of a *Brucella abortus* ATP-binding cassette transporter homolog to *Rhizobium meliloti* ExsA and its role in virulence and protection in mice. *Infect Immun* **70**:5036-44.
This paper reports the characterization of a virulence factor of the bacterium.
73. **Sun, Y. H., A. B. den Hartigh, R. L. Santos, L. G. Adams, and R. M. Tsois.** 2002. virB-Mediated survival of *Brucella abortus* in mice and macrophages is independent of a functional inducible nitric oxide synthase or NADPH oxidase in macrophages. *Infect Immun* **70**:4826-32.
This paper reports characteristics of the intracellular survival of the bacterium.
74. **Wagner, M. A., M. Eschenbrenner, T. A. Horn, J. A. Kraycer, C. V. Mujer, S. Hagius, P. Elzer, and V. G. DelVecchio.** 2002. Global analysis of the *Brucella melitensis* proteome: Identification of proteins expressed in laboratory-grown culture. *Proteomics* **2**:1047-60.
This paper reports the analysis of the proteome of the bacterium.
75. **Yokum, T. S., R. P. Hammer, M. L. McLaughlin, and P. H. Elzer.** 2002. Peptides with indirect in vivo activity against an intracellular pathogen: selective lysis of infected macrophages. *J Pept Res* **59**:9-17.
This paper reports the development of a potential inhibitor.
76. **Bellaire, B. H., P. H. Elzer, C. L. Baldwin, and R. M. Roop, 2nd.** 2003. Production of the siderophore 2,3-dihydroxybenzoic acid is required for wild-type growth of *Brucella abortus* in the presence of erythritol under low-iron conditions in vitro. *Infect Immun* **71**:2927-832.
This paper reports the production of a virulence factor of the bacterium.
77. **Bellaire, B. H., P. H. Elzer, S. Hagius, J. Walker, C. L. Baldwin, and R. M. Roop, 2nd.** 2003. Genetic organization and iron-responsive regulation of the *Brucella abortus* 2,3-dihydroxybenzoic acid biosynthesis operon, a cluster of genes required for wild-type virulence in pregnant cattle. *Infect Immun* **71**:1794-803.
This paper reports the regulation of the production of a virulence factor of the bacterium.
78. **Bricker, B. J., D. R. Ewalt, and S. M. Halling.** 2003. *Brucella* 'HOOF-Prints': strain typing by multi-locus analysis of variable number tandem repeats (VNTRs). *BMC Microbiol* **3**:15.
This paper reports a method to differentiate strains of the bacterium.
79. **Bricker, B. J., D. R. Ewalt, S. C. Olsen, and A. E. Jensen.** 2003. Evaluation of the *Brucella abortus* species-specific polymerase chain reaction assay, an improved version of the *Brucella* AMOS polymerase chain reaction assay for cattle. *J Vet Diagn Invest* **15**:374-8.
This paper reports the evaluation of a detection system.
80. **Contreras-Rodriguez, A., B. Ramirez-Zavala, A. Contreras, G. G. Schurig, N. Sriranganathan, and A. Lopez-Merino.** 2003. Purification and characterization of an immunogenic aminopeptidase of *Brucella melitensis*. *Infect Immun* **71**:5238-44.
This paper reports the isolation and characterization of an immunogen of the bacterium.
81. **Eskra, L., A. Mathison, and G. Splitter.** 2003. Microarray analysis of mRNA levels from RAW264.7 macrophages infected with *Brucella abortus*. *Infect Immun* **71**:1125-33.

- This paper reports the transcriptional response of macrophages to infection with the bacterium.
82. **Fernandez-Prada, C. M., E. B. Zelazowska, M. Nikolich, T. L. Hadfield, R. M. Roop, 2nd, G. L. Robertson, and D. L. Hoover.** 2003. Interactions between *Brucella melitensis* and human phagocytes: bacterial surface O-Polysaccharide inhibits phagocytosis, bacterial killing, and subsequent host cell apoptosis. *Infect Immun* **71**:2110-9.
This paper reports the identification of a virulence factor of the bacterium.
83. **Fosgate, G. T., A. A. Adesiyun, D. W. Hird, W. O. Johnson, S. K. Hietala, G. G. Schurig, J. Ryan, and M. D. Diptee.** 2003. Evaluation of brucellosis RB51 vaccine for domestic water buffalo (*Bubalus bubalis*) in Trinidad. *Prev Vet Med* **58**:211-25.
This paper reports the evaluation of a vaccine candidate.
84. **Olsen, S. C., and S. D. Holland.** 2003. Safety of revaccination of pregnant bison with *Brucella abortus* strain RB51. *J Wildl Dis* **39**:824-9.
This paper reports the evaluation of a vaccine candidate.
85. **Olsen, S. C., A. E. Jensen, W. C. Stoffregen, and M. V. Palmer.** 2003. Efficacy of calfhoo vaccination with *Brucella abortus* strain RB51 in protecting bison against brucellosis. *Res Vet Sci* **74**:17-22.
This paper reports the evaluation of a vaccine candidate.
86. **Pasnik, D. J., R. Vemulapalli, S. A. Smith, and G. G. Schurig.** 2003. A recombinant vaccine expressing a mammalian *Mycobacterium* sp. antigen is immunostimulatory but not protective in striped bass. *Vet Immunol Immunopathol* **95**:43-52.
This paper reports the development of a mycobacterium vaccine based on the bacterium.
87. **Alcantara, R. B., R. D. Read, M. W. Valderas, T. D. Brown, and R. M. Roop, 2nd.** 2004. Intact purine biosynthesis pathways are required for wild-type virulence of *Brucella abortus* 2308 in the BALB/c mouse model. *Infect Immun* **72**:4911-7.
This paper reports a metabolic pathway of the bacterium that is important for virulence.
88. **Campos, M. A., G. M. Rosinha, I. C. Almeida, X. S. Salgueiro, B. W. Jarvis, G. A. Splitter, N. Qureshi, O. Bruna-Romero, R. T. Gazzinelli, and S. C. Oliveira.** 2004. Role of Toll-like receptor 4 in induction of cell-mediated immunity and resistance to *Brucella abortus* infection in mice. *Infect Immun* **72**:176-86.
This paper reports specifics on the response of the innate immune system to infection with the bacterium.
89. **Canavessi, A. M., J. Harms, N. de Leon Gatti, and G. A. Splitter.** 2004. The role of integrase/recombinase xerD and monofunctional biosynthesis peptidoglycan transglycosylase genes in the pathogenicity of *Brucella abortus* infection in vitro and in vivo. *Microb Pathog* **37**:241-51.
This paper reports specifics of the peptidoglycan synthesis of the bacterium.
90. **den Hartigh, A. B., Y. H. Sun, D. Sondervan, N. Heuvelmans, M. O. Reinders, T. A. Ficht, and R. M. Tsolis.** 2004. Differential requirements for VirB1 and VirB2 during *Brucella abortus* infection. *Infect Immun* **72**:5143-9.
This paper reports the role of virulence factors of the bacterium.
91. **Ferguson, G. P., A. Datta, J. Baumgartner, R. M. Roop, 2nd, R. W. Carlson, and G. C. Walker.** 2004. Similarity to peroxisomal-membrane protein family reveals that

Sinorhizobium and Brucella BacA affect lipid-A fatty acids. Proc Natl Acad Sci U S A **101**:5012-7.

This paper reports the similarity of a virulence factor of the bacterium to that of a related bacterium.

92. **Gee, J. E., B. K. De, P. N. Levett, A. M. Whitney, R. T. Novak, and T. Popovic.** 2004. Use of 16S rRNA gene sequencing for rapid confirmatory identification of Brucella isolates. J Clin Microbiol **42**:3649-54.

This paper reports a detection method.

93. **Izadjoo, M. J., A. K. Bhattacharjee, C. M. Parnavitana, T. L. Hadfield, and D. L. Hoover.** 2004. Oral vaccination with Brucella melitensis WR201 protects mice against intranasal challenge with virulent Brucella melitensis 16M. Infect Immun **72**:4031-9.

This paper reports the evaluation of a vaccine candidate.

94. **Olsen, S. C., J. Rhyan, T. Gidlewski, J. Goff, and W. C. Stoffregen.** 2004. Safety of Brucella abortus strain RB51 in black bears. J Wildl Dis **40**:429-33.

This paper reports the evaluation of a vaccine candidate.

95. **Pei, J., and T. A. Ficht.** 2004. Brucella abortus rough mutants are cytopathic for macrophages in culture. Infect Immun **72**:440-50.

This paper reports the effect of certain strains of the bacterium on cultured macrophages.

96. **Probert, W. S., K. N. Schrader, N. Y. Khuong, S. L. Bystrom, and M. H. Graves.** 2004. Real-time multiplex PCR assay for detection of Brucella spp., B. abortus, and B. melitensis. J Clin Microbiol **42**:1290-3.

This paper reports the evaluation of a detection system.

97. **Rajashekara, G., J. D. Glasner, D. A. Glover, and G. A. Splitter.** 2004. Comparative whole-genome hybridization reveals genomic islands in Brucella species. J Bacteriol **186**:5040-51.

This paper reports the sequence comparison of genomes of strains of the bacterium.

98. **Covert, J., L. Eskra, and G. Splitter.** 2005. Isolation of Brucella abortus total RNA from B. abortus-infected murine RAW macrophages. J Microbiol Methods **60**:383-93.

This paper reports the isolation of all RNAs from the bacterium after infection of macrophages.

NIH Grants:

1	100	1R15AI047297-01	ENNIS, D	<u>ANALYSIS OF DNA REPAIR AND SOS REGULATION IN BRUCELLA</u>
Total: \$117,628			<ul style="list-style-type: none"> \$117,628 2000 ENNIS, D G UNIVERSITY OF LOUISIANA AT LAFAYETTE LAFAYETTE, LA 	
2	100	1R43AI056745-01A1	FERGUSON, STACY	<u>Development of Novel Brucella Vaccine Candidates</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2004 Ferguson, Stacy E MACROGENICS, INC. ROCKVILLE, 	

			MD	
3	100	2R01AI048496-04	FICHT, THOMAS	<u>Improved Brucella Vaccine Strains</u>
Total: \$1,222,200 *			<ul style="list-style-type: none"> \$363,750 2005 Ficht, Thomas A TEXAS AGRICULTURAL EXPERIMENT STATION COLLEGE STATION, TX \$291,000 2003 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX \$276,450 2002 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX \$291,000 2001 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX 	
4	100	1R21AI063373-01A1	GHOSH, SANKAR	<u>Subversion of innate immune responses by Brucella</u>
5	100	1R21AI057875-01	HE, YONGQUN	<u>GENE EXPRESSION IN BRUCELLA-INFECTED MACROPHAGES</u>
Total: \$601,167			<ul style="list-style-type: none"> \$301,167 2005 He, Yongqun VIRGINIA POLYTECHNIC INST AND ST UNIV BLACKSBURG, VA \$300,000 2004 He, Yongqun VIRGINIA POLYTECHNIC INST AND ST UNIV BLACKSBURG, VA 	
6	100	1R21AI057952-01A1	HIGH, KEVIN	<u>Brucella, Aqing and Role of IL-17 in Host Defense</u>
Total: \$530,855			<ul style="list-style-type: none"> \$259,430 2005 High, Kevin P KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC \$271,425 2004 High, Kevin P ION TECHNOLOGIES, INC. WINSTON-SALEM, NC 	
7	100	1R01AI048490-01	SPLITTER, GARY	<u>BRUCELLA VACCINE FOR BIOTERRORISM</u>
Total: \$1,277,000			<ul style="list-style-type: none"> \$288,000 2003 Splitter, Gary A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$288,000 2002 Splitter, Gary A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$413,000 2001 Splitter, Gary A UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$288,000 2000 SPLITTER, GARY A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
8	100	2R21AI048490-05	SPLITTER, GARY	<u>Brucella Vaccine for Bioterrorism</u>
Total: \$285,052			<ul style="list-style-type: none"> \$285,052 2004 Splitter, Gary A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
9	88	1F32AI056965-01	BELLAIRE, BRYAN	<u>Brucella abortus alters trafficking in human monocytes</u>

Total: \$95,348			<ul style="list-style-type: none"> • \$48,928 2004 Bellaire, Bryan H LOUISIANA STATE UNIV HSC SHREVEPORT SHREVEPORT, LA • \$46,420 2003 Bellaire, Bryan H LOUISIANA STATE UNIV HSC SHREVEPORT SHREVEPORT, LA 	
10	88	1F31AI054325-01A1	GARCIA, DANIEL	<u>Virulence regulation in Brucella by LuxR quorum sensor</u>
Total: \$78,640			<ul style="list-style-type: none"> • \$39,722 2004 Garcia, Daniel L UNIVERSITY OF WISCONSIN MADISON MADISON, WI • \$38,918 2003 Garcia, Daniel L UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
11	73	1R21AI055964-01	ENNIS, DON	<u>Attenuation of Brucella Using Dominant Repair Mutants</u>
Total: \$470,935			<ul style="list-style-type: none"> • \$236,163 2004 Ennis, Don G UNIVERSITY OF LOUISIANA AT LAFAYETTE LAFAYETTE, LA • \$234,772 2003 Ennis, Don G UNIVERSITY OF LOUISIANA AT LAFAYETTE LAFAYETTE, LA 	
12	73	1F31GM067386-01	SOTO-BONILLA, BRENDA	<u>Falgellar gene homologues in Brucella melitensis</u>
Total: \$83,416			<ul style="list-style-type: none"> • \$43,016 2004 Sotobonilla, Brenda L UNIVERSITY OF WISCONSIN MADISON MADISON, WI • \$40,400 2002 Soto-Bonilla, Brenda L UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
13	58	1R01AI048499-01	ROOP, ROY	<u>BRUCELLA STATIONARY PHASE GENE EXPRESSION AND VIRULENCE</u>
Total: \$1,244,197			<ul style="list-style-type: none"> • \$279,000 2003 Roop, Roy M EAST CAROLINA UNIVERSITY GREENVILLE, NC • \$279,000 2002 Roop, Roy M EAST CAROLINA UNIVERSITY GREENVILLE, NC • \$379,191 2001 Roop, Roy M EAST CAROLINA UNIVERSITY GREENVILLE, NC • \$1,257 2000 ROOP, ROY M LOUISIANA STATE UNIV HSC SHREVEPORT SHREVEPORT, LA • \$305,749 2000 ROOP, ROY M EAST CAROLINA UNIVERSITY GREENVILLE, NC 	
14	58	2R21AI048499-06	ROOP, ROY	<u>Brucella Stationary Phase Gene Expression and Virulence</u>
Total: \$377,145			<ul style="list-style-type: none"> • \$377,145 2004 Roop, Roy M EAST CAROLINA UNIVERSITY GREENVILLE, NC 	
15	58	1R01AI050553-01	TSOLIS, RENEE	<u>Characterization of the Brucella abortus virB locus</u>

Total: \$1,218,500			<ul style="list-style-type: none"> • \$200,000 2004 Tsohis, Renee M TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$254,625 2004 Tsohis, Renee M TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$254,625 2003 Tsohis, Renee M TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$254,625 2002 Tsohis, Renee M TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$254,625 2001 Tsohis, Renee M TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX 	
16	44	1U54AI057156-010005	ADAMS, LESLIE	<u>Development and Evaluation of Human Brucellosis Vaccines</u>
Total: \$27,834,107			<ul style="list-style-type: none"> • \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
17	44	1Z01BQ004032-01	GOLDING, BASIL	<u>Active and Passive Immunity Against Emergent Infectious</u>
18	44	1Z01AI000035-27	INMAN, JOHN	<u>Design And Synthesis Of Immunomodulators And Vaccine Con</u>
19	44	1R21AI065739-01	TSOLIS, RENEE	<u>Identification of Brucella Type IV Effectors</u>
20	29	1R01AI056047-01	COLLINS, GREG	<u>Sensitive Diagnosis of Biowarfare Agents on a Microchip</u>
Total: \$1,154,639			<ul style="list-style-type: none"> • \$456,719 2005 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC • \$455,617 2004 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC • \$242,303 2003 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC 	
21	29	1R01AI048496-01A1	FICHT, THOMAS	<u>Improved Brucella Vaccine Strains</u>
Total: \$1,222,200 *			<ul style="list-style-type: none"> • \$363,750 2005 Ficht, Thomas A TEXAS AGRICULTURAL EXPERIMENT STATION COLLEGE STATION, TX • \$291,000 2003 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX • \$276,450 2002 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX • \$291,000 2001 Ficht, Thomas A TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX 	
22	29	1Z01BK003004-08	GOLDING, H	<u>Evaluation of new carriers and adjuvants for HIV-1 vaccines.</u>

23	29	1Z01BK003004-09	GOLDING, H	<u>Evaluation of new carriers/adjuvants for HIV-1 vaccines</u>
24	29	1Z01BK003004-10	GOLDING, H	<u>Evaluation of new carriers and adjuvants for HIV-1 vacci</u>
25	29	1Z01AI000035-25	INMAN, JOHN	<u>DESIGN AND SYNTHESIS OF IMMUNOMODULATORS AND VACCINE CONSTRUCTS</u>
26	29	1Z01AI000035-26	INMAN, JOHN	<u>Design/Synthesis: Immunomodulators And Vaccine Constructs</u>
27	29	1U01AI049036-01	PAULSEN, IAN	<u>COMPLETE GENOME SEQUENCING OF BRUCELLA SUIS</u>
Total: \$957,964			<ul style="list-style-type: none"> \$957,964 2000 PAULSEN, IAN T INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD 	
28	29	1R43AI049658-01	SZUMANSKI, MARIA	<u>An Efficient Bacterial Vector-Based Tuberculosis Vaccine</u>
Total: \$102,900			<ul style="list-style-type: none"> \$102,900 2001 Szumanski, Maria B VETERINARY TECHNOLOGIES CORPORATION BLACKSBURG, VA 	
29	29	1R21AI053431-01A1	VEMULAPALLI, RAMESH	<u>B.abortus-based vaccine against viral hemorrhagic fevers</u>
Total: \$532,000			<ul style="list-style-type: none"> \$266,000 2004 Vemulapalli, Ramesh PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$266,000 2003 Vemulapalli, Ramesh PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN 	
30	15	1R21AI063324-01	JAFFE, EILEEN	<u>Hexameric PBGS as a Bioterrorism Defense</u>
Total: \$338,500			<ul style="list-style-type: none"> \$338,500 2005 Jaffe, Eileen K INSTITUTE FOR CANCER RESEARCH PHILADELPHIA, PA 	

Burkholderia mallei

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Betaproteobacteria*, Order

Burkholderiales, Family *Burkholderiaceae*.

Publications:

1. **Fritz, D. L., P. Vogel, D. R. Brown, D. Deshazer, and D. M. Waag.** 2000. Mouse model of sublethal and lethal intraperitoneal glanders (*Burkholderia mallei*). *Vet Pathol* **37**:626-36.
This paper reports the establishment of a mouse model for glanders, and reports the pathology associated with the disease.
2. **Katz, J., R. Dewald, and J. Nicholson.** 2000. Procedurally similar competitive immunoassay systems for the serodiagnosis of *Babesia equi*, *Babesia caballi*, *Trypanosoma equiperdum*, and *Burkholderia mallei* infection in horses. *J Vet Diagn Invest* **12**:46-50.
This paper reports the establishment of a competitive ELISA for the serodiagnosis of *Burkholderia mallei*.
3. **DeShazer, D., D. M. Waag, D. L. Fritz, and D. E. Woods.** 2001. Identification of a *Burkholderia mallei* polysaccharide gene cluster by subtractive hybridization and demonstration that the encoded capsule is an essential virulence determinant. *Microb Pathog* **30**:253-69.
This paper describes the identification of virulence factors of *Burkholderia mallei*.
4. **Heine, H. S., M. J. England, D. M. Waag, and W. R. Byrne.** 2001. In vitro antibiotic susceptibilities of *Burkholderia mallei* (causative agent of glanders) determined by broth microdilution and E-test. *Antimicrob Agents Chemother* **45**:2119-21.
This paper reports the antibiotic resistance profile of several strains of *Burkholderia mallei*.
5. **Amemiya, K., G. V. Bush, D. DeShazer, and D. M. Waag.** 2002. Nonviable *Burkholderia mallei* induces a mixed Th1- and Th2-like cytokine response in BALB/c mice. *Infect Immun* **70**:2319-25.
This paper reports the evaluation of nonviable cell preparations of *Burkholderia mallei* as potential vaccine candidates in a BALB/c murine model (incl. heat-killed preparation, an irradiation-inactivated preparation, and a preparation of a capsule-negative mutant strain which had been irradiation inactivated).
6. **Woods, D. E., J. A. Jeddloh, D. L. Fritz, and D. DeShazer.** 2002. *Burkholderia thailandensis* E125 harbors a temperate bacteriophage specific for *Burkholderia mallei*. *J Bacteriol* **184**:4003-17.
This paper reports the identification of a bacteriophage in an agent related to *Burkholderia mallei*, which can form plaques on *Burkholderia mallei* but not on any other bacterial species tested.
7. **Gee, J. E., C. T. Sacchi, M. B. Glass, B. K. De, R. S. Weyant, P. N. Levett, A. M. Whitney, A. R. Hoffmaster, and T. Popovic.** 2003. Use of 16S rRNA gene sequencing for rapid identification and differentiation of *Burkholderia pseudomallei* and *B. mallei*. *J Clin Microbiol* **41**:4647-54.
This paper reports the evaluation of the use of 16S rRNA gene sequencing to rapidly identify these two bacterial species and differentiate them from each other as well as from closely related species and genera.
8. **Lopez, J., J. Copps, C. Wilhelmsen, R. Moore, J. Kubay, M. St-Jacques, S. Halayko, C. Kranendonk, S. Toback, D. DeShazer, D. L. Fritz, M. Tom, and D. E. Woods.** 2003. Characterization of experimental equine glanders. *Microbes Infect* **5**:1125-31.

- This paper reports the findings of horses infected with the bacterium.
9. **Moore, R. A., S. Reckseidler-Zenteno, H. Kim, W. Nierman, Y. Yu, A. Tuanyok, J. Warawa, D. DeShazer, and D. E. Woods.** 2004. Contribution of gene loss to the pathogenic evolution of *Burkholderia pseudomallei* and *Burkholderia mallei*. *Infect Immun* **72**:4172-87.
This paper reports that the ability to metabolize arabinose reduces the virulence of *B. pseudomallei* and that the genes encoding arabinose assimilation may be considered antivirulence genes.
 10. **Nierman, W. C., D. DeShazer, H. S. Kim, H. Tettelin, K. E. Nelson, T. Feldblyum, R. L. Ulrich, C. M. Ronning, L. M. Brinkac, S. C. Daugherty, T. D. Davidsen, R. T. Deboy, G. Dimitrov, R. J. Dodson, A. S. Durkin, M. L. Gwinn, D. H. Haft, H. Khouri, J. F. Kolonay, R. Madupu, Y. Mohammoud, W. C. Nelson, D. Radune, C. M. Romero, S. Sarria, J. Selengut, C. Shamblin, S. A. Sullivan, O. White, Y. Yu, N. Zafar, L. Zhou, and C. M. Fraser.** 2004. Structural flexibility in the *Burkholderia mallei* genome. *Proc Natl Acad Sci U S A* **101**:14246-51.
This paper reports the analysis of a complete genome of the bacterium.
 11. **Ulrich, R. L., and D. DeShazer.** 2004. Type III secretion: a virulence factor delivery system essential for the pathogenicity of *Burkholderia mallei*. *Infect Immun* **72**:1150-4.
This paper reports that a functional type III secretion system is required for the full pathogenicity of the bacterium in the BALB/c mouse and Syrian hamster models of infection.
 12. **Ulrich, R. L., D. Deshazer, H. B. Hines, and J. A. Jeddloh.** 2004. Quorum sensing: a transcriptional regulatory system involved in the pathogenicity of *Burkholderia mallei*. *Infect Immun* **72**:6589-96.
This paper reports that individual cells of the bacterium communicate via quorum sensing, and that the bacterium carries multiple luxIR homologues that either directly or indirectly regulate the biosynthesis of an essential virulence factors that contributes to the pathogenicity in vivo.
 13. **Glass, M. B., and T. Popovic.** 2005. Preliminary evaluation of the API 20NE and RapID NF plus systems for rapid identification of *Burkholderia pseudomallei* and *B. mallei*. *J Clin Microbiol* **43**:479-83.
This paper evaluates commercially available diagnostic systems for its use in diagnosing both bacteria.
 14. **Harvey, S. P., and J. M. Minter.** 2005. Ribotyping of *Burkholderia mallei* isolates. *FEMS Immunol Med Microbiol* **44**:91-7.
This paper reports the attempt to the subspecies differentiation of 25 isolates of *Burkholderia mallei* based on their ribotype polymorphisms.
 15. **Smith, M. J., and J. A. Jeddloh.** 2005. DNA methylation in lysogens of pathogenic *Burkholderia* spp. requires prophage induction and is restricted to excised phage DNA. *J Bacteriol* **187**:1196-200.
This paper reports that upon induction of a phage of the bacterium, cytosine methylation was targeted specifically to the phage episome but not the phage provirus or the host chromosome.

NIH Grants:

1	100	1U01AI056383-01	STEWART, DONALD	<u>Antibodies to Burkholderia type III secretion system</u>
Total: \$992,819			<ul style="list-style-type: none"> \$330,684 2005 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA \$415,395 2004 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA \$246,740 2003 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA 	
2	67	1R01AI056006-01	NIERMAN, WILLIAM	<u>Regulation of Burkholderia mallei virulence genes</u>
Total: \$1,131,955			<p>\$454,064 2005 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD</p> <p>\$446,178 2004 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD</p> <p>\$231,713 2003 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD</p>	
3	67	1U01AI049037-01	NIERMAN, WILLIAM	<u>SEQUENCING THE GENOME BURKHOLDERIA MALLEI</u>
Total: \$2,087,240			<p>\$984,990 2001 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD</p> <p>\$1,102,250 2000 NIERMAN, WILLIAM C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD</p>	
4	67	1R43AI056802-01	NORDSTROM, JEFFREY	<u>Vaccine discovery for Burkholderia via protection screen</u>
Total: \$500,000			<ul style="list-style-type: none"> \$500,000 2003 Sykes, Kathryn F MACROGENICS, INC. DALLAS, TX 	
5	63	1R03AI054411-01	LIPUMA, JOHN	<u>Burkholderia sp: Identification of major clonal lineages</u>
Total: \$152,750			<ul style="list-style-type: none"> \$76,500 2004 Lipuma, John J UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$76,250 2003 Lipuma, John J UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI 	
6	63	1R01AI050565-01	NIERMAN, WILLIAM	<u>Microarray Expression Analysis of Burkholderia Mallei</u>
Total: \$877,268			<ul style="list-style-type: none"> \$277,234 2003 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD \$200,621 2002 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD \$399,413 2001 Nierman, William C INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD 	

7	34	1R03AI054690-01	DONNENBERG, MICHAEL	<u>Type IV Pilins as Vaccines against Bioterrorism Threats</u>
Total: \$148,500			<ul style="list-style-type: none"> \$74,250 2004 Donnenberg, Michael S UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$74,250 2003 Donnenberg, Michael S UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
8	34	1R21AI065724-01	SCHWEIZER, HERBERT	<u>Non-antibiotic resistance markers for bacteria</u>
Total: \$179,725			<ul style="list-style-type: none"> \$179,725 2005 Schweizer, Herbert P COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO 	

Burkholderia pseudomallei

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Betaproteobacteria*, Order *Burkholderiales*, Family *Burkholderiaceae*.

Publications:

- O'Quinn, A. L., E. M. Wiegand, and J. A. Jeddloh.** 2001. *Burkholderia pseudomallei* kills the nematode *Caenorhabditis elegans* using an endotoxin-mediated paralysis. *Cell Microbiol* **3**:381-93.

This paper reports that *Burkholderia pseudomallei* is able to cause 'disease-like' symptoms and kill the nematode *Caenorhabditis elegans*, and recommends that a *C. elegans* model might be useful for the identification of vertebrate animal virulence factors in *Burkholderia pseudomallei*.
- Reckseidler, S. L., D. DeShazer, P. A. Sokol, and D. E. Woods.** 2001. Detection of bacterial virulence genes by subtractive hybridization: identification of capsular polysaccharide of *Burkholderia pseudomallei* as a major virulence determinant. *Infect Immun* **69**:34-44.

This paper reports the development of a new system for the detection of virulence factors of pathogenic bacteria.
- DeShazer, D.** 2004. Genomic diversity of *Burkholderia pseudomallei* clinical isolates: subtractive hybridization reveals a *Burkholderia mallei*-specific prophage in *B. pseudomallei* 1026b. *J Bacteriol* **186**:3938-50.

This paper describes the discovery of a bacterial virus within *Burkholderia pseudomallei* strains.
- Moore, R. A., S. Reckseidler-Zenteno, H. Kim, W. Nierman, Y. Yu, A. Tuanyok, J. Warawa, D. DeShazer, and D. E. Woods.** 2004. Contribution of gene loss to the

pathogenic evolution of *Burkholderia pseudomallei* and *Burkholderia mallei*. *Infect Immun* **72**:4172-87.

This paper reports that the ability to metabolize arabinose reduces the virulence of *B. pseudomallei* and that the genes encoding arabinose assimilation may be considered antivirulence genes.

5. **Glass, M. B., and T. Popovic.** 2005. Preliminary evaluation of the API 20NE and RapID NF plus systems for rapid identification of *Burkholderia pseudomallei* and *B. mallei*. *J Clin Microbiol* **43**:479-83.

This paper evaluates commercially available diagnostic systems for its use in diagnosing both bacteria.

NIH Grants:

1	100	1U01AI056383-01	STEWART, DONALD	<u>Antibodies to Burkholderia type III secretion system</u>
Total: \$992,819			<ul style="list-style-type: none"> \$330,684 2005 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA \$415,395 2004 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA \$246,740 2003 Stewart, Donald I CANGENE CORPORATION CANADA - MISSISSAUGA 	
2	67	1R21AI061602-01	CROSA, JORGE	<u>Iron Uptake and Virulence of Burkholderia pseudomallei</u>
Total: \$302,000			<ul style="list-style-type: none"> \$302,000 2004 Crosa, Jorge H OREGON HEALTH & SCIENCE UNIVERSITY PORTLAND, OR 	
3	31	1U01AI061363-01	FELGNER, PHILIP	<u>Scanning <i>B. pseudomallei</i> proteome for vaccine antigens</u>
Total: \$1,566,070			<ul style="list-style-type: none"> \$1,566,070 2004 Felgner, Philip L UNIVERSITY OF CALIFORNIA IRVINE IRVINE, CA 	
4	16	1U54AI057141-010002	MANOIL, COLIN	<u>Bacterial Essential and Virulence Gene</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	

5	47	1R03AI053079-01	HASSETT, DANIEL	<u>B.pseudomallei bioterrorism and quorum sensing</u>
Total: \$153,500			<ul style="list-style-type: none"> • \$76,750 2003 Hassett, Daniel J UNIVERSITY OF CINCINNATI CINCINNATI, OH • \$76,750 2002 Hassett, Daniel J UNIVERSITY OF CINCINNATI CINCINNATI, OH 	
6	47	1U54AI057160-010013	MAJERUS, PHILIP	<u>The Role of Inositol Phosphate in B. Pseudomallei Pathogenesis</u>
Total: \$18,865,686			<ul style="list-style-type: none"> • \$7,627,721 2005 Stanley, Samuel L ORION GENOMICS, LLC ST. LOUIS, MO • \$7,894,128 2004 Stanley, Samuel L JACOBS FACILITIES, INC. ST LOUIS, MO • \$3,343,837 2003 Stanley, Samuel L MISSOURI WESTERN STATE COLLEGE ST. JOSEPH, MO 	
7	47	1R43AI056644-01	MOIR, DONALD	<u>Discovery of B. pseudomallei Therapeutics for Biodefense</u>
Total: \$349,543			<ul style="list-style-type: none"> • \$349,543 2004 Moir, Donald T MICROBIOTIX, INC. WORCESTER, MA 	
8	34	1R21AI065724-01	SCHWEIZER, HERBERT	<u>Non-antibiotic resistance markers for bacteria</u>
Total: \$179,725			<ul style="list-style-type: none"> • \$179,725 2005 Schweizer, Herbert P COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO 	

Camelpoxvirus

Taxonomy: Family *Poxviridae*, Subfamily *Chordopoxvirinae*, Genus *Orthopoxvirus*, Species

Camelpox virus. Virus: Camelpox virus.

Publications:

1. **Vladimir N. Loparev, Robert F. Massung, Joseph J. Esposito,** and Hermann Meyer. 2001. Detection and Differentiation of Old World Orthopoxviruses: Restriction Fragment Length Polymorphism of the *crmB* Gene Region. *J Clin Microbiol* **39**:94-100. This paper describes the development of a restriction fragment length polymorphism assay to differentiate various poxviruses including *Camelpoxvirus*, *Monkeypox virus*, and *Variola virus*.

2. **Smee, D. F., Bray, M., and Huggins, J. W.** 2001. Antiviral activity and mode of action studies of ribavirin and mycophenolic acid against orthopoxviruses in vitro. *Antivir Chem Chemother* **12**:327-35.
This paper describes the testing of various antiviral against Camelpox and Monkeypox virus.
3. **C. L. Afonso, E. R. Tulman, Z. Lu, L. Zsak, N. T. Sandybaev, U. Z. Kerembekova, V. L. Zaitsev, G. F. Kutish and D. L. Rock.** 2002. The Genome of Camelpox Virus. *Virology* **295**:1-9.
This paper describes the determination of the sequence of a Camelpox virus strain.
4. **M. Sofi Ibrahim, David A. Kulesh, Sharron S. Saleh, Inger K. Damon, Joseph J. Esposito, Alan L. Schmaljohn, and Peter B. Jahrling.** 2003. Real-Time PCR Assay To Detect Smallpox Virus. *J Clin Microbiol* **41**:3835-39.
This paper describes the development of a real-time 5' nuclease PCR assay (also known as the TaqMan assay) for the rapid diagnosis of *Variola virus*. 48 different strains of *Variola virus* were used. Controls included *Camelpox virus*, and *Monkeypox virus*.
5. **Baker Robert O., Mike Bray, and John W. Huggins.** 2003. Potential antiviral therapeutics for smallpox, monkeypox and other orthopoxvirus infections. *Antiviral Res* **57**:13-23.
This paper describes the evaluation of 24 different potential antivirals for their activity against *Variola virus* (35 strains), *Monkeypox virus*, *Camelpox virus*, and *Cowpox virus*. Several active compounds were isolated.
6. **Olson, Victoria A., Thomas Laue, Miriam T. Laker, Igor V. Babkin, Christian Drosten, Sergei N. Shchelkunov, Matthias Niedrig, Inger K. Damon, and Hermann Meyer.** 2004. Real-Time PCR System for Detection of Orthopoxviruses and Simultaneous Identification of Smallpox Virus. *J Clin Microbiol* **42**:1940-6.
This paper describes the development of a real-time PCR system for various orthopoxviruses including *Variola virus*, *Monkeypox virus*, *Camelpox virus*, and *Cowpox virus*. Several active compounds were isolated.

NIH grants: None identified.

“*Candidatus Liberobacter africanus*”

Taxonomy: Domain *Bacteria*, final status undetermined.

Publications: None identified.

NIH Grants: None identified.

“*Candidatus Liberobacter asiaticus*”

Taxonomy: Domain *Bacteria*, final status undetermined.

Publications: None identified.

NIH Grants: None identified.

Cercopithecine herpesvirus 1

Taxonomy: Family *Herpesviridae*, Subfamily: *Alphaherpesvirinae*, Genus *Simplexvirus*, Species

Cercopithecus herpesvirus 1. Virus: *Cercopithecus herpesvirus 1*, B-virus, *Herpesvirus simiae*.

Publications:

1. **Makoto Hirano, Shin Nakamura, Fusako Mitsunaga, Maki Okada, Keiko Shimizu, Masahiro Ueda, Alice Bennett, and Richard Eberle.** 2002. Efficacy of a B virus gD DNA vaccine for induction of humoral and cellular immune responses in Japanese macaques. *Vaccine* **20**:2523-32.
This paper describes the development and evaluation of a vaccine candidate against *Cercopithecine herpesvirus 1*.
2. **Ludmila Perelygina, Holley Zurkuhlen, Irina Patrusheva, and Julia K. Hilliard.** 2002. Identification of a Herpes B Virus–Specific Glycoprotein D Immunodominant Epitope Recognized by Natural and Foreign Hosts. *J Infect Dis* **186**:453-61.
This paper describes the determination of immunogenic epitopes of the glycoprotein of *Cercopithecine herpesvirus 1*.
3. **L. Perelygina, I. Patrusheva, H. Zurkuhlen, J. K. Hilliard.** 2002. Characterization of B virus glycoprotein antibodies induced by DNA immunization. *Arch Virol* **147**:2057-73.
This paper describes the creation of polyclonal antibodies to glycoproteins of *Cercopithecine herpesvirus 1* by DNA immunization.
4. **J. L. Huff, R. Eberle, J. Capitanio, S. S. Zhou, and P. A. Barry.** 2003. Differential detection of B virus and rhesus cytomegalovirus in rhesus macaques. *J Gen Virol* **84**:83-92.
This paper describes the development of a real-time PCR assay to quantify *Cercopithecine herpesvirus type 1* DNA in mucosal fluids of rhesus macaques.
5. **Ludmila Perelygina, Irina Patrusheva, Nina Manes, Martin J. Wildes, Peter Krug, and Julia K. Hilliard.** 2003. Quantitative real-time PCR for detection of monkey B virus (*Cercopithecine herpesvirus 1*) in clinical samples. *J Virol Methods* **109**:245-51.
This paper describes the development of a TaqMan-based real-time PCR assay for rapid detection and quantitation of *Cercopithecine herpesvirus 1* in clinical samples.

6. **K. Ohsawa, D. H. Black, H. Sato, K. Rogers, and R. Eberle.** 2003. Sequence and genetic arrangement of the U_L region of the monkey B virus (Cercopithecine herpesvirus 1) genome and comparison with the UL region of other primate herpesviruses. *Arch Virol* **148**:989-97.
This paper reports the DNA sequence of the unique long region of Cercopithecine herpesvirus 1.
7. **Ludmila Perelygina, Li Zhu, Holley Zurkuhlen, Ryan Mills, Mark Borodovsky, and Julia K. Hilliard.** 2003. Complete Sequence and Comparative Analysis of the Genome of Herpes B Virus (*Cercopithecine Herpesvirus 1*) from a Rhesus Monkey. *J Virol* **77**:6167-77.
This paper reports the complete DNA sequence of a Cercopithecine herpesvirus 1 isolate.
8. **Ritchey, J. W., M. E. Payton, and R. Eberle.** 2005. Clinicopathological characterization of monkey B virus (cercopithecine herpesvirus 1) infection in mice. *J Comp Pathol* **132**:202-17.
This paper describes the establishment of a murine model for cercopithecine herpesvirus 1 infection.

NIH grants:

1	17	2P40RR005062-12	HILLIARD, JULIA	<u>HERPES B VIRUS--A NATIONAL RESOURCE LABORATORY</u>
		Total: \$3,274,545	<ul style="list-style-type: none"> • \$318,968 2005 Hilliard, Julia K GEORGIA STATE UNIVERSITY ATLANTA, GA • \$623,999 2004 Hilliard, Julia K GEORGIA STATE UNIVERSITY ATLANTA, GA • \$605,824 2003 Hilliard, Julia K GEORGIA STATE UNIVERSITY ATLANTA, GA • \$591,667 2002 Hilliard, Julia K GEORGIA STATE UNIVERSITY ATLANTA, GA • \$574,434 2001 Hilliard, Julia K GEORGIA STATE UNIVERSITY ATLANTA, GA • \$559,653 2000 HILLIARD, JULIA K GEORGIA STATE UNIVERSITY ATLANTA, GA 	

Classical swine fever virus

Taxonomy: Family *Flaviviridae*, Genus *Pestivirus*, Species: *Classical swine fever virus*. Virus:

Classical swine fever virus, Alfort/187 virus, Alfort-Tübingen virus, Brescia, C strain virus.

Publications:

1. **Risatti, G. R., J. D. Callahan, W. M. Nelson, and M. V. Borca.** 2003. Rapid detection of classical swine fever virus by a portable real-time reverse transcriptase PCR assay. *J Clin Microbiol* **41**:500-5.
This paper describes the development of a a fluorogenic-probe hydrolysis TaqMan reverse transcriptase PCR assay for the detection of the virus.
2. **Risatti, G., L. Holinka, Z. Lu, G. Kutish, J. D. Callahan, W. M. Nelson, E. Brea Tio, and M. V. Borca.** 2005. Diagnostic evaluation of a real-time reverse transcriptase PCR assay for detection of classical swine fever virus. *J Clin Microbiol* **43**:468-71.
This paper describes the evaluation of a fluorogenic-probe hydrolysis TaqMan-reverse transcriptase PCR assay for the detection of the virus
3. **Risatti, G. R., M. V. Borca, G. F. Kutish, Z. Lu, L. G. Holinka, R. A. French, E. R. Tulman, and D. L. Rock.** 2005. The E2 glycoprotein of classical swine fever virus is a virulence determinant in swine. *J Virol* **79**:3787-96.
This paper demonstrates that the E2 surface protein of the virus alone is responsible for virulence differences in different virus strains.

NIH grants: None identified.

Clostridium botulinum (neurotoxin-producing)

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Clostridia*, Order *Clostridiales*, Family *Clostridiaceae*.

Publications:

1. **Chea, F. P., Y. Chen, T. J. Montville, and D. W. Schaffner.** 2000. Modeling the germination kinetics of clostridium botulinum 56A spores as affected by temperature, pH, and sodium chloride. *J Food Prot* **63**:1071-9.
This paper reports the effects of temperature and pH on germination of spores of the bacterium.
2. **Dineen, S. S., M. Bradshaw, and E. A. Johnson.** 2000. Cloning, nucleotide sequence, and expression of the gene encoding the bacteriocin boticin B from *Clostridium botulinum* strain 213B. *Appl Environ Microbiol* **66**:5480-3.
This paper reports the characterization of a gene of the bacterium.
3. **Lawlor, K. A., M. D. Pierson, C. R. Hackney, J. R. Claus, and J. E. Marcy.** 2000. Nonproteolytic *Clostridium botulinum* toxigenesis in cooked turkey stored under modified atmospheres. *J Food Prot* **63**:1511-6.
This paper reports the spread of the bacterium in cooked turkey.

4. **Peleg, M., and M. B. Cole.** 2000. Estimating the survival of *Clostridium botulinum* spores during heat treatments. *J Food Prot* **63**:190-5.
This paper reports survival characteristics of spores of the bacterium.
5. **Skinner, G. E., S. M. Gendel, G. A. Fingerhut, H. A. Solomon, and J. Ulaszek.** 2000. Differentiation between types and strains of *Clostridium botulinum* by riboprinting. *J Food Prot* **63**:1347-52.
This paper reports the evaluation of a diagnostic system.
6. **Cai, S., and B. R. Singh.** 2001. Role of the disulfide cleavage induced molten globule state of type a botulinum neurotoxin in its endopeptidase activity. *Biochemistry* **40**:15327-33.
This paper reports the effect of disulfide cleavage on a toxin of the bacterium.
7. **Prabakaran, S., W. Tepp, and B. R. DasGupta.** 2001. Botulinum neurotoxin types B and E: purification, limited proteolysis by endoproteinase Glu-C and pepsin, and comparison of their identified cleaved sites relative to the three-dimensional structure of type A neurotoxin. *Toxicon* **39**:1515-31.
This paper reports the characterization of specific cleavage sites of toxins of the bacterium.
8. **Craven, K. E., J. L. Ferreira, M. A. Harrison, and P. Edmonds.** 2002. Specific detection of *Clostridium botulinum* types A, B, E, and F using the polymerase chain reaction. *J AOAC Int* **85**:1025-8.
This paper reports a detection system.
9. **Peterson, M. E., R. N. Paranjpye, F. T. Poysky, G. A. Pelroy, and M. W. Eklund.** 2002. Control of nonproteolytic *Clostridium botulinum* types B and E in crab analogs by combinations of heat pasteurization and water phase salt. *J Food Prot* **65**:130-9.
This paper reports the effect of certain inactivating methods on strains of the bacterium in imitation crab meat.
10. **Zhao, L., T. J. Montville, and D. W. Schaffner.** 2002. Time-to-detection, percent-growth-positive and maximum growth rate models for *Clostridium botulinum* 56A at multiple temperatures. *Int J Food Microbiol* **77**:187-97.
This paper reports growth characteristics of the bacterium.
11. **Dineen, S. S., M. Bradshaw, and E. A. Johnson.** 2003. Neurotoxin gene clusters in *Clostridium botulinum* type A strains: sequence comparison and evolutionary implications. *Curr Microbiol* **46**:345-52.
This paper reports the phylogenetic relationships of the toxin genes of different strains of the bacterium.
12. **Ferreira, J. L., S. Maslanka, E. Johnson, and M. Goodnough.** 2003. Detection of botulinum neurotoxins A, B, E, and F by amplified enzyme-linked immunosorbent assay: collaborative study. *J AOAC Int* **86**:314-31.
This paper reports the evaluation of a detection system.
13. **Lim, Y. H., M. K. Hamdy, and R. T. Toledo.** 2003. Combined effects of ionizing-irradiation and different environments on *Clostridium botulinum* type E spores. *Int J Food Microbiol* **89**:251-63.
This paper reports the effect of inactivating methods on spores of the bacterium.

14. **Reddy, N. R., H. M. Solomon, R. C. Tetzloff, and E. J. Rhodehamel.** 2003. Inactivation of *Clostridium botulinum* type A spores by high-pressure processing at elevated temperatures. *J Food Prot* **66**:1402-7.
This paper reports the evaluation of an inactivation method for spores of the bacterium.
15. **Sharma, S. K., M. A. Ramzan, and B. R. Singh.** 2003. Separation of the components of type A botulinum neurotoxin complex by electrophoresis. *Toxicon* **41**:321-31.
This paper reports the separation of toxin components of the bacterium.
16. **Zhang, L., W. J. Lin, S. Li, and K. R. Aoki.** 2003. Complete DNA sequences of the botulinum neurotoxin complex of *Clostridium botulinum* type A-Hall (Allergan) strain. *Gene* **315**:21-32.
This paper reports the sequence of toxin-encoding genes of a strain of the bacterium.
17. **Barash, J. R., and S. S. Arnon.** 2004. Dual toxin-producing strain of *Clostridium botulinum* type Bf isolated from a California patient with infant botulism. *J Clin Microbiol* **42**:1713-5.
This paper reports the identification of a novel strain of the bacterium.
18. **Dineen, S. S., M. Bradshaw, C. E. Karasek, and E. A. Johnson.** 2004. Nucleotide sequence and transcriptional analysis of the type A2 neurotoxin gene cluster in *Clostridium botulinum*. *FEMS Microbiol Lett* **235**:9-16.
This paper reports the sequence of toxin-encoding genes of a strain of the bacterium.
19. **Eklund, M. W., F. T. Poysky, M. E. Peterson, R. N. Paranjpye, and G. A. Pelroy.** 2004. Competitive inhibition between different *Clostridium botulinum* types and strains. *J Food Prot* **67**:2682-7.
This paper reports the effect of different strains of the bacterium on each other.
20. **Glass, K. A., and E. A. Johnson.** 2004. Antibotulinal activity of process cheese ingredients. *J Food Prot* **67**:1765-9.
This paper reports the inhibitory effects of cheese on the bacterium.
21. **Kirma, N., J. L. Ferreira, and B. R. Baumstark.** 2004. Characterization of six type A strains of *Clostridium botulinum* that contain type B toxin gene sequences. *FEMS Microbiol Lett* **231**:159-64.
This paper reports the characterization of several strains of the bacterium.
22. **Sharma, S. K., and B. R. Singh.** 2004. Enhancement of the endopeptidase activity of purified botulinum neurotoxins A and E by an isolated component of the native neurotoxin associated proteins. *Biochemistry* **43**:4791-8.
This paper reports a toxin-associated protein of the bacterium that enhances the activity of the toxin.
23. **Simpson, L. L., A. B. Maksymowych, J. B. Park, and R. S. Bora.** 2004. The role of the interchain disulfide bond in governing the pharmacological actions of botulinum toxin. *J Pharmacol Exp Ther* **308**:857-64.
This paper reports structural requirements for toxic activity of a toxin of the bacterium.
24. **Zhou, Y., and B. R. Singh.** 2004. Cloning, high-level expression, single-step purification, and binding activity of His6-tagged recombinant type B botulinum neurotoxin heavy chain transmembrane and binding domain. *Protein Expr Purif* **34**:8-16.
This paper reports an isolation method for a toxin of the bacterium.

25. **Johnson, E. A., W. H. Tepp, M. Bradshaw, R. J. Gilbert, P. E. Cook, and E. D. McIntosh.** 2005. Characterization of Clostridium botulinum strains associated with an infant botulism case in the United Kingdom. J Clin Microbiol **43**:2602-7.
This paper reports the characterization of novel strains of the bacterium.
26. **Sharma, S. K., B. S. Eblen, R. L. Bull, D. H. Burr, and R. C. Whiting.** 2005. Evaluation of lateral-flow Clostridium botulinum neurotoxin detection kits for food analysis. Appl Environ Microbiol **71**:3935-41.
This paper reports the evaluation of a detection method.

NIH Grants:

1	50	1U54AI057153-019004	JOHNSON, ERIC	<u>Core--Clostridium botulinum and neurotoxin facility</u>
Total: \$20,734,800 *		<ul style="list-style-type: none"> • \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 		
2	37	1R21AI059125-01	JOHNSON, ERIC	<u>Development of Genetic Tools for Clostridium botulinum</u>
Total: \$502,375		<ul style="list-style-type: none"> • \$245,500 2005 Johnson, Eric A UNIVERSITY OF WISCONSIN MADISON MADISON, WI • \$256,875 2004 Johnson, Eric A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 		
3	25	2P41RR013461-060027	MOELLER, ROBERT	<u>SERUM & MILK IDENTIFICATION OF CLOSTRIDIUM BOTULINUM</u>
Total: \$6,706,649		<ul style="list-style-type: none"> • \$1,446,875 2004 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA • \$1,276,355 2003 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA • \$1,257,387 2002 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA • \$1,311,794 2001 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA • \$1,414,238 2000 TURTELTAUB, KENNETH W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA 		
4	25	1R41AI059138-01A1	SCHOEN, CHRISTIAN	<u>Automated, portable, concurrent, WMD detection system</u>
Total: \$994,832		<ul style="list-style-type: none"> • \$500,000 2005 Schoen, Christian CONCURRENT ANALYTICAL, INC. Kailua, HI • \$494,832 2004 Schoen, Christian CONCURRENT ANALYTICAL, INC. 		

			Kailua, HI	
5	12	1U01A1054374-01	HENRICKSON, KELLY	<u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u>
Total: \$1,346,667			<ul style="list-style-type: none"> • \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI • \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI • \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI 	
6	12	1R43A1052898-01	PRUDENT, JAMES	<u>Rapid Turn-around Testing for Bioterrorism Agents</u>
Total: \$105,250			<ul style="list-style-type: none"> • \$105,250 2002 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI 	
7	12	2R44A1052898-02	PRUDENT, JAMES	<u>Rapid Turn-around Multiplex Testing: Bioweapon Agents</u>
Total: \$938,550			<ul style="list-style-type: none"> • \$389,796 2004 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI • \$548,754 2003 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI 	

Coccidioides immitis

Taxonomy: Empira: *Eukarya*, Kingdom: *Fungi*, Phylum: *Ascomycota*, Class: *Eurotiomycetes*,

Order: *Onygenales*, Family *Onygenaceae*.

Publications:

1. **Fierer, J., L. Walls, and T. N. Kirkland.** 2000. Genetic evidence for the role of the *Lv* locus in early susceptibility but not IL-10 synthesis in experimental coccidioidomycosis in C57BL mice. *J Infect Dis* **181**:681-5.
This paper reports the discovery that different mouse strains have different susceptibilities to the infection with the fungus; and that this difference can be pinpointed to a specific location on chromosome 4.
2. **Fisher, M. C., G. Koenig, T. J. White, and J. W. Taylor.** 2000. A test for concordance between the multilocus genealogies of genes and microsatellites in the pathogenic fungus *Coccidioides immitis*. *Mol Biol Evol* **17**:1164-74.
This paper describes the sequencing of seven microsatellites of strains of *C. immitis* and *C. posadasii* and the establishment of a phylogenetic tree of these isolates.

3. **Gromadzki, S. G., and V. Chaturvedi.** 2000. Limitation of the AccuProbe *Coccidioides immitis* culture identification test: false-negative results with formaldehyde-killed cultures. *J Clin Microbiol* **38**:2427-8.
This paper warns that the AccuProbe *Coccidioides immitis* culture identification test is not reliable when formaldehyde-inactivated spores of the fungus are used.
4. **Guevara-Olvera, L., C. Y. Hung, J. J. Yu, and G. T. Cole.** 2000. Sequence, expression and functional analysis of the *Coccidioides immitis* ODC (ornithine decarboxylase) gene. *Gene* **242**:437-48.
This paper reports the sequencing and expression of a gene of the fungus.
5. **Hung, C. Y., N. M. Ampel, L. Christian, K. R. Seshan, and G. T. Cole.** 2000. A major cell surface antigen of *Coccidioides immitis* which elicits both humoral and cellular immune responses. *Infect Immun* **68**:584-93.
This paper describes the identification of a cell surface antigen of the fungus.
6. **Li, R. K., M. A. Ciblak, N. Nordoff, L. Pasarell, D. W. Warnock, and M. R. McGinnis.** 2000. In vitro activities of voriconazole, itraconazole, and amphotericin B against *Blastomyces dermatitidis*, *Coccidioides immitis*, and *Histoplasma capsulatum*. *Antimicrob Agents Chemother* **44**:1734-6.
This paper reports the evaluation of different antifungal compounds for their efficacies against the fungus.
7. **Reichard, U., C. Y. Hung, P. W. Thomas, and G. T. Cole.** 2000. Disruption of the gene which encodes a serodiagnostic antigen and chitinase of the human fungal pathogen *Coccidioides immitis*. *Infect Immun* **68**:5830-8.
This paper describes the disruption of a gene of the fungus.
8. **Sorensen, K. N., R. A. Sobel, K. V. Clemons, L. Calderon, K. J. Howell, P. R. Irani, D. Pappagianis, P. L. Williams, and D. A. Stevens.** 2000. Comparative efficacies of terbinafine and fluconazole in treatment of experimental coccidioidal meningitis in a rabbit model. *Antimicrob Agents Chemother* **44**:3087-91.
This paper reports the evaluation of different antifungal compounds for their efficacies against the fungus *in vivo*.
9. **Sorensen, K. N., R. A. Sobel, K. V. Clemons, D. Pappagianis, D. A. Stevens, and P. L. Williams.** 2000. Comparison of fluconazole and itraconazole in a rabbit model of coccidioidal meningitis. *Antimicrob Agents Chemother* **44**:1512-7.
This paper reports the evaluation of different antifungal compounds for their efficacies against the fungus *in vivo*.
10. **Gonzalez, G. M., R. Tijerina, L. K. Najvar, R. Bocanegra, M. Luther, M. G. Rinaldi, and J. R. Graybill.** 2001. Correlation between antifungal susceptibilities of *Coccidioides immitis* in vitro and antifungal treatment with caspofungin in a mouse model. *Antimicrob Agents Chemother* **45**:1854-9.
This paper evaluates an antifungal *in vitro* and *in vivo*.
11. **Hung, C. Y., J. J. Yu, P. F. Lehmann, and G. T. Cole.** 2001. Cloning and expression of the gene which encodes a tube precipitin antigen and wall-associated beta-glucosidase of *Coccidioides immitis*. *Infect Immun* **69**:2211-22.
This paper reports the structure and expression and of the *Coccidioides immitis* BGL2 gene and the characterization of the expression product

12. **Li, K., J. J. Yu, C. Y. Hung, P. F. Lehmann, and G. T. Cole.** 2001. Recombinant urease and urease DNA of *Coccidioides immitis* elicit an immunoprotective response against coccidioidomycosis in mice. *Infect Immun* **69**:2878-87.
This paper describes the development of novel vaccine candidates.
13. **Clemons, K. V., R. A. Sobel, P. L. Williams, D. Pappagianis, and D. A. Stevens.** 2002. Efficacy of intravenous liposomal amphotericin B (AmBisome) against coccidioidal meningitis in rabbits. *Antimicrob Agents Chemother* **46**:2420-6.
This paper reports the evaluation of an antibiotic.
14. **Gonzalez, G. M., R. Tijerina, L. K. Najvar, R. Bocanegra, M. Rinaldi, D. Loebenberg, and J. R. Graybill.** 2002. In vitro and in vivo activities of posaconazole against *Coccidioides immitis*. *Antimicrob Agents Chemother* **46**:1352-6.
This paper reports the evaluation of an antimycotic.
15. **Gonzalez, G. M., R. Tijerina, D. A. Sutton, J. R. Graybill, and M. G. Rinaldi.** 2002. In vitro activities of free and lipid formulations of amphotericin B and nystatin against clinical isolates of *Coccidioides immitis* at various saprobic stages. *Antimicrob Agents Chemother* **46**:1583-5.
This paper reports the evaluation of antimycotics.
16. **Hung, C. Y., J. J. Yu, K. R. Seshan, U. Reichard, and G. T. Cole.** 2002. A parasitic phase-specific adhesin of *Coccidioides immitis* contributes to the virulence of this respiratory Fungal pathogen. *Infect Immun* **70**:3443-56.
This paper reports the identification of a virulence factor of the fungus.
17. **Jiang, C., D. M. Magee, F. D. Ivey, and R. A. Cox.** 2002. Role of signal sequence in vaccine-induced protection against experimental coccidioidomycosis. *Infect Immun* **70**:3539-45.
This paper evaluates a vaccine candidate.
18. **Mirbod, F., R. A. Schaller, and G. T. Cole.** 2002. Purification and characterization of urease isolated from the pathogenic fungus *Coccidioides immitis*. *Med Mycol* **40**:35-44.
This paper reports the purification and characterization of urease isolated from *Coccidioides immitis*.
19. **Peng, T., L. Shubitz, J. Simons, R. Perrill, K. I. Orsborn, and J. N. Galgiani.** 2002. Localization within a proline-rich antigen (Ag2/PRA) of protective antigenicity against infection with *Coccidioides immitis* in mice. *Infect Immun* **70**:3330-5.
This paper reports the identification and localization of a protective antigen of the fungus.
20. **Shubitz, L., T. Peng, R. Perrill, J. Simons, K. Orsborn, and J. N. Galgiani.** 2002. Protection of mice against *Coccidioides immitis* intranasal infection by vaccination with recombinant antigen 2/PRA. *Infect Immun* **70**:3287-9.
This paper reports the evaluation of a vaccine candidate.
21. **Ivey, F. D., D. M. Magee, M. D. Woitaske, S. A. Johnston, and R. A. Cox.** 2003. Identification of a protective antigen of *Coccidioides immitis* by expression library immunization. *Vaccine* **21**:4359-67.
This paper reports the identification and localization of a protective antigen of the fungus.
22. **Kamberi, P., R. A. Sobel, K. V. Clemons, D. A. Stevens, D. Pappagianis, and P. L. Williams.** 2003. A murine model of coccidioidal meningitis. *J Infect Dis* **187**:453-60.
This paper reports the development of a mouse model for coccidioidomycoses.

23. **Johannesson, H., P. Vidal, J. Guarro, R. A. Herr, G. T. Cole, and J. W. Taylor.** 2004. Positive directional selection in the proline-rich antigen (PRA) gene among the human pathogenic fungi *Coccidioides immitis*, *C. posadasii* and their closest relatives. *Mol Biol Evol* **21**:1134-45.

This paper reports the possibility of selection acting on the proline-rich antigen gene in natural populations of the two fungi.

NIH Grants:

1	45	2R01AI019149-17	COLE, GARRY	<u>IMMUNOREACTIVE MACROMOLECULES OF COCCIDIOIDES CELL TYPES</u>
		Total: \$1,740,158	<p>\$490,785 2005 Cole, Garry T MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH</p> <p>\$476,940 2004 Cole, Garry T MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH</p> <p>\$28,817 2003 Cole, Garry T MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH</p> <p>\$389,844 2003 Cole, Garry T MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH</p> <p>\$353,772 2002 Cole, Garry T MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH</p>	
2	45	1P01AI061310-01	GALGIANI, JOHN	<u>Host control in Coccidioidomycosis</u>
		Total: \$1,655,611	<p>\$810,703 2005 Galgiani, John N UNIVERSITY OF ARIZONA TUCSON, AZ</p> <p>\$844,908 2004 Galgiani, John N UNIVERSITY OF ARIZONA TUCSON, AZ</p>	
3	45	1R43AI052632-01A1	SELITRENNIKOFF, CLAUDE	<u>A novel yeast vaccine against Coccidioides Immitis</u>
		Total: \$99,997	<ul style="list-style-type: none"> \$99,997 2003 Selitrennikoff, Claude P MYCOLOGICS, INC. AURORA, CO 	
4	30	1U01AI050910-01	GARDNER, MALCOLM	<u>Coccidioides immitis Genome Sequencing Project</u>
		Total: \$2,949,205	<ul style="list-style-type: none"> \$1,457,617 2002 Gardner, Malcolm J INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD \$1,491,588 2001 Gardner, Malcolm J INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD 	

Coccidioides posadasii (formerly non-California *Coccidioides immitis*)

Taxonomy: Empira: *Eukarya*, Kingdom: *Fungi*, Phylum: *Ascomycota*, Class: *Eurotiomycetes*,

Order: *Onygenales*, Family *Onygenaceae*.

Publications:

1. **Clemons, K. V., and D. A. Stevens.** 2000. Efficacies of sordarin derivatives GM193663, GM211676, and GM237354 in a murine model of systemic coccidioidomycosis. p6. *Antimicrob Agents Chemother* **44**:1874-7.
This paper evaluates the efficacy of sordarin derivatives as antifungal compounds in a murine model for coccidiomycosis.
2. **Fisher, M. C., G. Koenig, T. J. White, and J. W. Taylor.** 2000. A test for concordance between the multilocus genealogies of genes and microsatellites in the pathogenic fungus *Coccidioides immitis*. *Mol Biol Evol* **17**:1164-74.
This paper describes the sequencing of seven microsatellites of strains of *C. immitis* and *C. posadasii* and the establishment of a phylogenetic tree of these isolates.
3. **Hung, C. Y., N. M. Ampel, L. Christian, K. R. Seshan, and G. T. Cole.** 2000. A major cell surface antigen of *Coccidioides immitis* which elicits both humoral and cellular immune responses. *Infect Immun* **68**:584-93.
This paper describes the identification of a cell surface antigen of the fungus.
4. **Sorensen, K. N., R. A. Sobel, K. V. Clemons, L. Calderon, K. J. Howell, P. R. Irani, D. Pappagianis, P. L. Williams, and D. A. Stevens.** 2000. Comparative efficacies of terbinafine and fluconazole in treatment of experimental coccidioidal meningitis in a rabbit model. *Antimicrob Agents Chemother* **44**:3087-91.
This paper reports the evaluation of different antifungal compounds for their efficacies against the fungus *in vivo*.
5. **Sorensen, K. N., R. A. Sobel, K. V. Clemons, D. Pappagianis, D. A. Stevens, and P. L. Williams.** 2000. Comparison of fluconazole and itraconazole in a rabbit model of coccidioidal meningitis. *Antimicrob Agents Chemother* **44**:1512-7.
This paper reports the evaluation of different antifungal compounds for their efficacies against the fungus *in vivo*.
6. **Delgado, N., J. Xue, J. J. Yu, C. Y. Hung, and G. T. Cole.** 2003. A recombinant beta-1,3-glucanosyltransferase homolog of *Coccidioides posadasii* protects mice against coccidioidomycosis. *Infect Immun* **71**:3010-9.
This paper reports the evaluation of a vaccine candidate.
7. **Awasthi, S., D. M. Magee, and J. J. Coalson.** 2004. *Coccidioides posadasii* infection alters the expression of pulmonary surfactant proteins (SP)-A and SP-D. *Respir Res* **5**:28.
8. **Delgado, N., C. Y. Hung, E. Tarcha, M. J. Gardner, and G. T. Cole.** 2004. Profiling gene expression in *Coccidioides posadasii*. *Med Mycol* **42**:59-71.
This paper reports
9. **Johannesson, H., P. Vidal, J. Guarro, R. A. Herr, G. T. Cole, and J. W. Taylor.** 2004. Positive directional selection in the proline-rich antigen (PRA) gene among the human

pathogenic fungi *Coccidioides immitis*, *C. posadasii* and their closest relatives. *Mol Biol Evol* **21**:1134-45.

This paper reports the possibility of selection acting on the proline-rich antigen gene in natural populations of the two fungi.

19. **Kellner, E. M., K. I. Orsborn, E. M. Siegel, M. A. Mandel, M. J. Orbach, and J. N. Galgiani.** 2005. *Coccidioides posadasii* contains a single 1,3-beta-glucan synthase gene that appears to be essential for growth. *Eukaryot Cell* **4**:111-20.

This paper reports the identification of an enzyme that is essential for replication of the fungus.

20. **Viriyakosol, S., J. Fierer, G. D. Brown, and T. N. Kirkland.** 2005. Innate immunity to the pathogenic fungus *Coccidioides posadasii* is dependent on Toll-like receptor 2 and Dectin-1. *Infect Immun* **73**:1553-60.

This paper reports the identification of key factor in the immune response to infection with the fungus.

NIH Grants: None identified.

Coxiella burnetii

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Gammaproteobacteria*, Order

Legionellales, Family *Coxiellaceae*.

Publications:

1. **Howe, D., and L. P. Mallavia.** 2000. *Coxiella burnetii* exhibits morphological change and delays phagolysosomal fusion after internalization by J774A.1 cells. *Infect Immun* **68**:3815-21.
This paper reports on the function of a protein that seems to be involved in letting the bacterium switch between morphological forms, both of which are important for its survival in the environment of the inside of host cells.
2. **Sinai, A. P., S. Paul, M. Rabinovitch, G. Kaplan, and K. A. Joiner.** 2000. Coinfection of fibroblasts with *Coxiella burnetii* and *Toxoplasma gondii*: to each their own. *Microbes Infect* **2**:727-36.
This paper reports the coinfection of cells with the bacterium and a protozoan at the same time, and demonstrates that the two pathogens basically do not interact with each others.
3. **Wilhelmsen, C. L., and D. M. Waag.** 2000. Guinea pig abscess/hypersensitivity model for study of adverse vaccination reactions induced by use of Q fever vaccines. *Comp Med* **50**:374-8.

This paper reports a model of abscess hypersensitivity in Hartley guinea pigs to assess the likelihood that Q fever vaccines would induce adverse vaccination reactions in previously sensitized individuals.

4. **Seshadri, R., and J. E. Samuel.** 2001. Characterization of a stress-induced alternate sigma factor, RpoS, of *Coxiella burnetii* and its expression during the development cycle. *Infect Immun* **69**:4874-83.
This paper reports the cloning and characterization of the major sigma factor of the bacterium, encoded by an *rpoD* homologue, and the stress response sigma factor, encoded by an *rpoS* homologue.
5. **Ghigo, E., C. Capo, C. H. Tung, D. Raoult, J. P. Gorvel, and J. L. Mege.** 2002. *Coxiella burnetii* survival in THP-1 monocytes involves the impairment of phagosome maturation: IFN-gamma mediates its restoration and bacterial killing. *J Immunol* **169**:4488-95.
This paper identifies factors that allow the bacterium to survive in macrophages.
6. **Howe, D., L. F. Barrows, N. M. Lindstrom, and R. A. Heinzen.** 2002. Nitric oxide inhibits *Coxiella burnetii* replication and parasitophorous vacuole maturation. *Infect Immun* **70**:5140-7.
This paper reports the effects of nitric oxide in the bacterium.
7. **Miller, J. D., and H. A. Thompson.** 2002. Permeability of *Coxiella burnetii* to ribonucleosides. *Microbiology* **148**:2393-403.
This paper reports the ability of the bacterium to uptake nucleotides.
8. **Varghees, S., K. Kiss, G. Frans, O. Braha, and J. E. Samuel.** 2002. Cloning and porin activity of the major outer membrane protein P1 from *Coxiella burnetii*. *Infect Immun* **70**:6741-50.
This paper reports the cloning and characterization of a protein of the bacterium.
9. **Brennan, R. E., and J. E. Samuel.** 2003. Evaluation of *Coxiella burnetii* antibiotic susceptibilities by real-time PCR assay. *J Clin Microbiol* **41**:1869-74.
This paper reports the antibiotic resistance profile of the bacterium.
10. **Capo, C., A. Moynault, Y. Collette, D. Olive, E. J. Brown, D. Raoult, and J. L. Mege.** 2003. *Coxiella burnetii* avoids macrophage phagocytosis by interfering with spatial distribution of complement receptor 3. *J Immunol* **170**:4217-25.
This paper reports the involvement of a host factor in the bacterium's ability to evade phagocytosis.
11. **Howe, D., J. Melnicakova, I. Barak, and R. A. Heinzen.** 2003. Fusogenicity of the *Coxiella burnetii* parasitophorous vacuole. *Ann N Y Acad Sci* **990**:556-62.
This paper reports on the function of the bacterium's parasitophorous vacuole, and suggests that sustained *C. burnetii* protein synthesis is required for vacuole fusion with other vacuoles of the endocytic pathway.
12. **Howe, D., J. Melnicakova, I. Barak, and R. A. Heinzen.** 2003. Maturation of the *Coxiella burnetii* parasitophorous vacuole requires bacterial protein synthesis but not replication. *Cell Microbiol* **5**:469-80.
This paper reports on the function of the bacterium's parasitophorous vacuole, and that sustained *C. burnetii* protein synthesis is required for vacuole fusion with other vacuoles of the endocytic pathway, but not replication.

13. **Melnicakova, J., M. Lukacova, D. Howe, R. A. Heinzen, and I. Barak.** 2003. Identification of *Coxiella burnetii* RpoS-dependent promoters. *Ann N Y Acad Sci* **990**:591-5.
This paper describes the identification of promoters for a gene important in morphological switching of the bacterium.
14. **Ren, Q., S. J. Robertson, D. Howe, L. F. Barrows, and R. A. Heinzen.** 2003. Comparative DNA microarray analysis of host cell transcriptional responses to infection by *Coxiella burnetii* or *Chlamydia trachomatis*. *Ann N Y Acad Sci* **990**:701-13
This paper reports the transcriptional response of host cells to infection with the bacterium.
15. **Seshadri, R., I. T. Paulsen, J. A. Eisen, T. D. Read, K. E. Nelson, W. C. Nelson, N. L. Ward, H. Tettelin, T. M. Davidsen, M. J. Beanan, R. T. Deboy, S. C. Daugherty, L. M. Brinkac, R. Madupu, R. J. Dodson, H. M. Khouri, K. H. Lee, H. A. Carty, D. Scanlan, R. A. Heinzen, H. A. Thompson, J. E. Samuel, C. M. Fraser, and J. F. Heidelberg.** 2003. Complete genome sequence of the Q-fever pathogen *Coxiella burnetii*. *Proc Natl Acad Sci U S A* **100**:5455-60.
This paper reports the complete genomic sequence of the bacterium.
16. **Zamboni, D. S., S. McGrath, M. Rabinovitch, and C. R. Roy.** 2003. *Coxiella burnetii* express type IV secretion system proteins that function similarly to components of the *Legionella pneumophila* Dot/Icm system. *Mol Microbiol* **49**:965-76.
This paper reports the identification of type IV secretion systems in the bacterium.
17. **Zhang, G. Q., and J. E. Samuel.** 2003. Identification and cloning potentially protective antigens of *Coxiella burnetii* using sera from mice experimentally infected with Nine Mile phase I. *Ann N Y Acad Sci* **990**:510-20.
This paper reports the identification of protective antigens for the prevention of infection with the bacterium.
18. **Brennan, R. E., K. Russell, G. Zhang, and J. E. Samuel.** 2004. Both inducible nitric oxide synthase and NADPH oxidase contribute to the control of virulent phase I *Coxiella burnetii* infections. *Infect Immun* **72**:6666-75.
This paper identifies two host proteins that control the bacterium after infection.
19. **Coleman, S. A., E. R. Fischer, D. Howe, D. J. Mead, and R. A. Heinzen.** 2004. Temporal analysis of *Coxiella burnetii* morphological differentiation. *J Bacteriol* **186**:7344-52.
This paper describes the morphology of the bacterium.
20. **Miller, J. D., A. T. Curns, and H. A. Thompson.** 2004. A growth study of *Coxiella burnetii* Nine Mile Phase I and Phase II in fibroblasts. *FEMS Immunol Med Microbiol* **42**:291-7.
This paper reports growth characteristics of a avirulent strain of the bacterium.
21. **Shaw, E. I., H. Moura, A. R. Woolfitt, M. Ospina, H. A. Thompson, and J. R. Barr.** 2004. Identification of biomarkers of whole *Coxiella burnetii* phase I by MALDI-TOF mass spectrometry. *Anal Chem* **76**:4017-22.
This paper reports the identification of biomarkers of the bacterium.
22. **Zamboni, D. S., M. A. Campos, A. C. Torrecilhas, K. Kiss, J. E. Samuel, D. T. Golenbock, F. N. Lauw, C. R. Roy, I. C. Almeida, and R. T. Gazzinelli.** 2004.

Stimulation of toll-like receptor 2 by *Coxiella burnetii* is required for macrophage production of pro-inflammatory cytokines and resistance to infection. *J Biol Chem* **279**:54405-15.

This paper identifies a key factor in the innate immune response to infection with the bacterium.

23. **Zhang, G., K. Kiss, R. Seshadri, L. R. Hendrix, and J. E. Samuel.** 2004. Identification and cloning of immunodominant antigens of *Coxiella burnetii*. *Infect Immun* **72**:844-52.

This paper reports the identification of protective antigens for the prevention of infection with the bacterium.

24. **Zhang, G., H. To, K. E. Russell, L. R. Hendrix, T. Yamaguchi, H. Fukushi, K. Hirai, and J. E. Samuel.** 2005. Identification and characterization of an immunodominant 28-kilodalton *Coxiella burnetii* outer membrane protein specific to isolates associated with acute disease. *Infect Immun* **73**:1561-7.

This paper reports the identification of a protective antigen for the prevention of infection with the bacterium.

NIH Grants:

1	100	1P2ORR015553-010005	HEINZEN, ROBERT	<u>NITRIC OXIDE AND OBLIGATE PARASITISM</u>
Total: \$6,566,635			<ul style="list-style-type: none"> • \$1,067,446 2004 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY • \$1,198,780 2003 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY • \$1,342,457 2002 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY • \$1,396,484 2001 Bohle, David S UNIVERSITY OF WYOMING LARAMIE, WY • \$1,561,468 2000 BOHLE, DAVID S UNIVERSITY OF WYOMING LARAMIE, WY 	
2	100	1Z01AI000931-01	HEINZEN, ROBERT	<u>Cellular and Developmental Biology of <i>Coxiella burnetii</i></u>
3	100	1Z01AI000931-02	HEINZEN, ROBERT	<u>Cellular and Developmental Biology of <i>Coxiella burnetii</i></u>
4	100	1Z01AI000946-01	HEINZEN, ROBERT	<u>Genetics of <i>Coxiella burnetii</i></u>
5	100	2R01AI037744-06A2	SAMUEL, JAMES	<u>Pathogenic Roles of <i>Coxiella burnetii</i> Proteins</u>
Total: \$882,283			<ul style="list-style-type: none"> • \$372,541 2005 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$18,679 2004 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX • \$327,375 2004 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX 	

				<ul style="list-style-type: none"> \$163,688 2003 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX
6	100	2R21AI037744-06	SAMUEL, JAMES	<u>PATHOGENIC ROLES OF COXIELLA BURNETTI SURFACE PROTEINS</u>
Total: \$313,000				<ul style="list-style-type: none"> \$313,000 2000 SAMUEL, JAMES E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX
7	100	1R21AI058083-01A1	VOGEL, JOSEPH	<u>Characterization of the Coxiella Dot/Icm homologues</u>
Total: \$267,750				<ul style="list-style-type: none"> \$267,750 2005 Vogel, Joseph P ORION GENOMICS, LLC ST. LOUIS, MO
8	77	1U01AI049034-01	HEIDELBERG, JOHN	<u>WHOLE GENOME SEQUENCING OF COXIELLA BURNETTI</u>
Total: \$607,559				<ul style="list-style-type: none"> \$607,559 2000 HEIDELBERG, JOHN F INSTITUTE FOR GENOMIC RESEARCH ROCKVILLE, MD
9	77	1K08AI055664-01	RUSSELL, KASI	<u>An Inhalation Model of Q Fever in Guinea Pigs</u>
Total: \$223,310				<ul style="list-style-type: none"> \$112,986 2004 Russell, Kasi E TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX \$110,324 2003 Russell, Kasi E TEXAS A&M UNIVERSITY SYSTEM COLLEGE STATION, TX
10	77	1R01AI057768-01A2	SAMUEL, JAMES	<u>Identification of T Cell Antigen For Q Fever Vaccination</u>
Total: \$376,750				<ul style="list-style-type: none"> \$376,750 2005 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX
11	62	1R01AI048829-01	SAMUEL, JAMES	<u>VACCINE INTERVENTION AGAINST Q FEVER</u>
Total: \$1,148,695				<ul style="list-style-type: none"> \$252,000 2003 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX \$252,000 2002 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX \$392,695 2001 Samuel, James E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX \$252,000 2000 SAMUEL, JAMES E TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR COLLEGE STATION, TX
12	46	1U54AI057156-010006	SAMUEL, JAMES	<u>Rapid Diagnostic Tools for Q Fever</u>
Total: \$27,834,107				<ul style="list-style-type: none"> \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL

	BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX
--	--

Eastern equine encephalitis virus

Taxonomy: Family *Togaviridae*, Genus *Alphavirus*, Species *Eastern equine encephalitis virus*,

Virus: Eastern equine encephalitis virus

Publications:

1. **Cooper, L. A., B. J. Sina, M. J. Turell, and T. W. Scott.** 2000. Effects of initial dose on eastern equine encephalomyelitis virus dependent mortality in intrathoracically inoculated *Culiseta melanura* (Diptera: Culicidae). *J Med Entomol* **37**:815-9.
This paper the effects of the infecting dose of the virus on the survival of intrathoracically inoculated mosquitoes.
2. **Brown, T. M., C. J. Mitchell, R. S. Nasci, G. C. Smith, and J. T. Roehrig.** 2001. Detection of eastern equine encephalitis virus in infected mosquitoes using a monoclonal antibody-based antigen-capture enzyme-linked immunosorbent assay. *Am J Trop Med Hyg* **65**:208-13.
This paper describes the development of an ELISA system for the detection of the virus.
3. **Cooper, L. A., and T. W. Scott.** 2001. Differential evolution of eastern equine encephalitis virus populations in response to host cell type. *Genetics* **157**:1403-12.
This paper describes how repeatedly transferred strains of the virus through either mosquito or avian cells or in alternating passages between these two cell types leads to the evolution of new strains.
4. **Schoepp, R. J., J. F. Smith, and M. D. Parker.** 2002. Recombinant chimeric western and eastern equine encephalitis viruses as potential vaccine candidates. *Virology* **302**:299-309.
This paper reports the construction of attenuated vaccine-candidate chimeric viruses constructed of parts from Western and Eastern encephalitis viruses.
5. **Lambert, A. J., D. A. Martin, and R. S. Lanciotti.** 2003. Detection of North American eastern and western equine encephalitis viruses by nucleic acid amplification assays. *J Clin Microbiol* **41**:379-85.
This paper reports the developed of a nucleic acid sequence-based amplification, standard reverse transcription PCR, and TaqMan nucleic acid amplification assays for the rapid detection of Eastern equine encephalitis viral RNAs from samples collected in the field and clinical samples.
6. **Nasci, R. S., K. L. Gottfried, K. L. Burkhalter, J. R. Ryan, E. Emmerich, and K. Dave.** 2003. Sensitivity of the VecTest antigen assay for eastern equine encephalitis and western equine encephalitis viruses. *J Am Mosq Control Assoc* **19**:440-4.

- This paper reports the evaluation of a diagnostic assay for the virus.
7. **Ryan, J., K. Dave, E. Emmerich, B. Fernandez, M. Turell, J. Johnson, K. Gottfried, K. Burkhalter, A. Kerst, A. Hunt, R. Wirtz, and R. Nasci.** 2003. Wicking assays for the rapid detection of West Nile and St. Louis encephalitis viral antigens in mosquitoes (Diptera: Culicidae). *J Med Entomol* **40**:95-9.
This paper reports the development of a new diagnostic assay for the virus.
 8. **O'Guinn, M. L., J. S. Lee, J. P. Kondig, R. Fernandez, and F. Carbajal.** 2004. Field detection of eastern equine encephalitis virus in the Amazon Basin region of Peru using reverse transcription-polymerase chain reaction adapted for field identification of arthropod-borne pathogens. *Am J Trop Med Hyg* **70**:164-71.
This paper reports the development of a PCR-based diagnostic assay for the detection of the virus in the field.
 9. **Paessler, S., P. Aguilar, M. Anishchenko, H. Q. Wang, J. Aronson, G. Campbell, A. S. Cararra, and S. C. Weaver.** 2004. The hamster as an animal model for eastern equine encephalitis--and its use in studies of virus entrance into the brain. *J Infect Dis* **189**:2072-6.
This paper reports the development of a hamster model for the disease caused by the virus.
 10. **Vogel, P., W. M. Kell, D. L. Fritz, M. D. Parker, and R. J. Schoepp.** 2005. Early events in the pathogenesis of eastern equine encephalitis virus in mice. *Am J Pathol* **166**:159-71.
This paper describes the pathology of mice infected with the virus.

NIH Grants:

1	37	1U54AI057156-010003	WEAVER, SCOTT	<u>Alphavirus Vaccines for Biodefense</u>
Total: \$27,834,107 *			<ul style="list-style-type: none"> • \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	

Ehrlichia ruminantium (formerly known as Cowdria ruminantium)

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Alphaproteobacteria*, Order

Rickettsiales, Family *Ehrlichiaeae*.

Publications:

1. **Bell-Sakyi, L., E. A. Paxton, U. G. Munderloh, and K. J. Sumption.** 2000. Growth of *Cowdria ruminantium*, the causative agent of heartwater, in a tick cell line. *J Clin Microbiol* **38**:1238-40.
This paper describes a tick-derived cell line that supports growth of the bacterium.
2. **Byrom, B., A. F. Barbet, M. Obwolo, and S. M. Mahan.** 2000. CD8(+) T cell knockout mice are less susceptible to *Cowdria ruminantium* infection than athymic, CD4(+) T cell knockout, and normal C57BL/6 mice. *Vet Parasitol* **93**:159-72.
This paper reports the different susceptibilities of certain mice strains to the bacterium, and that immunity to the agent is mediated by both CD4 and CD8 cells.
3. **de Villiers, E. P., K. A. Brayton, E. Zweygarth, and B. A. Allsopp.** 2000. Genome size and genetic map of *Cowdria ruminantium*. *Microbiology* **146 (Pt 10)**:2627-34.
This paper presents a complete physical map and a preliminary genetic map for the bacterium
4. **Peter, T. F., A. F. Barbet, A. R. Alleman, B. H. Simbi, M. J. Burrridge, and S. M. Mahan.** 2000. Detection of the agent of heartwater, *Cowdria ruminantium*, in *Amblyomma* ticks by PCR: validation and application of the assay to field ticks. *J Clin Microbiol* **38**:1539-44.
This paper reports the valuation of a PCR assay used to detect the bacterium in ticks in the field.
5. **Peter, T. F., M. J. Burrridge, and S. M. Mahan.** 2000. Competence of the African tortoise tick, *Amblyomma marmoratum* (Acari: Ixodidae), as a vector of the agent of heartwater (*Cowdria ruminantium*). *J Parasitol* **86**:438-41.
This paper reports the ability of a certain tick species to support replication of the bacterium.
6. **Shompole, S., F. R. Rurangirwa, A. Wambugu, J. Sitienei, D. M. Mwangi, A. J. Musoke, S. Mahan, C. W. Wells, and T. C. McGuire.** 2000. Monoclonal antibody binding to a surface-exposed epitope on *Cowdria ruminantium* that is conserved among eight strains. *Clin Diagn Lab Immunol* **7**:983-6.
This paper reports the isolation of an antibody that detects eight strains of the bacterium.
7. **Van Kleef, M., N. J. Gunter, H. Macmillan, B. A. Allsopp, V. Shkap, and W. C. Brown.** 2000. Identification of *Cowdria ruminantium* antigens that stimulate proliferation of lymphocytes from cattle immunized by infection and treatment or with inactivated organisms. *Infect Immun* **68**:603-14.
This paper reports the identification of several antigens of the bacterium that could be used for vaccine development.
8. **Barbet, A. F., W. M. Whitmire, S. M. Kamper, B. H. Simbi, R. R. Ganta, A. L. Moreland, D. M. Mwangi, T. C. McGuire, and S. M. Mahan.** 2001. A subset of *Cowdria ruminantium* genes important for immune recognition and protection. *Gene* **275**:287-98.
This paper reports the identification and sequencing of a subset of recombinant genes encoding antigens recognized by antibody and peripheral blood mononuclear cells from ruminants immune to the bacterium.

9. **Peter, T. F., S. M. Mahan, and M. J. Burridge.** 2001. Resistance of leopard tortoises and helmeted guineafowl to *Cowdria ruminantium* infection (heartwater). *Vet Parasitol* **98**:299-307.
This paper reports that leopard tortoises and helmeted guineafowl is resistant to the agent.
10. **Semu, S. M., T. F. Peter, D. Mukwedeya, A. F. Barbet, F. Jongejan, and S. M. Mahan.** 2001. Antibody responses to MAP 1B and other *Cowdria ruminantium* antigens are down regulated in cattle challenged with tick-transmitted heartwater. *Clin Diagn Lab Immunol* **8**:388-96.
This paper reports that cattle antibody responses to certain antigens of the bacterium are downregulated in infected animals.
11. **Mwangi, D. M., D. J. McKeever, J. K. Nyanjui, A. F. Barbet, and S. M. Mahan.** 2002. Immunisation of cattle against heartwater by infection with *Cowdria ruminantium* elicits T lymphocytes that recognise major antigenic proteins 1 and 2 of the agent. *Vet Immunol Immunopathol* **85**:23-32.
This paper reports the examination T cell responses against recombinant analogues of surface-exposed *Ehrlichia ruminantium* antigens in cattle immunised by infection and treatment.
12. **Nyika, A., A. F. Barbet, M. J. Burridge, and S. M. Mahan.** 2002. DNA vaccination with map1 gene followed by protein boost augments protection against challenge with *Cowdria ruminantium*, the agent of heartwater. *Vaccine* **20**:1215-25.
This paper reports the results of a DNA vaccination approach.
13. **Pretorius, A., F. Van Strijp, K. A. Brayton, N. E. Collins, and B. A. Allsopp.** 2002. Genetic immunization with *Ehrlichia ruminantium* GroEL and GroES homologues. *Ann N Y Acad Sci* **969**:151-4.
This paper reports the results of a DNA vaccination approach.
14. **van Heerden, H., N. E. Collins, K. A. Brayton, C. Rademeyer, and B. A. Allsopp.** 2004. Characterization of a major outer membrane protein multigene family in *Ehrlichia ruminantium*. *Gene* **330**:159-68.
This paper reports the discovery of an outer membrane protein family in the bacterium.
15. **Collins, N. E., J. Liebenberg, E. P. de Villiers, K. A. Brayton, E. Louw, A. Pretorius, F. E. Faber, H. van Heerden, A. Josemans, M. van Kleef, H. C. Steyn, M. F. van Strijp, E. Zwegarth, F. Jongejan, J. C. Maillard, D. Berthier, M. Botha, F. Joubert, C. H. Corton, N. R. Thomson, M. T. Allsopp, and B. A. Allsopp.** 2005. The genome of the heartwater agent *Ehrlichia ruminantium* contains multiple tandem repeats of actively variable copy number. *Proc Natl Acad Sci U S A* **102**:838-43.
This paper reports the sequence of the genome of the bacterium.

NIH Grants: None identified.

Foot and mouth disease virus

Taxonomy: Family *Picornaviridae*, Genus *Aphthovirus*, Species *Foot and mouth disease virus*,

Virus: Foot and mouth disease virus.

Publications:

1. **Beard, C. W., and P. W. Mason.** 2000. Genetic determinants of altered virulence of Taiwanese foot-and-mouth disease virus. *J Virol* **74**:987-91.
This paper describes molecular virulence determinants of the virus.
2. **Brown, C. C., J. Chinsangaram, and M. J. Grubman.** 2000. Type I interferon production in cattle infected with 2 strains of foot-and-mouth disease virus, as determined by in situ hybridization. *Can J Vet Res* **64**:130-3.
This paper reports the interferon response of cattle infected with the virus.
3. **Burrage, T., E. Kramer, and F. Brown.** 2000. Structural differences between foot-and-mouth disease and poliomyelitis viruses influence their inactivation by aziridines. *Vaccine* **18**:2454-61.
This paper reports the susceptibility of the virus to a potential antiviral agent.
4. **Jackson, T., D. Sheppard, M. Denyer, W. Blakemore, and A. M. King.** 2000. The epithelial integrin alpha(v)beta6 is a receptor for foot-and-mouth disease virus. *J Virol* **74**:4949-56.
This paper reports the identification of a receptor for the virus.
5. **Konet, D. S., J. M. Mezencio, G. Babcock, and F. Brown.** 2000. Inhibitors of RT-PCR in serum. *J Virol Methods* **84**:95-8.
This paper reports problems with amplifying the genome of the virus.
6. **Neff, S., P. W. Mason, and B. Baxt.** 2000. High-efficiency utilization of the bovine integrin alpha(v)beta(3) as a receptor for foot-and-mouth disease virus is dependent on the bovine beta(3) subunit. *J Virol* **74**:7298-306.
This paper reports specifics of the interaction of the virus with one of its receptors.
7. **Chinsangaram, J., M. Koster, and M. J. Grubman.** 2001. Inhibition of L-deleted foot-and-mouth disease virus replication by alpha/beta interferon involves double-stranded RNA-dependent protein kinase. *J Virol* **75**:5498-503.
This paper reports the specifics of the interferon-response to infection with the virus.
8. **Knowles, N. J., P. R. Davies, T. Henry, V. O'Donnell, J. M. Pacheco, and P. W. Mason.** 2001. Emergence in Asia of foot-and-mouth disease viruses with altered host range: characterization of alterations in the 3A protein. *J Virol* **75**:1551-6.
This paper reports the molecular characterization of novel strains of the virus.
9. **Mayr, G. A., V. O'Donnell, J. Chinsangaram, P. W. Mason, and M. J. Grubman.** 2001. Immune responses and protection against foot-and-mouth disease virus (FMDV) challenge in swine vaccinated with adenovirus-FMDV constructs. *Vaccine* **19**:2152-62.
This paper reports the evaluation of a vaccine candidate.

10. **Miller, L. C., W. Blakemore, D. Sheppard, A. Atakilit, A. M. King, and T. Jackson.** 2001. Role of the cytoplasmic domain of the beta-subunit of integrin alpha(v)beta6 in infection by foot-and-mouth disease virus. *J Virol* **75**:4158-64.
This paper reports specifics of the interaction of the virus with one of its receptors.
11. **Neff, S., and B. Baxt.** 2001. The ability of integrin alpha(v)beta(3) To function as a receptor for foot-and-mouth disease virus is not dependent on the presence of complete subunit cytoplasmic domains. *J Virol* **75**:527-32.
This paper reports specifics of the interaction of the virus with one of its receptors.
12. **O'Donnell, V. K., J. M. Pacheco, T. M. Henry, and P. W. Mason.** 2001. Subcellular distribution of the foot-and-mouth disease virus 3A protein in cells infected with viruses encoding wild-type and bovine-attenuated forms of 3A. *Virology* **287**:151-62.
This paper reports the intracellular distribution of a protein of the virus.
13. **Wang, C. Y., T. Y. Chang, A. M. Walfield, J. Ye, M. Shen, M. L. Zhang, J. Lubroth, S. P. Chen, M. C. Li, Y. L. Lin, M. H. Jong, P. C. Yang, N. Chyr, E. Kramer, and F. Brown.** 2001. Synthetic peptide-based vaccine and diagnostic system for effective control of FMD. *Biologicals* **29**:221-8.
This paper reports the evaluation of a vaccine candidate.
14. **Callahan, J. D., F. Brown, F. A. Osorio, J. H. Sur, E. Kramer, G. W. Long, J. Lubroth, S. J. Ellis, K. S. Shoulars, K. L. Gaffney, D. L. Rock, and W. M. Nelson.** 2002. Use of a portable real-time reverse transcriptase-polymerase chain reaction assay for rapid detection of foot-and-mouth disease virus. *J Am Vet Med Assoc* **220**:1636-42.
This paper reports the evaluation of a detection system.
15. **Capozzo, A. V., D. J. Burke, J. W. Fox, I. E. Bergmann, J. L. La Torre, and P. R. Grigera.** 2002. Expression of foot and mouth disease virus non-structural polypeptide 3ABC induces histone H3 cleavage in BHK21 cells. *Virus Res* **90**:91-9.
This paper reports the functional characterization of a protein of the virus.
16. **Jackson, T., A. P. Mould, D. Sheppard, and A. M. King.** 2002. Integrin alphavbeta1 is a receptor for foot-and-mouth disease virus. *J Virol* **76**:935-41.
This paper reports the identification of a receptor for the virus.
17. **Lazo, A., J. Tassello, V. Jayarama, A. Ohagen, V. Gibaja, E. Kramer, A. Marmorato, D. Billia-Shaveet, A. Purmal, F. Brown, and J. Chapman.** 2002. Broad-spectrum virus reduction in red cell concentrates using INACTINE PEN110 chemistry. *Vox Sang* **83**:313-23.
This paper reports the evaluation of a virus-inactivating substance.
18. **Mason, P. W., S. V. Bezborodova, and T. M. Henry.** 2002. Identification and characterization of a cis-acting replication element (cre) adjacent to the internal ribosome entry site of foot-and-mouth disease virus. *J Virol* **76**:9686-94.
This paper reports the identification of a gene-regulating sequence in the genome of the virus.
19. **Moraes, M. P., G. A. Mayr, P. W. Mason, and M. J. Grubman.** 2002. Early protection against homologous challenge after a single dose of replication-defective human adenovirus type 5 expressing capsid proteins of foot-and-mouth disease virus (FMDV) strain A24. *Vaccine* **20**:1631-9.
This paper reports the evaluation of a vaccine candidate.

20. **Van Rensburg, H. G., and P. W. Mason.** 2002. Construction and evaluation of a recombinant foot-and-mouth disease virus: implications for inactivated vaccine production. *Ann N Y Acad Sci* **969**:83-7.
This paper reports the development of a vaccine candidate.
21. **Wang, C. Y., T. Y. Chang, A. M. Walfield, J. Ye, M. Shen, S. P. Chen, M. C. Li, Y. L. Lin, M. H. Jong, P. C. Yang, N. Chyr, E. Kramer, and F. Brown.** 2002. Effective synthetic peptide vaccine for foot-and-mouth disease in swine. *Vaccine* **20**:2603-10.
This paper reports the development of a vaccine candidate.
22. **Amass, S. F., J. M. Pacheco, P. W. Mason, J. L. Schneider, R. M. Alvarez, L. K. Clark, and D. Ragland.** 2003. Procedures for preventing the transmission of foot-and-mouth disease virus to pigs and sheep by personnel in contact with infected pigs. *Vet Rec* **153**:137-40.
This paper reports methods for preventing the transmission of the virus.
23. **Bautista, E. M., G. S. Ferman, and W. T. Golde.** 2003. Induction of lymphopenia and inhibition of T cell function during acute infection of swine with foot and mouth disease virus (FMDV). *Vet Immunol Immunopathol* **92**:61-73.
This paper reports the immunopathology of swine after infection with the virus.
24. **Chinsangaram, J., M. P. Moraes, M. Koster, and M. J. Grubman.** 2003. Novel viral disease control strategy: adenovirus expressing alpha interferon rapidly protects swine from foot-and-mouth disease. *J Virol* **77**:1621-5.
This paper reports the development of a vaccine candidate.
25. **Duque, H., and B. Baxt.** 2003. Foot-and-mouth disease virus receptors: comparison of bovine alpha(V) integrin utilization by type A and O viruses. *J Virol* **77**:2500-11.
This paper reports the comparison of receptors used by different strains of the virus.
26. **Fischer, D., D. Rood, R. W. Barrette, A. Zuwallack, E. Kramer, F. Brown, and L. K. Silbart.** 2003. Intranasal immunization of guinea pigs with an immunodominant foot-and-mouth disease virus peptide conjugate induces mucosal and humoral antibodies and protection against challenge. *J Virol* **77**:7486-91.
This paper reports the evaluation of a vaccine candidate.
27. **Kweon, C. H., Y. J. Ko, W. I. Kim, S. Y. Lee, J. J. Nah, K. N. Lee, H. J. Sohn, K. S. Choi, B. H. Hyun, S. W. Kang, Y. S. Joo, and J. Lubroth.** 2003. Development of a foot-and-mouth disease NSP ELISA and its comparison with differential diagnostic methods. *Vaccine* **21**:1409-14.
This paper reports the development of a diagnostic system.
28. **Mason, P. W., J. Chinsangaram, M. P. Moraes, G. A. Mayr, and M. J. Grubman.** 2003. Engineering better vaccines for foot-and-mouth disease. *Dev Biol (Basel)* **114**:79-88.
This paper reports the development of new vaccine candidate.
29. **Mason, P. W., J. M. Pacheco, Q. Z. Zhao, and N. J. Knowles.** 2003. Comparisons of the complete genomes of Asian, African and European isolates of a recent foot-and-mouth disease virus type O pandemic strain (PanAsia). *J Gen Virol* **84**:1583-93.
This paper reports the genomic comparisons of different strains of the virus.
30. **Moraes, M. P., J. Chinsangaram, M. C. Brum, and M. J. Grubman.** 2003. Immediate protection of swine from foot-and-mouth disease: a combination of adenoviruses

expressing interferon alpha and a foot-and-mouth disease virus subunit vaccine. *Vaccine* **22**:268-79.

This paper reports the evaluation of a vaccine candidate.

31. **Pacheco, J. M., T. M. Henry, V. K. O'Donnell, J. B. Gregory, and P. W. Mason.** 2003. Role of nonstructural proteins 3A and 3B in host range and pathogenicity of foot-and-mouth disease virus. *J Virol* **77**:13017-27.
This paper reports that proteins of the virus are determinants of host range and virulence.
32. **Pantarotto, D., C. D. Partidos, J. Hoebeker, F. Brown, E. Kramer, J. P. Briand, S. Muller, M. Prato, and A. Bianco.** 2003. Immunization with peptide-functionalized carbon nanotubes enhances virus-specific neutralizing antibody responses. *Chem Biol* **10**:961-6.
This paper reports the evaluation of a vaccine candidate.
33. **Rodriguez, L. L., J. Barrera, E. Kramer, J. Lubroth, F. Brown, and W. T. Golde.** 2003. A synthetic peptide containing the consensus sequence of the G-H loop region of foot-and-mouth disease virus type-O VP1 and a promiscuous T-helper epitope induces peptide-specific antibodies but fails to protect cattle against viral challenge. *Vaccine* **21**:3751-6.
This paper reports the evaluation of a vaccine candidate.
34. **Wu, Q., M. C. Brum, L. Caron, M. Koster, and M. J. Grubman.** 2003. Adenovirus-mediated type I interferon expression delays and reduces disease signs in cattle challenged with foot-and-mouth disease virus. *J Interferon Cytokine Res* **23**:359-68.
This paper reports the evaluation of a vaccine candidate.
35. **Wu, Q., M. P. Moraes, and M. J. Grubman.** 2003. Recombinant adenovirus co-expressing capsid proteins of two serotypes of foot-and-mouth disease virus (FMDV): in vitro characterization and induction of neutralizing antibodies against FMDV in swine. *Virus Res* **93**:211-9.
This paper reports the evaluation of a vaccine candidate.
36. **Zhao, Q., J. M. Pacheco, and P. W. Mason.** 2003. Evaluation of genetically engineered derivatives of a Chinese strain of foot-and-mouth disease virus reveals a novel cell-binding site which functions in cell culture and in animals. *J Virol* **77**:3269-80.
This paper reports the characterization of a novel strain of the virus.
37. **Aarthi, D., K. Ananda Rao, R. Robinson, and V. A. Srinivasan.** 2004. Validation of binary ethyleneimine (BEI) used as an inactivant for foot and mouth disease tissue culture vaccine. *Biologicals* **32**:153-6.
This paper reports the evaluation of a chemical inactivating agent.
38. **Clavijo, A., E. M. Zhou, K. Hole, B. Galic, and P. Kitching.** 2004. Development and use of a biotinylated 3ABC recombinant protein in a solid-phase competitive ELISA for the detection of antibodies against foot-and-mouth disease virus. *J Virol Methods* **120**:217-27.
This paper reports the evaluation of a diagnostic system.
39. **Duque, H., M. LaRocco, W. T. Golde, and B. Baxt.** 2004. Interactions of foot-and-mouth disease virus with soluble bovine alphaVbeta3 and alphaVbeta6 integrins. *J Virol* **78**:9773-81.
This paper reports the characterization of the interaction of the virus with its receptors.

40. **Jackson, T., S. Clark, S. Berryman, A. Burman, S. Cambier, D. Mu, S. Nishimura, and A. M. King.** 2004. Integrin alphavbeta8 functions as a receptor for foot-and-mouth disease virus: role of the beta-chain cytodomain in integrin-mediated infection. *J Virol* **78**:4533-40.
This paper reports the characterization of the interaction of the virus with one of its receptors.
41. **van Rensburg, H. G., T. M. Henry, and P. W. Mason.** 2004. Studies of genetically defined chimeras of a European type A virus and a South African Territories type 2 virus reveal growth determinants for foot-and-mouth disease virus. *J Gen Virol* **85**:61-8.
This paper reports the characterization of recombinant strains of the virus.
42. **Bautista, E. M., G. S. Ferman, D. Gregg, M. C. Brum, M. J. Grubman, and W. T. Golde.** 2005. Constitutive expression of alpha interferon by skin dendritic cells confers resistance to infection by foot-and-mouth disease virus. *J Virol* **79**:4838-47.
This paper reports the molecular basis of resistance of dendritic cells to infection with the virus.
43. **Beignon, A. S., F. Brown, P. Eftekhari, E. Kramer, J. P. Briand, S. Muller, and C. D. Partidos.** 2005. A peptide vaccine administered transcutaneously together with cholera toxin elicits potent neutralising anti-FMDV antibody responses. *Vet Immunol Immunopathol* **104**:273-80.
This paper reports the evaluation of a vaccine candidate.
44. **Carrillo, C., E. R. Tulman, G. Delhon, Z. Lu, A. Carreno, A. Vagnozzi, G. F. Kutish, and D. L. Rock.** 2005. Comparative genomics of foot-and-mouth disease virus. *J Virol* **79**:6487-504.
This paper reports the comparison of the genomic sequences of different strains of the virus.
45. **de los Santos, T., Q. Wu, S. de Avila Botton, and M. J. Grubman.** 2005. Short hairpin RNA targeted to the highly conserved 2B nonstructural protein coding region inhibits replication of multiple serotypes of foot-and-mouth disease virus. *Virology* **335**:222-31.
This paper reports the development of a potential antiviral.
46. **Dus Santos, M. J., C. Carrillo, F. Ardila, R. D. Rios, P. Franzone, M. E. Piccone, A. Wigdorovitz, and M. V. Borca.** 2005. Development of transgenic alfalfa plants containing the foot and mouth disease virus structural polyprotein gene P1 and its utilization as an experimental immunogen. *Vaccine* **23**:1838-43.
This paper reports the development of a vaccine candidate.
47. **O'Donnell, V., M. LaRocco, H. Duque, and B. Baxt.** 2005. Analysis of foot-and-mouth disease virus internalization events in cultured cells. *J Virol* **79**:8506-18.
This paper reports characteristics of the cell-entry process of the virus.
48. **Pacheco, J. M., M. C. Brum, M. P. Moraes, W. T. Golde, and M. J. Grubman.** 2005. Rapid protection of cattle from direct challenge with foot-and-mouth disease virus (FMDV) by a single inoculation with an adenovirus-vectored FMDV subunit vaccine. *Virology* **337**:205-209.
This paper reports the evaluation of a vaccine candidate.

NIH Grants: None identified.

Flexal virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species: *Flexal virus*. Virus: Flexal virus,

BeAn 293022 virus.

Publications:

1. **Christina F. Spiropoulou, Stefan Kunz, Pierre E. Rollin, Kevin P. Campbell, and Michael B. A. Oldstone.** 2002. New World Arenavirus Clade C, but Not Clade A and B Viruses, Utilizes α -Dystroglycan as Its Major Receptor. *J Virol* **76**:51406.
This paper comes to the conclusion that Flexal, Guanarító, Machupo, and Sabiá viruses do not use the Lassa fever virus receptor α -Dystroglycan.
2. **Angela M. Archer, and Rebeca Rico-Hesse.** 2002. High Genetic Divergence and Recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarító, Junín, Lassa fever, Machupo, and Sabiá viruses, and their evolutionary and functional relationships.

NIH Grants:

1	20	1R21AI053428-01	FULHORST, CHARLES	<u>Rapid, accurate diagnostics for arenaviral infections</u>
Total: \$447,000		<ul style="list-style-type: none"> • \$223,500 2003 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$223,500 2002 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 		

Francisella tularensis

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Gammaproteobacteria*, Order *Thiotrichales*, Family *Francisellaceae*.

Publications:

1. **Anderson, G. P., K. D. King, K. L. Gaffney, and L. H. Johnson.** 2000. Multi-analyte interrogation using the fiber optic biosensor. *Biosens Bioelectron* **14**:771-7.
This paper reports the evaluation of the portable, automated fiber optic biosensor, RAPTOR developed to perform rapid fluoroimmunoassays in the field.
2. **Dreisbach, V. C., S. Cowley, and K. L. Elkins.** 2000. Purified lipopolysaccharide from *Francisella tularensis* live vaccine strain (LVS) induces protective immunity against LVS infection that requires B cells and gamma interferon. *Infect Immun* **68**:1988-96.
This paper reports that a lipopolysaccharide from the vaccine strain of the bacterium alone is sufficient to provide protection against challenge.
3. **Grunow, R., W. Splettstoesser, S. McDonald, C. Otterbein, T. O'Brien, C. Morgan, J. Aldrich, E. Hofer, E. J. Finke, and H. Meyer.** 2000. Detection of *Francisella tularensis* in biological specimens using a capture enzyme-linked immunosorbent assay, an immunochromatographic handheld assay, and a PCR. *Clin Diagn Lab Immunol* **7**:86-90.
This paper evaluates different diagnostic assays for the detection of the bacterium.
4. **Higgins, J. A., Z. Hubalek, J. Halouzka, K. L. Elkins, A. Sjostedt, M. Shipley, and M. S. Ibrahim.** 2000. Detection of *Francisella tularensis* in infected mammals and vectors using a probe-based polymerase chain reaction. *Am J Trop Med Hyg* **62**:310-8.
This paper evaluates a PCR-based diagnostic assays for the detection of the bacterium.
5. **Johansson, A., A. Ibrahim, I. Goransson, U. Eriksson, D. Gurycova, J. E. Clarridge, 3rd, and A. Sjostedt.** 2000. Evaluation of PCR-based methods for discrimination of *Francisella* species and subspecies and development of a specific PCR that distinguishes the two major subspecies of *Francisella tularensis*. *J Clin Microbiol* **38**:4180-5.
This paper evaluates a PCR-based diagnostic assays for the detection of the bacterium.
6. **O'Brien, T., L. H. Johnson, 3rd, J. L. Aldrich, S. G. Allen, L. T. Liang, A. L. Plummer, S. J. Krak, and A. A. Boiarski.** 2000. The development of immunoassays to four biological threat agents in a bidiffractive grating biosensor. *Biosens Bioelectron* **14**:815-28.
This paper reports the development of a biosensor for the detection of the agents.
7. **Bosio, C. M., and K. L. Elkins.** 2001. Susceptibility to secondary *Francisella tularensis* live vaccine strain infection in B-cell-deficient mice is associated with neutrophilia but not with defects in specific T-cell-mediated immunity. *Infect Immun* **69**:194-203.
This paper reports some immunity prerequisites associated with protection from infection with the bacterium.
8. **Farlow, J., K. L. Smith, J. Wong, M. Abrams, M. Lytle, and P. Keim.** 2001. *Francisella tularensis* strain typing using multiple-locus, variable-number tandem repeat analysis. *J Clin Microbiol* **39**:3186-92.
This paper reports the applicability of multilocus variable-number tandem repeats identification for rapid characterization and identification of isolates of the bacterium.
9. **Prior, R. G., L. Klasson, P. Larsson, K. Williams, L. Lindler, A. Sjostedt, T. Svensson, I. Tamas, B. W. Wren, P. C. Oyston, S. G. Andersson, and R. W. Titball.** 2001. Preliminary analysis and annotation of the partial genome sequence of *Francisella tularensis* strain Schu 4. *J Appl Microbiol* **91**:614-20.
This paper reports partial sequences of the genome of a strain of the bacterium.

10. **Elkins, K. L., A. Cooper, S. M. Colombini, S. C. Cowley, and T. L. Kieffer.** 2002. In vivo clearance of an intracellular bacterium, *Francisella tularensis* LVS, is dependent on the p40 subunit of interleukin-12 (IL-12) but not on IL-12 p70. *Infect Immun* **70**:1936-48. This paper reports immunity prerequisites for the clearance of the vaccine strain of this bacterium.
11. **Garcia Del Blanco, N., M. E. Dobson, A. I. Vela, V. A. De La Puente, C. B. Gutierrez, T. L. Hadfield, P. Kuhnert, J. Frey, L. Dominguez, and E. F. Rodriguez Ferri.** 2002. Genotyping of *Francisella tularensis* strains by pulsed-field gel electrophoresis, amplified fragment length polymorphism fingerprinting, and 16S rRNA gene sequencing. *J Clin Microbiol* **40**:2964-72. This paper reports a method to identify strains of the bacterium.
12. **Johansson, A., S. K. Urich, M. C. Chu, A. Sjostedt, and A. Tarnvik.** 2002. In vitro susceptibility to quinolones of *Francisella tularensis* subspecies *tularensis*. *Scand J Infect Dis* **34**:327-30. This paper reports the testing of an antibiotic for treatment of tularemia.
13. **Peruski, A. H., L. H. Johnson, 3rd, and L. F. Peruski, Jr.** 2002. Rapid and sensitive detection of biological warfare agents using time-resolved fluorescence assays. *J Immunol Methods* **263**:35-41. This paper describes a diagnostic assay for the detection of the bacterium.
14. **Cowley, S. C., and K. L. Elkins.** 2003. Multiple T cell subsets control *Francisella tularensis* LVS intracellular growth without stimulation through macrophage interferon gamma receptors. *J Exp Med* **198**:379-89. This paper sheds light on immunity prerequisites necessary for clearance of the bacterium.
15. **Emanuel, P. A., R. Bell, J. L. Dang, R. McClanahan, J. C. David, R. J. Burgess, J. Thompson, L. Collins, and T. Hadfield.** 2003. Detection of *Francisella tularensis* within infected mouse tissues by using a hand-held PCR thermocycler. *J Clin Microbiol* **41**:689-93. This paper reports the evaluation of a diagnostic assay for the detection of the bacterium.
16. **Forestal, C. A., J. L. Benach, C. Carbonara, J. K. Italo, T. J. Lisinski, and M. B. Furie.** 2003. *Francisella tularensis* selectively induces proinflammatory changes in endothelial cells. *J Immunol* **171**:2563-70. This paper reports the effects of infection with the bacterium in endothelial cells.
17. **Kieffer, T. L., S. Cowley, F. E. Nano, and K. L. Elkins.** 2003. *Francisella novicida* LPS has greater immunobiological activity in mice than *F. tularensis* LPS, and contributes to *F. novicida* murine pathogenesis. *Microbes Infect* **5**:397-403. The paper reports the comparison of the immunological properties of lipopolysaccharides isolated from the bacterium and a close relative.
18. **Versage, J. L., D. D. Severin, M. C. Chu, and J. M. Petersen.** 2003. Development of a multitarget real-time TaqMan PCR assay for enhanced detection of *Francisella tularensis* in complex specimens. *J Clin Microbiol* **41**:5492-9. This paper reports the development of a PCR-based diagnostic assay for the detection of the bacterium.

19. **Clemens, D. L., B. Y. Lee, and M. A. Horwitz.** 2004. Virulent and avirulent strains of *Francisella tularensis* prevent acidification and maturation of their phagosomes and escape into the cytoplasm in human macrophages. *Infect Immun* **72**:3204-17.
This paper reports pathophysiological events during cell entry of the bacterium.
20. **Gil, H., J. L. Benach, and D. G. Thanassi.** 2004. Presence of pili on the surface of *Francisella tularensis*. *Infect Immun* **72**:3042-7.
This paper reports the discovery of pili on the bacterium.
21. **Gilmore, R. D., Jr., R. M. Bacon, S. L. Sviat, J. M. Petersen, and S. W. Bearden.** 2004. Identification of *Francisella tularensis* genes encoding exported membrane-associated proteins using TnpHoA mutagenesis of a genomic library. *Microb Pathog* **37**:205-13.
This paper reports the identification of genes of the bacterium that encode membrane proteins.
22. **Johansson, A., J. Farlow, P. Larsson, M. Dukerich, E. Chambers, M. Bystrom, J. Fox, M. Chu, M. Forsman, A. Sjostedt, and P. Keim.** 2004. Worldwide genetic relationships among *Francisella tularensis* isolates determined by multiple-locus variable-number tandem repeat analysis. *J Bacteriol* **186**:5808-18.
This paper describes phylogenetic relationships of different strains of the bacterium.
23. **Lauriano, C. M., J. R. Barker, S. S. Yoon, F. E. Nano, B. P. Arulanandam, D. J. Hassett, and K. E. Klose.** 2004. MglA regulates transcription of virulence factors necessary for *Francisella tularensis* intraamoebae and intramacrophage survival. *Proc Natl Acad Sci U S A* **101**:4246-9.
This paper identifies genes of the bacterium that are responsible for its ability to survive in macrophages.
24. **Lindgren, H., I. Golovliov, V. Baranov, R. K. Ernst, M. Telepnev, and A. Sjostedt.** 2004. Factors affecting the escape of *Francisella tularensis* from the phagolysosome. *J Med Microbiol* **53**:953-8
This paper identifies factors that are responsible for the bacterium's ability to survive in macrophages.
25. **Maier, T. M., A. Havig, M. Casey, F. E. Nano, D. W. Frank, and T. C. Zahrt.** 2004. Construction and characterization of a highly efficient *Francisella* shuttle plasmid. *Appl Environ Microbiol* **70**:7511-9.
This paper describes a novel method to introduce mutations into the bacterium.
26. **McAvin, J. C., M. M. Morton, R. M. Roudabush, D. H. Atchley, and J. R. Hickman.** 2004. Identification of *Francisella tularensis* using real-time fluorescence polymerase chain reaction. *Mil Med* **169**:330-3.
This paper describes a PCR-based diagnostic assay used for the detection of the bacterium.
27. **Nano, F. E., N. Zhang, S. C. Cowley, K. E. Klose, K. K. Cheung, M. J. Roberts, J. S. Ludu, G. W. Letendre, A. I. Meierovics, G. Stephens, and K. L. Elkins.** 2004. A *Francisella tularensis* pathogenicity island required for intramacrophage growth. *J Bacteriol* **186**:6430-6.
This paper identifies factors that are responsible for the bacterium's ability to survive in macrophages.

28. **Pammit, M. A., V. N. Budhavarapu, E. K. Raulie, K. E. Klose, J. M. Teale, and B. P. Arulanandam.** 2004. Intranasal interleukin-12 treatment promotes antimicrobial clearance and survival in pulmonary *Francisella tularensis* subsp. *novicida* infection. *Antimicrob Agents Chemother* **48**:4513-9.
This paper describes the appliance of a cytokine for treatment of tularemia.
29. **Petersen, J. M., M. E. Schriefer, K. L. Gage, J. A. Monteneri, L. G. Carter, M. Stanley, and M. C. Chu.** 2004. Methods for enhanced culture recovery of *Francisella tularensis*. *Appl Environ Microbiol* **70**:3733-5.
This paper describes a novel method to isolate the bacterium.
30. **Phillips, N. J., B. Schilling, M. K. McLendon, M. A. Apicella, and B. W. Gibson.** 2004. Novel modification of lipid A of *Francisella tularensis*. *Infect Immun* **72**:5340-8.
This paper describes the comparison of lipid A from different *Francisella* strains.
31. **Samrakandi, M. M., C. Zhang, M. Zhang, J. Nietfeldt, J. Kim, P. C. Iwen, M. E. Olson, P. D. Fey, G. E. Duhamel, S. H. Hinrichs, J. D. Cirillo, and A. K. Benson.** 2004. Genome diversity among regional populations of *Francisella tularensis* subspecies *tularensis* and *Francisella tularensis* subspecies *holarctica* isolated from the US. *FEMS Microbiol Lett* **237**:9-17.
This paper describes phylogenetic relationships between different strains of the bacterium.
32. **Bolger, C. E., C. A. Forestal, J. K. Italo, J. L. Benach, and M. B. Furie.** 2005. The live vaccine strain of *Francisella tularensis* replicates in human and murine macrophages but induces only the human cells to secrete proinflammatory cytokines. *J Leukoc Biol*.
This paper reports that the vaccine strains of the bacterium leads to activation of human but not of murine immune cells.
33. **Duckett, N. S., S. Olmos, D. M. Durrant, and D. W. Metzger.** 2005. Intranasal interleukin-12 treatment for protection against respiratory infection with the *Francisella tularensis* live vaccine strain. *Infect Immun* **73**:2306-11.
This paper reports that a cytokine can protect from infection with the bacterium.
34. **Larsson, P., P. C. Oyston, P. Chain, M. C. Chu, M. Duffield, H. H. Fuxelius, E. Garcia, G. Halltorp, D. Johansson, K. E. Isherwood, P. D. Karp, E. Larsson, Y. Liu, S. Michell, J. Prior, R. Prior, S. Malfatti, A. Sjostedt, K. Svensson, N. Thompson, L. Vergez, J. K. Wagg, B. W. Wren, L. E. Lindler, S. G. Andersson, M. Forsman, and R. W. Titball.** 2005. The complete genome sequence of *Francisella tularensis*, the causative agent of tularemia. *Nat Genet* **37**:153-9.
This paper reports the genomic sequence of the bacterium.

NIH Grants:

1	100	1R01AI054583-01A2	KLIMPEL, GARY	<u>Tularemia and the Human Innate Immune Response</u>
Total: \$755,000			<ul style="list-style-type: none"> \$377,500 2005 Klimpel, Gary R UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$377,500 2004 Klimpel, Gary R UNIVERSITY OF TEXAS MEDICAL BR 	

			GALVESTON GALVESTON, TX	
2	100	1R21AI064369-01	WEINSTOCK, GEORGE	<u>Comparative Genomics of Francisella</u>
Total: \$300,000			<ul style="list-style-type: none"> \$300,000 2005 Weinstock, George M BAYLOR COLLEGE OF MEDICINE HOUSTON, TX 	
3	100	1U19AI056543-010001	WETZLER, LEE	<u>Tularemia Vaccine Development</u>
Total: \$6,264,376 *			<ul style="list-style-type: none"> \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
4	72	1Z01BJ006022-01	ELKINS, KAREN	<u>Immunity to Intracellular Bacteria</u>
5	72	1U01AI057291-01	KAPLAN, NACHUM	<u>Novel antibacterial agents for treatment of Tularemia</u>
Total: \$5,859,879			<ul style="list-style-type: none"> \$2,995,855 2004 Kaplan, Nachum AFFINIUM PHARMACEUTICALS, INC. CANADA - TORONTO \$2,864,024 2003 Schmid, Molly B AFFINIUM PHARMACEUTICALS, INC. CANADA - TORONTO 	
6	57	1R21AI053399-01A1	KAWULA, THOMAS	<u>Molecular Basis of Francisella Virulence and Immunity</u>
Total: \$507,320			<ul style="list-style-type: none"> \$255,500 2005 Kawula, Thomas H UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$251,820 2004 Kawula, Thomas H UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
7	57	1P01AI057986-01A2	KLOSE, KARL	<u>Tularemia: Pathogenesis and Host Response</u>
8	57	1R21AI055551-01	PAVELKA, MARTIN	<u>Development of genetic tools for Francisella tularensis</u>
Total: \$315,000			<ul style="list-style-type: none"> \$157,500 2004 Pavelka, Martin S UNIVERSITY OF ROCHESTER ROCHESTER, NY \$157,500 2003 Pavelka, Martin S UNIVERSITY OF ROCHESTER ROCHESTER, NY 	
9	57	1R21AI057828-01	SIELING, PETER	<u>CD1-RESTRICTED T CELLS AGAINST THE TULAREMIA PATHOGEN</u>
Total: \$452,639			<ul style="list-style-type: none"> \$223,013 2005 Sieling, Peter A UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	

				<ul style="list-style-type: none"> \$229,626 2004 Sieling, Peter A UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA
10	57	1R01AI060689-01A1	SJOSTEDT, ANDERS	<u>Development of live Francisella tularensis vaccines</u>
Total: \$270,000			<ul style="list-style-type: none"> \$270,000 2005 Sjostedt, Anders B UMEA UNIVERSITY SWEDEN - UMEA 	
11	57	1R01AI059703-01	TEALE, JUDY	<u>Effect of Aging on Immunity to Tularemia</u>
Total: \$730,000			<ul style="list-style-type: none"> \$365,000 2005 Teale, Judy M UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX \$365,000 2004 Teale, Judy M UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX 	
12	43	1R21AI057755-01A1	BENSON, ANDREW	<u>Genome biology of Francisella tularensis populations</u>
Total: \$391,459			<ul style="list-style-type: none"> \$195,959 2005 Benson, Andrew K UNIVERSITY OF NEBRASKA LINCOLN LINCOLN, NE \$195,500 2004 Benson, Andrew K UNIVERSITY OF NEBRASKA LINCOLN LINCOLN, NE 	
13	43	1R21AI059549-01	CANNON, JANNE	<u>Antigenic Variation in Francisella tularensis</u>
Total: \$277,373			<ul style="list-style-type: none"> \$277,373 2004 Cannon, Janne G UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
14	43	1R21AI059064-01	CHEN, WANGXUE	<u>Mouse model of oral infection with virulent Francisella</u>
Total: \$432,000			<ul style="list-style-type: none"> \$216,000 2005 Chen, Wangxue NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA \$216,000 2004 Chen, Wangxue NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA 	
15	43	1R43AI055145-01	EDSON, CLARK	<u>A Portable Biosensor for Francisella tularensis</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2003 Edson, Clark M RADIATION MONITORING DEVICES, INC. WATERTOWN, MA 	
16	43	1Z01BJ006016-08	ELKINS, KAREN	<u>Resistance to infection and immunity to pathogenic intra</u>
17	43	1R21AI055657-01	GREGORY, STEPHEN	<u>FRANCISELLA TULARENSIS: INNATE RESISTANCE TO IHALATION</u>

Total: \$616,000			<ul style="list-style-type: none"> • \$308,000 2004 Gregory, Stephen H RHODE ISLAND HOSPITAL (PROVIDENCE, RI) PROVIDENCE, RI • \$308,000 2003 Gregory, Stephen H RHODE ISLAND HOSPITAL (PROVIDENCE, RI) PROVIDENCE, RI 	
18	43	1R21AI059642-01	HILLIARD, GEORGE	<u>Protein Expression in Strains of Francisella tularensis</u>
Total: \$284,640			<ul style="list-style-type: none"> • \$284,640 2004 Hilliard, George M UNIVERSITY OF TENNESSEE HEALTH SCI CTR MEMPHIS, TN 	
19	43	1R21AI053403-01	HORWITZ, MARCUS	<u>Characterization of the Francisella tularensis phagosome</u>
Total: \$457,500			<ul style="list-style-type: none"> • \$228,750 2003 Horwitz, Marcus A UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA • \$228,750 2002 Horwitz, Marcus A UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
20	43	1U54AI057141-010006	HOVDE, CAROLYN	<u>Vaccine Development</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> • \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
21	43	1R21AI064183-01	KELLY, JOHN	<u>Proteomics of Francisella tularensis infection/immunity</u>
Total: \$216,000			<ul style="list-style-type: none"> • \$216,000 2005 Kelly, John F NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA 	
22	43	1U54AI057156-010002	KLOSE, KARL	<u>Francisella Tularensis Live Attenuated Vaccines</u>
Total: \$27,834,107			<ul style="list-style-type: none"> • \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
23	43	1R21AI056278-01	MANN, BARBARA	<u>Adhesins and Invasins of Francisella Tularensis</u>
Total: \$494,125			<ul style="list-style-type: none"> • \$228,125 2004 Mann, Barbara J UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA • \$266,000 2003 Mann, Barbara J UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA 	

24	43	1P01AI055637-010003	MCIVER, KEVIN	<u>Francisella tularensis secreted proteome in tularemia</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
25	43	1U01AI056460-01	MICHALEK, SUZANNE	<u>Development of a Mucosal Vaccine Against F. tularensis</u>
Total: \$1,438,813			<ul style="list-style-type: none"> \$539,191 2005 Michalek, Suzanne M UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$600,023 2004 Michalek, Suzanne M UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$299,599 2003 Michalek, Suzanne M UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
26	43	1U54AI057168-010010	MINCHEFF, MILCHO	<u>GENOMIC ELI FOR IDENTIFICATION OF FT PROTEIN TARGETS</u>
Total: \$22,072,698 *			<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
27	43	1R01AI056215-01A1	NANO, FRANCIS	<u>A. Francisella tularensis pathogenicity island</u>
Total: \$399,600			<ul style="list-style-type: none"> \$216,000 2005 Nano, Francis E UNIVERSITY OF VICTORIA CANADA - VICTORIA \$183,600 2004 Nano, Francis E UNIVERSITY OF VICTORIA CANADA - VICTORIA 	
28	43	1P01AI055637-01	NORGARD, MICHAEL	<u>Molecular Biology of Francisella tularensis Virulence</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
29	43	1R21AI056227-01	RAMAKRISHNAN, GIRIJA	<u>Iron Transport Mechanisms of Francisella tularensis</u>
Total: \$481,125			<ul style="list-style-type: none"> \$228,125 2004 Ramakrishnan, Girija UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA 	

				<ul style="list-style-type: none"> \$253,000 2003 Ramakrishnan, Girija UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA
30	43	1U19AI056543-01	RICE, PETER	<u>Immuno-Prophylaxis-Therapy & Diagnosis of Tularemia</u>
Total: \$6,264,376 *			<ul style="list-style-type: none"> \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
31	43	1P01AI056296-010004	RUBIN, ERIC	<u>Genetics of F Tularensis Virulence and Drug Resistance</u>
Total: \$11,095,528 *			<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA 	
32	43	1R01AI066505-01	TALTON, JAMES	<u>Inhaled Aminoglycoside Formulafor Plague and Tularemia</u>
Total: \$603,030			<ul style="list-style-type: none"> \$603,030 2005 Talton, James David NANOTHERAPEUTICS, INC. ALACHUA, FL 	
33	43	1R21AI053411-01A1	TELFORD, SAM	<u>Proximal determinants of risk for tularemia outbreaks</u>
Total: \$475,500			<ul style="list-style-type: none"> \$237,750 2004 Telford, Sam R TUFTS UNIVERSITY BOSTON BOSTON, MA \$237,750 2003 Telford, Sam R TUFTS UNIVERSITY BOSTON BOSTON, MA 	
34	43	1R21AI061106-01	WEINSTOCK, GEORGE	<u>Francisella Genomics</u>
Total: \$150,500			<ul style="list-style-type: none"> \$150,500 2004 Weinstock, George M BAYLOR COLLEGE OF MEDICINE HOUSTON, TX 	
35	29	1P01AI055621-01A1	BENACH, JORGE	<u>Agents of Bioterrorism: Pathogenesis and host defense</u>
Total: \$5,601,602			<ul style="list-style-type: none"> \$2,531,248 2005 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$3,070,354 2004 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
36	29	1R01AI048474-01A1	CONLAN, WAYNE	<u>Acellular vaccines against</u>

				<u>Francisella tularensis</u>
Total: \$1,113,750			<ul style="list-style-type: none"> • \$225,000 2005 Conlan, Wayne NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA • \$225,000 2004 Conlan, Wayne NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA • \$225,000 2003 Conlan, Wayne NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA • \$225,000 2002 Conlan, Joseph W NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA • \$213,750 2001 Conlan, Joseph W NATIONAL RESEARCH COUNCIL OF CANADA CANADA - OTTAWA 	
37	29	1U54AI057168-010004	CROSS, ANDREW	<u>DESIGN OF ATTENUATED TULAREMIA VACCINE</u>
Total: \$22,072,698 *			<ul style="list-style-type: none"> • \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
38	29	1P01AI055637-010001	DAEFLER, SIMON	<u>Intracellular trafficking of the F. tularensis vacuole</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> • \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
39	29	1U54AI057141-010005	ERNST, ROBERT	<u>Bacterial Lipopolysaccharide Structure</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> • \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
40	29	1R21AI056059-01	ESCUYER, VINCENT	<u>Virulence genes identification in Francisella tularensis</u>
Total: \$640,006			<ul style="list-style-type: none"> • \$321,438 2004 Escuyer, Vincent E SOUTHERN RESEARCH INSTITUTE BIRMINGHAM, AL • \$318,568 2003 Escuyer, Vincent E SOUTHERN RESEARCH INSTITUTE BIRMINGHAM, AL 	
41	29	1P01AI056296-01	GLIMCHER, LAURIE	<u>Arming the Immune System Against Pathogens</u>

Total: \$11,095,528 *			<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA 	
42	29	1P01AI056296-010002	GRUSBY, MICHAEL	<u>Regulation of the Immune Response to Pathogens by Stat4</u>
Total: \$11,095,528 *			<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA 	
43	29	1U54AI057141-010003	GUINA, TINA	<u>Bacterial Proteome</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
44	29	1R21EB000985-01	HEFFRON, FRED	<u>Rapid Identification of Secreted of F tularensis Antigen</u>
Total: \$528,500			<ul style="list-style-type: none"> \$226,500 2003 Heffron, Fred L OREGON HEALTH & SCIENCE UNIVERSITY PORTLAND, OR \$302,000 2002 Heffron, Fred L OREGON HEALTH & SCIENCE UNIVERSITY PORTLAND, OR 	
45	29	1U01AI054374-01	HENRICKSON, KELLY	<u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u>
Total: \$1,346,667			<ul style="list-style-type: none"> \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI 	
46	29	1R21AI058161-01	HOLLINGSWORTH, JOHN	<u>Genetic susceptibility to F tularensis</u>
Total: \$275,600			<ul style="list-style-type: none"> \$275,600 2004 Cook, Donald N DUKE UNIVERSITY DURHAM, NC 	
47	29	1R21AI059489-01	LEWIS, KIM	<u>BIODEFENSE THERAPEUTICS FROM UNCULTURED MICROORGANISMS</u>

Total: \$630,000			<ul style="list-style-type: none"> • \$315,000 2005 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA • \$315,000 2004 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA 	
48	29	1P01AI056320-01	METZGER, DENNIS	<u>Mucosal Immunopathogenesis of Franscisella Tularensis</u>
Total: \$4,819,067 *			<ul style="list-style-type: none"> • \$1,941,836 2005 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$1,890,499 2004 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$986,732 2003 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY 	
49	29	1P01AI056320-010003	METZGER, DENNIS	<u>Immune Protection Against Pneumonic Tularemia</u>
Total: \$4,819,067 *			<ul style="list-style-type: none"> • \$1,941,836 2005 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$1,890,499 2004 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$986,732 2003 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY 	
50	29	1P01AI055637-010004	NORGARD, MICHAEL	<u>Outer membrane proteins & lipoproteins of F. tularensis</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> • \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
51	29	1P01AI055637-019001	NORGARD, MICHAEL	<u>Core--Equipment - Laser Scanning Confocal Microscope</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> • \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX • \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
52	29	1U54AI057141-010001	OLSON, MAYNARD	<u>Bacterial Genome Diversity</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> • \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA • \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON 	

			SEATTLE, WA	
53	29	1P01AI056296-010005	PETSKO, GREGORY	<u>Structural Biology of Immune System Modulators</u>
Total: \$11,095,528 *			<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA 	
54	29	1U56AI057164-010002	SCHLESINGER, LARRY	<u>Tularemia and Lung Innate Immunity</u>
Total: \$1,354,051 *			<ul style="list-style-type: none"> \$670,963 2004 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN \$683,088 2003 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN 	
55	29	1P01AI056320-010002	SELLATI, TIMOTHY	<u>Innate Pattern Recognition of F. tularensis</u>
Total: \$4,819,067 *			<ul style="list-style-type: none"> \$1,941,836 2005 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY \$1,890,499 2004 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY \$986,732 2003 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY 	
56	29	1U19AI056543-010002	SHARON, JACQUELINE	<u>Polyclonal Antibody Libraries for Tularemia</u>
Total: \$6,264,376 *			<ul style="list-style-type: none"> \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
57	29	1U54AI057141-010007	SKERRETT, SHAWN	<u>Airway Inflammation</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
58	29	1P01AI055637-010005	SPERANDIO, VANESSA	<u>Genetics of virulence expression by F. tularensis</u>
Total: \$5,077,589 *			<ul style="list-style-type: none"> \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW 	

				<p>MED CTR/DALLAS DALLAS, TX</p> <ul style="list-style-type: none"> \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX
59	29	1U54AI057159-010004	TZIANABOS, ARTHUR	<u>Conjugate Vaccine for the Prevention of Tularemia</u>
Total: \$26,169,985			<ul style="list-style-type: none"> \$10,173,756 2005 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$11,843,830 2004 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$4,152,399 2003 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA 	
60	14	1P01AI056320-010004	BANAS, JEFFREY	<u>Mutant F. tularensis Interactions with Macrophages</u>
Total: \$4,819,067 *			<ul style="list-style-type: none"> \$1,941,836 2005 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY \$1,890,499 2004 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY \$986,732 2003 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY 	
61	14	1R03AI048492-01	BENACH, JORGE	<u>HOST RESPONSES TO THE TULAREMIA AGENT</u>
Total: \$225,750			<ul style="list-style-type: none"> \$75,250 2002 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$75,250 2001 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$75,250 2000 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
62	14	1R01AI056047-01	COLLINS, GREG	<u>Sensitive Diagnosis of Biowarfare Agents on a Microchip</u>
Total: \$1,154,639			<ul style="list-style-type: none"> \$456,719 2005 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC \$455,617 2004 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC \$242,303 2003 Collins, Greg E U.S. NAVAL RESEARCH LABORATORY WASHINGTON, DC 	
63	14	1U01AI061192-01	CUNNINGHAM, PHILIP	<u>Anti-infectives that target bacterial ribosomes</u>
Total: \$621,051			<ul style="list-style-type: none"> \$621,051 2004 Cunningham, Philip R WAYNE STATE UNIVERSITY DETROIT, MI 	
64	14	1U01AI054785-	DAVID, SUNIL	<u>Hydrophobic Polyamine Amides as</u>

		01		<u>Anti-Endotoxin Agents</u>
Total: \$810,372			<ul style="list-style-type: none"> • \$271,792 2005 David, Sunil A UNIVERSITY OF KANSAS LAWRENCE LAWRENCE, KS • \$267,961 2004 David, Sunil A UNIVERSITY OF KANSAS LAWRENCE LAWRENCE, KS • \$270,619 2003 David, Sunil A UNIVERSITY OF KANSAS LAWRENCE LAWRENCE, KS 	
65	14	1R43AI058326-01A1	DE GROOT, ANNE	<u>A GENOME-DERIVED, EPITOPE-DRIVEN TULAREMIA VACCINE</u>
Total: \$421,437			<ul style="list-style-type: none"> • \$421,437 2004 Degroot, Anne S EPIVAX, INC. PROVIDENCE, RI 	
66	14	1P01AI056320-010001	DRAKE, JAMES	<u>Immunobiology of F. tularensis-Macrophage Interactions</u>
Total: \$4,819,067 *			<ul style="list-style-type: none"> • \$1,941,836 2005 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$1,890,499 2004 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY • \$986,732 2003 Metzger, Dennis W ALBANY MEDICAL COLLEGE OF UNION UNIV ALBANY, NY 	
67	14	1U01AI056480-01	DUNN, JOHN	<u>Rapid Detection and Identification of Zoonotic Pathogens</u>
Total: \$2,387,159			<ul style="list-style-type: none"> • \$879,674 2005 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY • \$854,379 2004 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY • \$653,106 2003 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY 	
68	14	1R01CI000099-01	ECKER, DAVID	<u>Automated Simultaneous Detection of Bioterrorism Agents</u>
69	14	1U19AI056543-019001	ELLENBERGER, MARY	<u>Animals</u>
Total: \$6,264,376 *			<ul style="list-style-type: none"> • \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA • \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA • \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
70	14	1Z01AI000725-06	FARBER, JOSHUA	<u>ACTIVITIES OF CHEMOKINES IN VIVO</u>
71	14	1Z01AI000725-08	FARBER, JOSHUA	<u>Activities Of Chemokines In Vivo</u>
72	14	1P01AI056296-010001	GLIMCHER, LAURIE	<u>Arming the Immune System</u>

				<u>Against Pathogens</u>
Total: \$11,095,528 *				<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA
73	14	1P01AI055637-010002	HANSEN, ERIC	<u>Identification of F. tularensis gene products</u>
Total: \$5,077,589 *				<ul style="list-style-type: none"> \$1,751,649 2005 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,700,631 2004 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$1,625,309 2003 Norgard, Michael V UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX
74	14	1R01AI050564-01	KLOSE, KARL	<u>An Oral Vaccine Against Multiple Biowarfare Agents</u>
Total: \$1,466,918				<ul style="list-style-type: none"> \$358,704 2004 Klose, Karl E UNIVERSITY OF TEXAS SAN ANTONIO SAN ANTONIO, TX \$30,791 2003 Klose, Karl E UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX \$399,948 2003 Klose, Karl E UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX \$325,125 2002 Klose, Karl E UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX \$352,350 2001 Klose, Karl E UNIVERSITY OF TEXAS HLTH SCI CTR SAN ANT SAN ANTONIO, TX
75	14	1P01AI056296-010003	KRAMNIK, IGOR	<u>Genetic Control of Host Resistance to Airborne Pathogens</u>
Total: \$11,095,528 *				<ul style="list-style-type: none"> \$4,365,288 2005 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$4,276,251 2004 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA \$2,453,989 2003 Glimcher, Laurie H HARVARD UNIVERSITY (SCH OF PUBLIC HLTH) BOSTON, MA
76	14	1U56AI057192-010002	KUSNER, DAVID	<u>Lung Host Pathogen Interactions Research</u>
Total: \$1,477,975 *				<ul style="list-style-type: none"> \$1,477,975 2003 Britigan, Bradley E UNIVERSITY OF IOWA IOWA CITY, IA
77	14	1U54AI057168-01	LEVINE, MYRON	<u>Defense against Biowarfare and Emerging Infection Agents</u>
Total: \$22,072,698 *				<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD

				<ul style="list-style-type: none"> \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD
78	14	1U54AI057168-010007	LEVINE, MYRON	<u>CAREER DEVELOPMENT PROJECTS</u>
Total: \$22,072,698 *			<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
79	14	1R21AI059483-01	LEWIS, KIM	<u>NOVEL METHODS FOR DISCOVERY OF ANTI-MICROBIALS</u>
Total: \$628,934			<ul style="list-style-type: none"> \$314,200 2005 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA \$314,734 2004 Lewis, Kim A NORTHEASTERN UNIVERSITY BOSTON, MA 	
80	14	1P01AI056295-01A1	LYONS, C.	<u>Pulmonary responses to Bioweapon Category A Pathogens</u>
Total: \$1,890,737			<ul style="list-style-type: none"> \$1,890,737 2005 Lyons, C Rick UNIVERSITY OF NEW MEXICO ALBUQUERQUE ALBUQUERQUE, NM 	
81	14	1U54AI057141-010002	MANOIL, COLIN	<u>Bacterial Essential and Virulence Gene</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
82	14	1U54AI057141-019008	MANOIL, COLIN	<u>CORE--Bacterial Strain</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
83	14	1U01AI061260-01	MILLER, MARK	<u>VSV as a vector for cytokine-assisted tularemia vaccines</u>
Total: \$584,179			<ul style="list-style-type: none"> \$584,179 2005 Miller, Mark A UNIVERSITY OF TENNESSEE HEALTH 	

			SCI CTR MEMPHIS, TN	
84	14	2P01AI044642-05	NAUSEEF, WILLIAM	<u>Innate immune response to microbial infection</u>
Total: \$6,572,766			<ul style="list-style-type: none"> \$1,364,143 2005 Nauseef, William M UNIVERSITY OF IOWA IOWA CITY, IA \$1,327,889 2004 Nauseef, William M UNIVERSITY OF IOWA IOWA CITY, IA \$773,147 2003 Nauseef, William M UNIVERSITY OF IOWA IOWA CITY, IA \$1,343,563 2002 Nauseef, William M UNIVERSITY OF IOWA IOWA CITY, IA \$894,121 2001 Nauseef, William M UNIVERSITY OF IOWA IOWA CITY, IA \$869,903 2000 NAUSEEF, WILLIAM M UNIVERSITY OF IOWA IOWA CITY, IA 	
85	14	1R41AI052921-01A1	PAPISOV, MIKHAIL	<u>SYSTEMIC LYMPH NODE SPECIFIC AGENTS</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2003 Papisov, Mikhail I NANOPHARMA, CORPORATION BOSTON, MA 	
86	14	1R21AI053394-01A1	PIERINI, LYNDA	<u>Screening for Inhibitors of F. tularensis Virulence</u>
Total: \$498,220			<ul style="list-style-type: none"> \$252,000 2004 Pierini, Lynda M WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$246,220 2003 Pierini, Lynda M WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
87	14	1P01AI063302-01	PORTNOY, DANIEL	<u>Intracellular Pathogens and Innate Immunity</u>
Total: \$2,714,524			<ul style="list-style-type: none"> \$2,014,030 2005 Portnoy, Daniel A UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA \$700,494 2004 Portnoy, Daniel A UNIVERSITY OF CALIFORNIA BERKELEY BERKELEY, CA 	
88	14	1R43AI052898-01	PRUDENT, JAMES	<u>Rapid Turn-around Testing for Bioterrorism Agents</u>
Total: \$105,250			<ul style="list-style-type: none"> \$105,250 2002 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI 	
89	14	2R44AI052898-02	PRUDENT, JAMES	<u>Rapid Turn-around Multiplex Testing: Bioweapon Agents</u>
Total: \$938,550			<ul style="list-style-type: none"> \$389,796 2004 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI \$548,754 2003 Prudent, James R ERAGEN BIOSCIENCES, INC. 	

			MADISON, WI	
90	14	1R01GM068025-01A2	RAYCHAUDHURI, DEBABRATA	<u>Small Molecule Inhibitors of Bacterial Cell Division</u>
Total: \$212,199			<ul style="list-style-type: none"> \$212,199 2004 Raychaudhuri, Debabrata TUFTS UNIVERSITY BOSTON BOSTON, MA 	
91	14	1U54AI057141-010004	SALAMA, NINA	<u>Virulence Factors in the Airway</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
92	14	1U54AI057141-019006	SALAMA, NINA	<u>CORE--DNA Microarray</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
93	14	1U56AI057164-01	SCHLIEVERT, PATRICK	<u>MWCE: Transmission/Pathogenesis of Bioterrorism Agents</u>
Total: \$1,354,051 *			<ul style="list-style-type: none"> \$670,963 2004 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN \$683,088 2003 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN 	
94	14	1U56AI057164-010003	SCHLIEVERT, PATRICK	<u>DEVELOPMENTAL RESEARCH PROJECTS</u>
Total: \$1,354,051 *			<ul style="list-style-type: none"> \$670,963 2004 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN \$683,088 2003 Schlievert, Patrick M UNIVERSITY OF MINNESOTA TWIN CITIES MINNEAPOLIS, MN 	
95	14	1R21AI065724-01	SCHWEIZER, HERBERT	<u>Non-antibiotic resistance markers for bacteria</u>
Total: \$179,725			<ul style="list-style-type: none"> \$179,725 2005 Schweizer, Herbert P COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO 	
96	14	1U19AI056543-010003	SHAPIRO, DANIEL	<u>Diagnostics</u>

Total: \$6,264,376 *			<ul style="list-style-type: none"> • \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA • \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA • \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
97	14	1U19AI056543-019002	SHAPIRO, DANIEL	<u>Bacteriology/Immunology</u>
Total: \$6,264,376 *			<ul style="list-style-type: none"> • \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA • \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA • \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
98	14	1UC1AI067203-01	SIGAL, GEORGE	<u>A Multiplexed Point-of-Care Diagnostic System for Bio-T*</u>
99	14	1R01AI057831-01	TAYLOR, GREGORY	<u>Regulation of IFN-g-induced Innate Immunity by LRG-47</u>
Total: \$755,096			<ul style="list-style-type: none"> • \$385,000 2005 Taylor, Gregory A DUKE UNIVERSITY DURHAM, NC • \$370,096 2004 Taylor, Gregory A DUKE UNIVERSITY DURHAM, NC 	
100	14	2R01HL062608-11	VASIL, MICHAEL	<u>Novel Class of Phospholipases-Molecular Pathogenesis</u>
Total: \$1,930,954			<ul style="list-style-type: none"> • \$423,679 2004 Vasil, Michael L UNIVERSITY OF COLORADO DENVER/HSC AURORA AURORA, CO • \$451,032 2003 Vasil, Michael L UNIVERSITY OF COLORADO HLTH SCIENCES CTR AURORA, CO • \$361,368 2002 Vasil, Michael L UNIVERSITY OF COLORADO HLTH SCIENCES CTR DENVER, CO • \$352,492 2001 Vasil, Michael L UNIVERSITY OF COLORADO HLTH SCIENCES CTR DENVER, CO • \$342,383 2000 VASIL, MICHAEL L UNIVERSITY OF COLORADO HLTH SCIENCES CTR DENVER, CO 	
101	14	1R21AI060953-01	WHITE, STEPHEN	<u>Development of DHPS as a Bioterrorism Therapeutic Target</u>
Total: \$264,000			<ul style="list-style-type: none"> • \$264,000 2004 White, Stephen W ST. JUDE CHILDREN'S RESEARCH HOSPITAL MEMPHIS, TN 	
102	14	1R21AI059225-01A1	ZENG, MINGTAO	<u>Development of a New Tularemia Vaccine</u>

Goatpox virus

Taxonomy: Family *Poxviridae*, Subfamily *Chordopoxvirinae*, Genus *Capripoxvirus*, Species:

Goatpox virus. Virus: Goatpox virus.

Publications:

1. **Tulman, E. R., C. L. Afonso, Z. Lu, L. Zsak, J.-H. Sur, N. T. Sandybaev, U. Z. Kerembekova, V. L. Zaitsev, G. F. Kutish, and D. L. Rock.** 2002. The Genomes of Sheeppox and Goatpox Viruses. *J Virol* **76**:6054-61.
This paper describes the sequencing and characterization, and comparison of Sheeppox and Goatpox virus.

NIH Grants: None

Hendra virus

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*,

Genus *Henipavirus*, Species: *Hendra virus*, Virus: Hendra virus

Publications:

1. **Tamin, A., B. H. Harcourt, T. G. Ksiazek, P. E. Rollin, W. J. Bellini, and P. A. Rota.** 2002. Functional Properties of the Fusion and Attachment Glycoproteins of Nipah Virus. *Virology* **296**:190-200.
This paper describes the characterization of the immunogenic and functional properties of the fusion and attachment proteins of Hendra and Nipah virus after vaccination of mice with recombinant vaccinia viruses.
2. **Bossart, K. N., G. Crameri, A. S. Dimitrov, B. A. Mungall, Y. R. Feng, J. R. Patch, A. Choudhary, L. F. Wang, B. T. Eaton, and C. C. Broder.** 2005. Receptor binding, fusion inhibition, and induction of cross-reactive neutralizing antibodies by a soluble G glycoprotein of Hendra virus. *J Virol* **79**: 6690-6702.
This paper reports the properties of the surface protein of henipaviruses, and sheds light on the cell-entry mechanism.
3. **Bonaparte, M. I., A. S. Dimitrov, K. N. Bossart, G. Crameri, B. A. Mungall, K. A. Bishop, V. Choudry, D. S. Dimitrov, L. F. Wang, B. T. Eaton, C. C. Broder.** 2005. Ephrin-B2 ligand is a functional receptor for Hendra virus and Nipah virus. *Proc Natl Acad Med Sci U S A*
This paper reports the identity of the henipavirus cell-surface receptor.

NIH Grants:

1	100	1R21AI063052-01	DUTCH, REBECCA	<u>Proteolytic cleavage of the Hendra virus fusion protein</u>
Total: \$294,600			<ul style="list-style-type: none"> \$294,600 2005 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
2	100	1R21AI056185-01	MOSCONA, ANNE	<u>Fusion triggering by Hendra virus F protein: role of G</u>
Total: \$678,000			<ul style="list-style-type: none"> \$339,000 2004 Moscona, Anne MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY \$339,000 2003 Moscona, Anne MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	
3	67	1R21AI065597-01	BRODER, CHRISTOPHER	<u>Nipah Virus and Hendra Virus Subunit Vaccines</u>
4	50	1U01AI056423-01	BRODER, CHRISTOPHER	<u>Nipah virus and Hendra virus Peptide Therapeutics</u>
Total: \$1,560,796			<ul style="list-style-type: none"> \$625,455 2005 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$607,239 2004 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$328,102 2003 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD 	
5	50	1F31AI061829-01	CRAFT, WILLIE	<u>Expression and Cleavage of the Hendra Virus F Protein</u>
Total: \$24,361			<ul style="list-style-type: none"> \$24,361 2004 Craft, Willie W UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
6	50	1R01AI055733-01A1	HORVATH, CURT	<u>Host Defense Evasion by Fatal Emerging Paramyxoviruses</u>
Total: \$539,476			<ul style="list-style-type: none"> \$266,000 2005 Horvath, Curt M EVANSTON NORTHWESTERN HEALTHCARE EVANSTON, IL \$201,066 2004 Horvath, Curt M EVANSTON NORTHWESTERN HEALTHCARE EVANSTON, IL \$72,410 2004 Horvath, Curt M MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	
7	17	1R01AI051517-01	DUTCH, REBECCA	<u>SV5 and Hendra virus F protein promoted membrane fusion</u>
Total: \$1,013,600			<ul style="list-style-type: none"> \$253,400 2005 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY \$253,400 2004 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY 	

	<ul style="list-style-type: none"> • \$253,400 2003 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY • \$253,400 2002 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY
--	--

Human enterovirus B (strain Human coxsackievirus B5 (formerly Swine vesicular disease virus))

Taxonomy: Family *Picornaviridae*, Genus *Enterovirus*, Species *Human enterovirus B*, Virus:

Human enterovirus B.

Publications:

1. **Martino, T. A., M. Petric, H. Weingartl, J. M. Bergelson, M. A. Opavsky, C. D. Richardson, J. F. Modlin, R. W. Finberg, K. C. Kain, N. Willis, C. J. Gauntt, and P. P. Liu.** 2000. The coxsackie-adenovirus receptor (CAR) is used by reference strains and clinical isolates representing all six serotypes of coxsackievirus group B and by swine vesicular disease virus. *Virology* **271**:99-108.
This paper reports that all human coxsackieviruses of group B use the same receptor.

NIH Grants:

1	6	1R03AI053196-01	CHAPMAN, NORA	<u>Enterovirus persistence in myocarditis</u>
Total: \$147,000			<ul style="list-style-type: none"> • \$73,500 2003 Chapman, Nora M UNIVERSITY OF NEBRASKA MEDICAL CENTER OMAHA, NE • \$73,500 2002 Chapman, Nora M UNIVERSITY OF NEBRASKA MEDICAL CENTER OMAHA, NE 	

Influenza A virus (avian highly pathogenic strains H5 and H7)

Taxonomy: Family *Orthomyxoviridae*, Genus *Influenzavirus A*, Species *Influenza A virus*, Virus:

Influenza A virus.

Publications:

1. **Cauthen, A. N., D. E. Swayne, S. Schultz-Cherry, M. L. Perdue, and D. L. Suarez.** 2000. Continued circulation in China of highly pathogenic avian influenza viruses encoding the hemagglutinin gene associated with the 1997 H5N1 outbreak in poultry and humans. *J Virol* **74**:6592-9.
This article reports the circulation of avian influenzavirus strains in China.
2. **Dybing, J. K., S. Schultz-Cherry, D. E. Swayne, D. L. Suarez, and M. L. Perdue.** 2000. Distinct pathogenesis of hong kong-origin H5N1 viruses in mice compared to that of other highly pathogenic H5 avian influenza viruses. *J Virol* **74**:1443-50.
This paper reports the pathogenesis of an avian influenzavirus in mice and compares it to that of related strains.
3. **Katz, J. M., X. Lu, A. M. Frace, T. Morken, S. R. Zaki, and T. M. Tumpey.** 2000. Pathogenesis of and immunity to avian influenza A H5 viruses. *Biomed Pharmacother* **54**:178-87.
This paper reports the pathogenesis of an avian influenza virus.
4. **Kodihalli, S., D. L. Kobasa, and R. G. Webster.** 2000. Strategies for inducing protection against avian influenza A virus subtypes with DNA vaccines. *Vaccine* **18**:2592-9.
This paper reports a vaccine candidate.
5. **O'Neill, E., S. L. Krauss, J. M. Riberdy, R. G. Webster, and D. L. Woodland.** 2000. Heterologous protection against lethal A/HongKong/156/97 (H5N1) influenza virus infection in C57BL/6 mice. *J Gen Virol* **81**:2689-96.
This paper reports a successful vaccine strategy.
6. **Schultz-Cherry, S., J. K. Dybing, N. L. Davis, C. Williamson, D. L. Suarez, R. Johnston, and M. L. Perdue.** 2000. Influenza virus (A/HK/156/97) hemagglutinin expressed by an alphavirus replicon system protects chickens against lethal infection with Hong Kong-origin H5N1 viruses. *Virology* **278**:55-9.
This paper reports a successful vaccine strategy.
7. **Swayne, D. E., J. R. Beck, and N. Kinney.** 2000. Failure of a recombinant fowl poxvirus vaccine containing an avian influenza hemagglutinin gene to provide consistent protection against influenza in chickens preimmunized with a fowl pox vaccine. *Avian Dis* **44**:132-7.
This paper reports an unsuccessful vaccine candidate.
8. **Swayne, D. E., M. Garcia, J. R. Beck, N. Kinney, and D. L. Suarez.** 2000. Protection against diverse highly pathogenic H5 avian influenza viruses in chickens immunized with a recombinant fowlpox vaccine containing an H5 avian influenza hemagglutinin gene insert. *Vaccine* **18**:1088-95.
This paper reports a vaccine candidate
9. **Swayne, D. E., M. L. Perdue, J. R. Beck, M. Garcia, and D. L. Suarez.** 2000. Vaccines protect chickens against H5 highly pathogenic avian influenza in the face of genetic changes in field viruses over multiple years. *Vet Microbiol* **74**:165-72.
This paper reports successful vaccine candidates.
10. **Donatelli, I., L. Campitelli, L. Di Trani, S. Puzelli, L. Selli, A. Fioretti, D. J. Alexander, M. Tollis, S. Krauss, and R. G. Webster.** 2001. Characterization of H5N2 influenza viruses from Italian poultry. *J Gen Virol* **82**:623-30.
This paper reports the characterization of strains of the virus.

11. **Sambhara, S., A. Kurichh, R. Miranda, T. Tumpey, T. Rowe, M. Renshaw, R. Arpino, A. Tamane, A. Kandil, O. James, B. Underdown, M. Klein, J. Katz, and D. Burt.** 2001. Heterosubtypic immunity against human influenza A viruses, including recently emerged avian H5 and H9 viruses, induced by FLU-ISCOM vaccine in mice requires both cytotoxic T-lymphocyte and macrophage function. *Cell Immunol* **211**:143-53.
This paper reports the evaluation of a vaccine candidate.
12. **Swayne, D. E., J. R. Beck, M. L. Perdue, and C. W. Beard.** 2001. Efficacy of vaccines in chickens against highly pathogenic Hong Kong H5N1 avian influenza. *Avian Dis* **45**:355-65.
This paper reports the evaluation of vaccine candidates.
13. **Tumpey, T. M., M. Renshaw, J. D. Clements, and J. M. Katz.** 2001. Mucosal delivery of inactivated influenza vaccine induces B-cell-dependent heterosubtypic cross-protection against lethal influenza A H5N1 virus infection. *J Virol* **75**:5141-50.
This paper reports the immune response to a vaccine candidate.
14. **Berinstein, A., B. S. Seal, and D. L. Suarez.** 2002. Heteroduplex mobility assay for detection of new avian influenza virus variants. *Avian Dis* **46**:393-400.
This paper reports the development of a diagnostic assay for the differentiation of different strains of the virus.
15. **Kaverin, N. V., I. A. Rudneva, N. A. Ilyushina, N. L. Varich, A. S. Lipatov, Y. A. Smirnov, E. A. Govorkova, A. K. Gitelman, D. K. Lvov, and R. G. Webster.** 2002. Structure of antigenic sites on the haemagglutinin molecule of H5 avian influenza virus and phenotypic variation of escape mutants. *J Gen Virol* **83**:2497-505.
This paper reports the molecular basis of escape mutants of the virus.
16. **Panigrahy, B., D. A. Senne, and J. C. Pedersen.** 2002. Avian influenza virus subtypes inside and outside the live bird markets, 1993-2000: a spatial and temporal relationship. *Avian Dis* **46**:298-307.
This paper reports the identification of different strains of the virus.
17. **Spackman, E., D. A. Senne, T. J. Myers, L. L. Bulaga, L. P. Garber, M. L. Perdue, K. Lohman, L. T. Daum, and D. L. Suarez.** 2002. Development of a real-time reverse transcriptase PCR assay for type A influenza virus and the avian H5 and H7 hemagglutinin subtypes. *J Clin Microbiol* **40**:3256-60.
This paper reports the development of a PCR-based diagnostic assay for the detection of the virus.
18. **Tumpey, T. M., D. L. Suarez, L. E. Perkins, D. A. Senne, J. G. Lee, Y. J. Lee, I. P. Mo, H. W. Sung, and D. E. Swayne.** 2002. Characterization of a highly pathogenic H5N1 avian influenza A virus isolated from duck meat. *J Virol* **76**:6344-55.
This paper reports the characterization of a strain of the virus.
19. **Bright, R. A., T. M. Ross, K. Subbarao, H. L. Robinson, and J. M. Katz.** 2003. Impact of glycosylation on the immunogenicity of a DNA-based influenza H5 HA vaccine. *Virology* **308**:270-8.
This paper reports the impact of glycosylation on the immunogenicity of a DNA-based vaccine.

20. **Liu, M., J. M. Wood, T. Ellis, S. Krauss, P. Seiler, C. Johnson, E. Hoffmann, J. Humberd, D. Hulse, Y. Zhang, R. G. Webster, and D. R. Perez.** 2003. Preparation of a standardized, efficacious agricultural H5N3 vaccine by reverse genetics. *Virology* **314**:580-90.
This paper reports the development of a vaccine candidate.
21. **Lu, X. H., D. Cho, H. Hall, T. Rowe, I. P. Mo, H. W. Sung, W. J. Kim, C. Kang, N. Cox, A. Klimov, and J. M. Katz.** 2003. Pathogenesis of and immunity to a new influenza A (H5N1) virus isolated from duck meat. *Avian Dis* **47**:1135-40.
This paper reports the pathogenesis of a novel strain of the virus.
22. **Spackman, E., D. A. Senne, L. L. Bulaga, T. J. Myers, M. L. Perdue, L. P. Garber, K. Lohman, L. T. Daum, and D. L. Suarez.** 2003. Development of real-time RT-PCR for the detection of avian influenza virus. *Avian Dis* **47**:1079-82.
H7 hemagglutinin subtypes. *J Clin Microbiol* **40**:3256-60.
This paper reports the development of a PCR-based diagnostic assay for the detection of the virus.
23. **Spackman, E., D. A. Senne, L. L. Bulaga, S. Trock, and D. L. Suarez.** 2003. Development of multiplex real-time RT-PCR as a diagnostic tool for avian influenza. *Avian Dis* **47**:1087-90.
H7 hemagglutinin subtypes. *J Clin Microbiol* **40**:3256-60.
This paper reports the development of a PCR-based diagnostic assay for the detection of the virus.
24. **Swayne, D. E., D. L. Suarez, S. Schultz-Cherry, T. M. Tumpey, D. J. King, T. Nakaya, P. Palese, and A. Garcia-Sastre.** 2003. Recombinant paramyxovirus type 1-avian influenza-H7 virus as a vaccine for protection of chickens against influenza and Newcastle disease. *Avian Dis* **47**:1047-50.
This paper reports a vaccine candidate.
25. **Hulse, D. J., R. G. Webster, R. J. Russell, and D. R. Perez.** 2004. Molecular determinants within the surface proteins involved in the pathogenicity of H5N1 influenza viruses in chickens. *J Virol* **78**:9954-64.
This paper reports the identification of amino acid residues important for the pathogenicity of certain strains of the virus.
26. **Jones, Y. L., and D. E. Swayne.** 2004. Comparative pathobiology of low and high pathogenicity H7N3 Chilean avian influenza viruses in chickens. *Avian Dis* **48**:119-28.
This paper compares the pathological effects of different strains of the virus.
27. **Kessler, N., O. Ferraris, K. Palmer, W. Marsh, and A. Steel.** 2004. Use of the DNA flow-thru chip, a three-dimensional biochip, for typing and subtyping of influenza viruses. *J Clin Microbiol* **42**:2173-85.
This paper reports a DNA chip that can differentiate certain strains of the virus.
28. **Lee, C. W., D. A. Senne, J. A. Linares, P. R. Woolcock, D. E. Stallknecht, E. Spackman, D. E. Swayne, and D. L. Suarez.** 2004. Characterization of recent H5 subtype avian influenza viruses from US poultry. *Avian Pathol* **33**:288-97.
This paper reports the characterization of a strain of the virus.
29. **Lee, C. W., D. A. Senne, and D. L. Suarez.** 2004. Generation of reassortant influenza vaccines by reverse genetics that allows utilization of a DIVA (Differentiating Infected

- from Vaccinated Animals) strategy for the control of avian influenza. *Vaccine* **22**:3175-81.
This paper reports the development of vaccine candidates.
30. **Lee, C. W., and D. L. Suarez.** 2004. Application of real-time RT-PCR for the quantitation and competitive replication study of H5 and H7 subtype avian influenza virus. *J Virol Methods* **119**:151-8.
This paper reports the development of a PCR-based diagnostic system.
31. **Russell, R. J., S. J. Gamblin, L. F. Haire, D. J. Stevens, B. Xiao, Y. Ha, and J. J. Skehel.** 2004. H1 and H7 influenza haemagglutinin structures extend a structural classification of haemagglutinin subtypes. *Virology* **325**:287-96.
This paper reports the structure of the surface proteins of strains of the virus.
32. **Tompkins, S. M., C. Y. Lo, T. M. Tumpey, and S. L. Epstein.** 2004. Protection against lethal influenza virus challenge by RNA interference in vivo. *Proc Natl Acad Sci U S A* **101**:8682-6.
This paper reports the evaluation of an antiviral.
33. **Lipatov, A. S., R. J. Webby, E. A. Govorkova, S. Krauss, and R. G. Webster.** 2005. Efficacy of h5 influenza vaccines produced by reverse genetics in a lethal mouse model. *J Infect Dis* **191**:1216-20.
This paper reports the evaluation of a vaccine candidate.
34. **Mase, M., K. Tsukamoto, T. Imada, K. Imai, N. Tanimura, K. Nakamura, Y. Yamamoto, T. Hitomi, T. Kira, T. Nakai, M. Kiso, T. Horimoto, Y. Kawaoka, and S. Yamaguchi.** 2005. Characterization of H5N1 influenza A viruses isolated during the 2003-2004 influenza outbreaks in Japan. *Virology* **332**:167-76.
This paper describes the characterization of different strains of the virus.
35. **Stephenson, I., R. Bugarini, K. G. Nicholson, A. Podda, J. M. Wood, M. C. Zambon, and J. M. Katz.** 2005. Cross-Reactivity to Highly Pathogenic Avian Influenza H5N1 Viruses after Vaccination with Nonadjuvanted and MF59-Adjuvanted Influenza A/Duck/Singapore/97 (H5N3) Vaccine: A Potential Priming Strategy. *J Infect Dis* **191**:1210-5.
This paper reports a vaccination strategy.
36. **Swayne, D. E., and J. R. Beck.** 2005. Experimental study to determine if low-pathogenicity and high-pathogenicity avian influenza viruses can be present in chicken breast and thigh meat following intranasal virus inoculation. *Avian Dis* **49**:81-5.
This paper reports the distribution of strains of the virus in chicken meat after intranasal infection.

NIH Grants:

1	51	1RC1AI048873-01	RAFFERTY, DANIEL	<u>AN INACTIVATED AVIAN INFLUENZA VACCINE FOR PANDEMIC USE</u>
Total: \$26,000		• \$26,000 2000 RAFFERTY, DANIEL E INC. ROCHESTER, PARKEDALE		

			PHARMACEUTICALS, MI	
2	41	1R01AI059374-01A1	MITTAL, SURESH	<u>Adenoviral Vector-based Pandemic Influenza Vaccine</u>
3	41	1RC1AI048872-01	TRENT, DENNIS	<u>DNA BASED GENERATION OF AVIAN INFLUENZA VIRUS VACCINES</u>
Total: \$26,000			<ul style="list-style-type: none"> \$26,000 2000 TRENT, DENNIS W INC. SWIFTWATER, AVENTIS PASTEUR, PA 	
4	41	1UC1AI049519-01	TRENT, DENNIS	<u>DNA Based Generation of Avian Influenza virus Vaccines</u>
Total: \$1,400,000			<ul style="list-style-type: none"> \$1,400,000 2000 TRENT, DENNIS W INC. SWIFTWATER, AVENTIS PASTEUR, PA 	
5	31	1R21AI059214-01	GRAY, GREGORY	<u>Population-based Surveillance for Zoonotic Influenza A</u>
Total: \$295,000			<ul style="list-style-type: none"> \$295,000 2004 Gray, Gregory C UNIVERSITY OF IOWA IOWA CITY, IA 	
6	31	1R01AI060646-01A1	OLSEN, CHRISTOPHER	<u>Host range restriction of human influenza viruses</u>
7	31	1U01AI061252-01	PEKOSZ, ANDREW	<u>M2 peptide based vaccines against influenza</u>
Total: \$1,110,886			<ul style="list-style-type: none"> \$552,548 2005 Pekosz, Andrew S ORION GENOMICS, LLC ST. LOUIS, MO \$558,338 2004 Pekosz, Andrew S JACOBS FACILITIES, INC. ST LOUIS, MO 	
8	31	1UC1AI049509-01	POTASH, LOUIS	<u>Production of Non-Egg grown Influenza Vaccines</u>
Total: \$848,254			<ul style="list-style-type: none"> \$848,254 2000 POTASH, LOUIS INC. ROCKVILLE, NOVAVAX, MD 	
9	21	2R44AI046876-02	HILLEGAS, WILLIAM	<u>Microcarrier / CEF / Media SYSTEM to make Viral Vaccines</u>
Total: \$791,992			<ul style="list-style-type: none"> \$396,090 2002 Hillegas, William J SOLOHILL ENGINEERING, INC. ANN ARBOR, MI \$395,902 2001 Hillegas, William J SOLOHILL ENGINEERING, INC. ANN ARBOR, MI 	
10	21	1Z01BK002026-01	LEVANDOWSKI, R	<u>Influenza Virus Vaccines</u>
11	21	1R43AI063638-01	LI, SHENGQIANG	<u>Improved Genetically Modified H5N1 Influenza Vaccine</u>

Total: \$256,640			<ul style="list-style-type: none"> \$256,640 2005 Li, Shengqiang SCIOGEN, INC. LOS ALTOS, CA 	
12	21	1Z01AI000933-01	SUBBARAO, KANTA	<u>Vaccines for Pandemic Influenza</u>
13	21	1F32AI060292-01A1	TURPIN, ELIZABETH	<u>Regulation of TGF-b by influenza Virus Neuraminidase</u>
Total: \$48,296			<ul style="list-style-type: none"> \$48,296 2005 Turpin, Elizabeth A UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
14	10	1R01AI062950-01A1	BROUILLETTE, WAYNE	<u>New Influenza A Neuraminidase Inhibitors for Biodefense</u>
Total: \$305,100			<ul style="list-style-type: none"> \$305,100 2005 Brouillette, Wayne J UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
15	10	1R21AI056214-01	KATZE, MICHAEL	<u>Proteomic Analysis of the Innate Antiviral Response</u>
Total: \$516,278			<ul style="list-style-type: none"> \$251,689 2004 Katze, Michael G UNIVERSITY OF WASHINGTON SEATTLE, WA \$264,589 2003 Katze, Michael G UNIVERSITY OF WASHINGTON SEATTLE, WA 	
16	10	2R01AI044386-06	KAWAOKA, YOSHIHIRO	<u>Molecular Mechanisms of Influenza Pandemics</u>
Total: \$2,342,539			<ul style="list-style-type: none"> \$546,123 2005 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$526,358 2004 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$319,200 2003 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$310,036 2002 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$301,138 2001 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$339,684 2000 KAWAOKA, YOSHIHIRO UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
17	10	1RC1AI048908-01	LI, SHENGQIANG	<u>LIVE ATTENUATED VACCINES FOR PANDEMIC PREPAREDNESS</u>
Total: \$26,000			<ul style="list-style-type: none"> \$26,000 2000 LI, SHENGQIANG AVIRON MOUNTAIN VIEW, CA 	
18	10	1UC1AI049507-01	LI, SHENGQIANG	<u>Live attenuated vaccines for pandemic preparedness</u>
Total: \$2,680,016			<ul style="list-style-type: none"> \$2,680,016 2000 LI, SHENGQIANG AVIRON MOUNTAIN VIEW, CA 	
19	10	1R01AI052155-01A1	PEREZ, DANIEL	<u>Transmissibility of Influenza A</u>

				<u>Viruses</u>
			Total: \$773,000	<ul style="list-style-type: none"> • \$297,000 2005 Perez, Daniel R UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS COLLEGE PARK, MD • \$377,000 2004 Perez, Daniel R UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS COLLEGE PARK, MD • \$99,000 2003 Perez, Daniel R UNIVERSITY OF MARYLAND COLLEGE PK CAMPUS COLLEGE PARK, MD
20	10	1R01AI059049-01A1	SCHULTZ-CHERRY, STACEY	<u>Lethality of H5N1 Influenza Virus is Linked to TGF-beta</u>
			Total: \$245,175	<ul style="list-style-type: none"> • \$245,175 2005 Schultzcherry, Stacey L UNIVERSITY OF WISCONSIN MADISON MADISON, WI
21	10	1R21AI057941-01	WENTWORTH, DAVID	<u>Discovery of a Novel Promoter in Pathogenic Influenza</u>
			Total: \$586,702	<ul style="list-style-type: none"> • \$297,205 2005 Wentworth, David E WADSWORTH CENTER ALBANY, NY • \$289,497 2004 Wentworth, David E WADSWORTH CENTER ALBANY, NY

Japanese encephalitis virus

Taxonomy: Family *Flaviviridae*, Genus *Flavivirus*, Species *Japanese encephalitis virus*, Virus:

Japanese encephalitis virus, JaOArS982.

Publications:

1. **Bhatt, T. R., M. B. Crabtree, F. Guirakhoo, T. P. Monath, and B. R. Miller.** 2000. Growth characteristics of the chimeric Japanese encephalitis virus vaccine candidate, ChimeriVax-JE (YF/JE SA14--14--2), in *Culex tritaeniorhynchus*, *Aedes albopictus*, and *Aedes aegypti* mosquitoes. *Am J Trop Med Hyg* **62**:480-4.
This paper reports the growth characteristics of a vaccine candidate of the virus in different mosquitoes.
2. **Chang, G. J., A. R. Hunt, and B. Davis.** 2000. A single intramuscular injection of recombinant plasmid DNA induces protective immunity and prevents Japanese encephalitis in mice. *J Virol* **74**:4244-52.
This paper reports the evaluation of a DNA vaccine strategy.
3. **Kanesa-thasan, N., J. J. Smucny, C. H. Hoke, D. H. Marks, E. Konishi, I. Kurane, D. B. Tang, D. W. Vaughn, P. W. Mason, and R. E. Shope.** 2000. Safety and immunogenicity of NYVAC-JEV and ALVAC-JEV attenuated recombinant Japanese encephalitis virus--poxvirus vaccines in vaccinia-nonimmune and vaccinia-immune humans. *Vaccine* **19**:483-91.

- This paper reports the evaluation of a DNA vaccine strategy and vaccine candidate.
4. **Konishi, E., M. Yamaoka, I. Kurane, and P. W. Mason.** 2000. Japanese encephalitis DNA vaccine candidates expressing pre-membrane and envelope genes induce virus-specific memory B cells and long-lasting antibodies in swine. *Virology* **268**:49-55.
This paper reports the evaluation of a DNA candidate.
 5. **Monath, T. P., I. Levenbook, K. Soike, Z. X. Zhang, M. Ratterree, K. Draper, A. D. Barrett, R. Nichols, R. Weltzin, J. Arroyo, and F. Guirakhoo.** 2000. Chimeric yellow fever virus 17D-Japanese encephalitis virus vaccine: dose-response effectiveness and extended safety testing in rhesus monkeys. *J Virol* **74**:1742-51.
This paper reports the evaluation of a DNA candidate.
 6. **Arroyo, J., F. Guirakhoo, S. Fenner, Z. X. Zhang, T. P. Monath, and T. J. Chambers.** 2001. Molecular basis for attenuation of neurovirulence of a yellow fever Virus/Japanese encephalitis virus chimera vaccine (ChimeriVax-JE). *J Virol* **75**:934-42.
This paper reports the characterization of a vaccine candidate.
 7. **Chia, S. C., P. S. Leung, C. P. Liao, J. H. Huang, and S. T. Lee.** 2001. Fragment of Japanese encephalitis virus envelope protein produced in *Escherichia coli* protects mice from virus challenge. *Microb Pathog* **31**:9-19.
This paper reports a vaccine candidate.
 8. **Hunt, A. R., C. B. Cropp, and G. J. Chang.** 2001. A recombinant particulate antigen of Japanese encephalitis virus produced in stably-transformed cells is an effective noninfectious antigen and subunit immunogen. *J Virol Methods* **97**:133-49.
This paper reports a vaccine candidate.
 9. **Konishi, E., A. Fujii, and P. W. Mason.** 2001. Generation and characterization of a mammalian cell line continuously expressing Japanese encephalitis virus subviral particles. *J Virol* **75**:2204-12.
This paper reports the generation of a cell line that releases subviral particles
 10. **Mishin, V. P., F. Cominelli, and V. F. Yamshchikov.** 2001. A 'minimal' approach in design of flavivirus infectious DNA. *Virus Res* **81**:113-23.
This paper reports a vaccine candidate.
 11. **Srivastava, A. K., J. R. Putnak, S. H. Lee, S. P. Hong, S. B. Moon, D. A. Barvir, B. Zhao, R. A. Olson, S. O. Kim, W. D. Yoo, A. C. Towle, D. W. Vaughn, B. L. Innis, and K. H. Eckels.** 2001. A purified inactivated Japanese encephalitis virus vaccine made in Vero cells. *Vaccine* **19**:4557-65.
This paper reports the evaluation of a vaccine candidate.
 12. **Lin, Y. L., H. Y. Lei, Y. S. Lin, T. M. Yeh, S. H. Chen, and H. S. Liu.** 2002. Heparin inhibits dengue-2 virus infection of five human liver cell lines. *Antiviral Res* **56**:93-6.
This paper reports that heparin can inhibit the virus.
 13. **Monath, T. P., J. Arroyo, I. Levenbook, Z. X. Zhang, J. Catalan, K. Draper, and F. Guirakhoo.** 2002. Single mutation in the flavivirus envelope protein hinge region increases neurovirulence for mice and monkeys but decreases viscerotropism for monkeys: relevance to development and safety testing of live, attenuated vaccines. *J Virol* **76**:1932-43.
This paper reports the importance of a single amino acid residue in the envelope protein of flaviviruses for virulence and attenuation.

14. **Tesh, R. B., A. P. Travassos da Rosa, H. Guzman, T. P. Araujo, and S. Y. Xiao.** 2002. Immunization with heterologous flaviviruses protective against fatal West Nile encephalitis. *Emerg Infect Dis* **8**:245-51.
This paper reports the evaluation of the virus as a vaccine for West Nile fever.
15. **Chang, G. J., A. R. Hunt, D. A. Holmes, T. Springfield, T. S. Chiueh, J. T. Roehrig, and D. J. Gubler.** 2003. Enhancing biosynthesis and secretion of premembrane and envelope proteins by the chimeric plasmid of dengue virus type 2 and Japanese encephalitis virus. *Virology* **306**:170-80.
This paper reports the evaluation of a vaccine candidate.
16. **Konishi, E., N. Ajiro, C. Nukuzuma, P. W. Mason, and I. Kurane.** 2003. Comparison of protective efficacies of plasmid DNAs encoding Japanese encephalitis virus proteins that induce neutralizing antibody or cytotoxic T lymphocytes in mice. *Vaccine* **21**:3675-83.
This paper reports the comparison of different vaccine candidates.
17. **Solomon, T., H. Ni, D. W. Beasley, M. Ekkelenkamp, M. J. Cardosa, and A. D. Barrett.** 2003. Origin and evolution of Japanese encephalitis virus in southeast Asia. *J Virol* **77**:3091-8.
This paper reports the sequence of a strain of the virus.
18. **Yun, S. I., S. Y. Kim, C. M. Rice, and Y. M. Lee.** 2003. Development and application of a reverse genetics system for Japanese encephalitis virus. *J Virol* **77**:6450-65.
This paper reports the development of a cDNA clone of the virus.
19. **Beasley, D. W., L. Li, M. T. Suderman, F. Guirakhoo, D. W. Trent, T. P. Monath, R. E. Shope, and A. D. Barrett.** 2004. Protection against Japanese encephalitis virus strains representing four genotypes by passive transfer of sera raised against ChimeriVax-JE experimental vaccine. *Vaccine* **22**:3722-6.
This paper reports the evaluation of a vaccine candidate.

NIH Grants:

1	36	1U19AI057319-010003	GREEN, SHARON	<u>Flaviviruses: Yin-yang of Heterologous Immunity</u>
		Total: \$8,201,872	<ul style="list-style-type: none"> • \$3,211,928 2005 Ennis, Francis A UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$3,092,533 2004 Ennis, Francis A UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$1,897,411 2003 Ennis, Francis A UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	
2	36	1Z01BK007013-01	MARKOFF, L	<u>Infectious DNAs to derive mutant flavi- and alphaviruses</u>
3	24	1R01CI000094-01	FROLOV, ILYA	<u>Molecular Basis of Flavivirus Neurovirulence</u>
4	22	1U01AI061242-01	NAGY, ESZTER	<u>A single-dose prophylactic Japanese</u>

				<u>Encephalitis vaccine</u>
Total: \$1,914,095			<ul style="list-style-type: none"> \$1,914,095 2005 Nagy, Eszter INTERCELL AG AUSTRIA - VIENNA 	
5	12	1Z01BK007006-06	FALGOUT, B	<u>Infectious cDNA technology and RNA virus vaccines</u>
6	12	1Z01BK007006-07	FALGOUT, B	<u>Applications of infectious cDNA technology to RNA virus</u>
7	12	1P01AI055672-010006	STRAUSS, JAMES	<u>Structure-function of alpha- and flavivirus proteins</u>
Total: \$8,127,036 *			<ul style="list-style-type: none"> \$41,733 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$3,082,404 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$2,994,435 2004 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$2,008,464 2003 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN 	
8	11	1Z01BK007006-05	FALGOUT, B	<u>Applications of infectious cDNA technology to RNA virus</u>

Lumpy skin disease virus

Taxonomy: Family *Poxviridae*, Subfamily *Chordopoxvirinae*, Genus *Capripoxvirus*, Species

Lumpy skin disease virus. Virus: Lumpy skin disease virus.

Publications:

- Tulman, E. R., C. L. Afonso, Z. Lu, L. Zsak, G. F. Kutish, and D. L. Rock.** 2001. Genome of Lumpy Skin Disease Virus. *J Virol* **75**:7122-30.
This paper describes the sequencing and characterization of Lumpy skin disease virus.
- Kara, P. D., C. L. Afonso, D. B. Wallace, G. F. Kutish, C. Abolnik, Z. Lu, F. T. Vreede, L. C. F. Taljaard, A. Zsak, G. J. Viljoen, D. L. Rock.** 2003. Comparative sequence analysis of the South African vaccine strain and two virulent field isolates of Lumpy skin disease virus. *Arch Virol* **148**:1335-56.
This paper describes the sequencing and comparison of various virulent and attenuated strains of Lumpy skin disease virus.

NIH grants: None identified.

Menangle virus

Taxonomy: Order: *Mononegavirales*, Family *Paramyxoviridae*, Subfamily *Paramyxovirinae*, Genus *Rubulavirus*, Species *Menangle virus*. Virus: Menangle virus.

Publications: None identified.

NIH grants: None

Monkeypox virus

Taxonomy: Family *Poxviridae*, Subfamily *Chordopoxvirinae*, Genus *Orthopoxvirus*, Species: *Monkeypox virus*, Virus: Monkeypox virus.

Publications:

1. **Loparev, V. N., R. F. Massung, J. J. Esposito, and H. Meyer.** 2001. Detection and differentiation of old world orthopoxviruses: restriction fragment length polymorphism of the crmB gene region. *J Clin Microbiol* **39**:94-100.
This paper describes the development of a restriction fragment length polymorphism assay to differentiate various poxviruses including *Camelpoxvirus*, *Monkeypox virus*, and *Variola virus*.
2. **Shchelkunov, S. N., A. V. Totmenin, I. V. Babkin, P. F. Safronov, O. I. Ryazankina, N. A. Petrov, V. V. Gutorov, E. A. Uvarova, M. V. Mikheev, J. R. Sisler, J. J. Esposito, P. B. Jahrling, B. Moss, and L. S. Sandakhchiev.** 2001. Human monkeypox and smallpox viruses: genomic comparison. *FEBS Lett* **509**:66-70.
This paper describes the cloning and sequencing of individual genomic fragments of a strain of *Monkeypox virus*, and the final determination of its full sequence. The sequence is then compared to that of *Variola virus*.
3. **Smee, D. F., M. Bray, and J. W. Huggins.** 2001. Antiviral activity and mode of action studies of ribavirin and mycophenolic acid against orthopoxviruses in vitro. *Antivir Chem Chemother* **12**:327-35.
This paper describes the testing of various antiviral against Camelpox and Monkeypox virus.
4. **Espy, M. J., I. F. Cockerill, R. F. Meyer, M. D. Bowen, G. A. Poland, T. L. Hadfield, and T. F. Smith.** 2002. Detection of smallpox virus DNA by LightCycler PCR. *J Clin Microbiol* **40**:1985-8.
This paper describes the development of a rapid real-time LightCycler PCR assay for laboratory detection of orthopoxviruses. Live *Monkeypox virus* was used in these experiments.

5. **Shchelkunov, S. N., A. V. Totmenin, P. F. Safronov, M. V. Mikheev, V. V. Gutorov, O. I. Ryazankina, N. A. Petrov, I. V. Babkin, E. A. Uvarova, L. S. Sandakhchiev, J. R. Sisler, J. J. Esposito, I. K. Damon, P. B. Jahrling, and B. Moss.** 2002. Analysis of the monkeypox virus genome. *Virology* **297**:172-94.
This paper describes the cloning and sequencing of individual genomic fragments of a strain of *Monkeypox virus*, and the final determination of its full sequence. The sequence is then compared to that of *Variola virus*.
6. **Baker, R. O., M. Bray, and J. W. Huggins.** 2003. Potential antiviral therapeutics for smallpox, monkeypox and other orthopoxvirus infections. *Antiviral Res* **57**:13-23.
This paper describes the evaluation of 24 different potential antivirals for their activity against *Variola virus* (35 strains), *Monkeypox virus*, and *Camelpox virus*. Several active compounds were isolated.
7. **Chu, C. K., Y. H. Jin, R. O. Baker, and J. Huggins.** 2003. Antiviral activity of cyclopentenyl nucleosides against orthopox viruses (Smallpox, monkeypox and cowpox). *Bioorg Med Chem Lett* **13**:9-12.
This paper describes the synthesis and testing of novel antivirals for antiviral activity against *Variola virus* and *Monkeypox virus*. Several active compounds are described.
8. **Jin, Y. H., P. Liu, J. Wang, U. Das, R. Baker, J. Huggins, and C. K. Chu.** 2003. Practical synthesis of D- and L-2-cyclopentenone and their utility for the synthesis of carbocyclic antiviral nucleosides against orthopox viruses (smallpox, monkeypox, and cowpox virus). *J Org Chem* **68**:9012-8.
This paper describes the synthesis and testing of novel antivirals for antiviral activity against *Variola virus* and *Monkeypox virus*. Several active compounds are described.
9. **Laassri, M., V. Chizhikov, M. Mikheev, S. Shchelkunov, and K. Chumakov.** 2003. Detection and discrimination of orthopoxviruses using microarrays of immobilized oligonucleotides. *J Virol Methods* **112**:67-78.
This paper describes the creation of a novel diagnostic microarray system that can identify and differentiate *Variola virus* and *Monkeypox virus*.
10. **Sofi Ibrahim, M., D. A. Kulesh, S. S. Saleh, I. K. Damon, J. J. Esposito, A. L. Schmaljohn, and P. B. Jahrling.** 2003. Real-time PCR assay to detect smallpox virus. *J Clin Microbiol* **41**:3835-9.
This paper describes the development of a real-time 5' nuclease PCR assay (also known as the TaqMan assay) for the rapid diagnosis of *Variola virus*. 48 different strains of *Variola virus* were used. Controls included *Camelpox virus*, and *Monkeypox virus*.
11. **Olson, V. A., T. Laue, M. T. Laker, I. V. Babkin, C. Drosten, S. N. Shchelkunov, M. Niedrig, I. K. Damon, and H. Meyer.** 2004. Real-time PCR system for detection of orthopoxviruses and simultaneous identification of smallpox virus. *J Clin Microbiol* **42**:1940-6.
This paper describes the development of a real-time PCR system for various orthopoxviruses including *Variola virus*, *Monkeypox virus*, *Camelpox virus*, and *Cowpox virus*. Several active compounds were isolated.

NIH Grants:

1	100	1R21AI061512-01	BULLER, R	<u>Study of monkeypox virus in rodents</u>
Total: \$294,000			<ul style="list-style-type: none"> \$294,000 2004 Buller, R Markl JACOBS FACILITIES, INC. ST LOUIS, MO 	
2	100	1R01AI054922-01	RELMAN, DAVID	<u>Host responses to smallpox and monkeypox</u>
Total: \$952,661			<ul style="list-style-type: none"> \$315,035 2005 Relman, David A STANFORD UNIVERSITY STANFORD, CA \$315,054 2004 Relman, David A STANFORD UNIVERSITY STANFORD, CA \$322,572 2003 Relman, David A STANFORD UNIVERSITY STANFORD, CA 	
3	33	1R01AI057029-01	AMARA, RAMA RAO	<u>Poxvirus Immunity and DNA/MVA HIV Vaccines</u>
Total: \$1,321,139			<ul style="list-style-type: none"> \$448,777 2005 Amara, Ramarao EMORY UNIVERSITY ATLANTA, GA \$629,365 2004 Amara, Ramarao EMORY UNIVERSITY ATLANTA, GA \$242,997 2003 Amara, Rama R EMORY UNIVERSITY ATLANTA, GA 	
4	17	1R21AI053346-01	BULLER, R	<u>Immunodominant epitopes of a smallpox vaccine in humans</u>
Total: \$412,295			<ul style="list-style-type: none"> \$200,022 2003 Buller, Robert M MISSOURI WESTERN STATE COLLEGE ST. JOSEPH, MO \$212,273 2002 Buller, Mark R VIRRX, INC. ST. LOUIS, MO 	
5	17	1Z01BK008010-04	CHUMAKOV, KONSTANTIN	<u>DNA Microarray Evaluation of Vaccine Safety</u>
6	17	1R21AI064615-01	HOSTETLER, KARL	<u>Lung-Targeted Poxivirus Antivirals</u>
Total: \$288,800			<ul style="list-style-type: none"> \$288,800 2005 Hostetler, Karl Y VETERANS MEDICAL RESEARCH FDN/SAN DIEGO SAN DIEGO, CA 	
7	17	1R01AI066501-01	JACOBS, BERTRAM	<u>Development of a post-exposure vaccine for smallpox</u>
Total: \$1,097,389			<ul style="list-style-type: none"> \$1,097,389 2005 Jacobs, Bertram L ARIZONA STATE UNIVERSITY TEMPE, AZ 	
8	17	1U01AI066326-01	JACOBS, BERTRAM	<u>Disabling Vaccinia IFNα: A New Smallpox Vaccine</u>
9	17	1U01AI048494-01	PARREN, PAUL	<u>NEUTRALIZING ANTIBODIES AGAINST ORTHOPOX VIRUSES</u>

Total: \$1,754,505			<ul style="list-style-type: none"> • \$379,746 2004 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$368,686 2003 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$321,151 2002 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA • \$347,522 2001 Parren, Paul W SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA • \$337,400 2000 PARREN, PAUL W SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
10	17	1UC1AI062650-01	WARD, DAVID	<u>Development of Protease Inhibitor to Treat Smallpox</u>
Total: \$2,730,597			<ul style="list-style-type: none"> • \$2,730,597 2004 Ward, David P TRANSTECH PHARMA, INC. HIGH POINT, NC 	

Mycoplasma capricolum capripneumoniae (formerly known as Mycoplasma F38)

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Mollicutes*, Order *Mycoplasmatales*,

Family *Mycoplasmataceae*.

Publications:

1. **Gasparich, G. E., R. F. Whitcomb, D. Dodge, F. E. French, J. Glass, and D. L. Williamson.** 2004. The genus Spiroplasma and its non-helical descendants: phylogenetic classification, correlation with phenotype and roots of the Mycoplasma mycoides clade. *Int J Syst Evol Microbiol* **54**:893-918.
This paper reports the phylogenetic relationship of the bacterium to other mollicutes.

NIH Grants:

1	24	1R01AI047937-01A1	CALCUTT, MICHAEL	<u>Novel Integrative Genetic Elements of Mycoplasmas</u>
Total: \$543,750			<ul style="list-style-type: none"> • \$181,250 2003 Calcutt, Michael J UNIVERSITY OF MISSOURI COLUMBIA, MO • \$181,250 2002 Calcutt, Michael J UNIVERSITY OF MISSOURI COLUMBIA COLUMBIA, MO • \$181,250 2001 Calcutt, Michael J UNIVERSITY OF MISSOURI COLUMBIA COLUMBIA, MO 	

Mycoplasma mycoides capri

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Mollicutes*, Order *Mycoplasmatales*,
Family *Mycoplasmataceae*.

Publications: None identified.

NIH Grants: None identified.

Mycoplasma mycoides mycoides

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Mollicutes*, Order *Mycoplasmatales*,
Family *Mycoplasmataceae*.

Publications:

1. **Rurangirwa, F. R., P. S. Shompole, A. N. Wambugu, and T. C. McGuire.** 2000. Monoclonal antibody differentiation of *Mycoplasma mycoides* subsp. *mycoides* small-colony strains causing contagious bovine pleuropneumonia from less important large-colony strains. *Clin Diagn Lab Immunol* **7**:519-21.
This paper reports the identification of an antibody capable of differentiating different morphovariants of the bacterium.
2. **Gasparich, G. E., R. F. Whitcomb, D. Dodge, F. E. French, J. Glass, and D. L. Williamson.** 2004. The genus *Spiroplasma* and its non-helical descendants: phylogenetic classification, correlation with phenotype and roots of the *Mycoplasma mycoides* clade. *Int J Syst Evol Microbiol* **54**:893-918.
This paper reports the phylogenetic relationship of the bacterium to other mollicutes.
3. **Nicolas, M. M., I. H. Stalis, T. L. Clippinger, M. Busch, R. Nordhausen, G. Maalouf, and M. D. Schrenzel.** 2005. Systemic disease in Vaal rhebok (*Pelea capreolus*) caused by mycoplasmas in the *mycoides* cluster. *J Clin Microbiol* **43**:1330-40.
This paper reports the isolation and molecular characterization of a new strain of the bacterium from a sick Vaal rhebok.

NIH Grants: None identified.

Newcastle disease virus

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*, Genus *Avulavirus*, Species *Newcastle disease virus*, Virus: Newcastle disease virus, Australia-Victoria isolate, Ulster 2C, D26, Beaudette C.

Publications:

1. **Azimi, N., K. M. Shiramizu, Y. Tagaya, J. Mariner, and T. A. Waldmann.** 2000. Viral activation of interleukin-15 (IL-15): characterization of a virus-inducible element in the IL-15 promoter region. *J Virol* **74**:7338-48.
This paper reports that the virus can activate the production of a cytokine in the infected cell.
2. **Li, Y. C., D. R. Ledoux, A. J. Bermudez, K. L. Fritsche, and G. E. Rottinghaus.** 2000. The individual and combined effects of fumonisin B1 and moniliformin on performance and selected immune parameters in turkey poults. *Poult Sci* **79**:871-8.
This paper reports the effect on the immune system of two antibiotics on turkey poults.
3. **Li, Y. C., D. R. Ledoux, A. J. Bermudez, K. L. Fritsche, and G. E. Rottinghaus.** 2000. Effects of moniliformin on performance and immune function of broiler chicks. *Poult Sci* **79**:26-32.
This paper reports the effect on the immune system of two antibiotics on broiler chicks.
4. **Reynolds, D. L., and A. D. Maraqa.** 2000. Protective immunity against Newcastle disease: the role of antibodies specific to Newcastle disease virus polypeptides. *Avian Dis* **44**:138-44.
This paper reports the evaluation of vaccine candidates.
5. **Reynolds, D. L., and A. D. Maraqa.** 2000. Protective immunity against Newcastle disease: the role of cell-mediated immunity. *Avian Dis* **44**:145-54.
This paper reports the evaluation of vaccine candidates.
6. **Seal, B. S., D. J. King, and R. J. Meinersmann.** 2000. Molecular evolution of the Newcastle disease virus matrix protein gene and phylogenetic relationships among the paramyxoviridae. *Virus Res* **66**:1-11.
This paper reports phylogenetic relationships of strains of the virus and other paramyxoviruses.
7. **Takimoto, T., G. L. Taylor, S. J. Crennell, R. A. Scroggs, and A. Portner.** 2000. Crystallization of Newcastle disease virus hemagglutinin-neuraminidase glycoprotein. *Virology* **270**:208-14.
This paper reports the crystal structure of a surface protein of the virus.
8. **Trigante, G., and W. H. Huestis.** 2000. Selective virus-mediated intracellular delivery of membrane-impermeant compounds by means of plasma membrane vesicles. *Antiviral Res* **45**:211-21.
This paper reports the use of the virus as a helper to deliver lipophilic molecules inside a cell.

9. **Ward, M. D., F. J. Fuller, Y. Mehrotra, and E. V. De Buysscher.** 2000. Nucleotide sequence and vaccinia expression of the nucleoprotein of a highly virulent, neurotropic strain of Newcastle disease virus. *Avian Dis* **44**:34-44.
This paper reports the sequence of the nucleoprotein of a strain of the virus.
10. **Barnes, B. J., P. A. Moore, and P. M. Pitha.** 2001. Virus-specific activation of a novel interferon regulatory factor, IRF-5, results in the induction of distinct interferon alpha genes. *J Biol Chem* **276**:23382-90.
This paper reports the activation of an interferon-regulatory factor by the virus.
11. **Berinstein, A., H. S. Sellers, D. J. King, and B. S. Seal.** 2001. Use of a heteroduplex mobility assay to detect differences in the fusion protein cleavage site coding sequence among Newcastle disease virus isolates. *J Clin Microbiol* **39**:3171-8.
This paper reports the development of a diagnostic system to differentiate between different strains of the virus.
12. **El Tayeb, A. B., and R. P. Hanson.** 2001. The interaction between Newcastle disease virus and Escherichia coli endotoxin in chickens. *Avian Dis* **45**:313-20.
This paper reports the effect of endotoxins on the susceptibility of chickens to infections with the virus.
13. **Graves, I. L.** 2001. Agglutination-separation reactions of red blood cells sensitized with Newcastle disease virus: quantities, agglutination characteristics, and serology of altered virus and HN spikes released following neuraminidase reactivation. *Vet Res* **32**:475-89.
This paper reports the development of an assay to differentiate between different strains of the virus.
14. **Huang, Z., S. Krishnamurthy, A. Panda, and S. K. Samal.** 2001. High-level expression of a foreign gene from the most 3'-proximal locus of a recombinant Newcastle disease virus. *J Gen Virol* **82**:1729-36.
This paper reports the expression of a foreign gene from a recombinant strain of the virus.
15. **Iwamura, T., M. Yoneyama, N. Koizumi, Y. Okabe, H. Namiki, C. E. Samuel, and T. Fujita.** 2001. PACT, a double-stranded RNA binding protein acts as a positive regulator for type I interferon gene induced by Newcastle disease virus. *Biochem Biophys Res Commun* **282**:515-23.
This paper reports the identification of a protein mediating the interferon response induced by the virus.
16. **King, D. J.** 2001. Selection of thermostable Newcastle disease virus progeny from reference and vaccine strains. *Avian Dis* **45**:512-6.
This paper reports the isolation of a novel strain of the virus.
17. **Kommers, G. D., D. J. King, B. S. Seal, and C. C. Brown.** 2001. Virulence of pigeon-origin Newcastle disease virus isolates for domestic chickens. *Avian Dis* **45**:906-21.
This paper reports the virulence of a novel strain of the virus.
18. **Marcus, P. I., and M. J. Sekellick.** 2001. Combined sequential treatment with interferon and dsRNA abrogates virus resistance to interferon action. *J Interferon Cytokine Res* **21**:423-9.
This paper reports the effect of a interferon regimen on the replication of the virus.

19. **Nakaya, T., J. Cros, M. S. Park, Y. Nakaya, H. Zheng, A. Sagraera, E. Villar, A. Garcia-Sastre, and P. Palese.** 2001. Recombinant Newcastle disease virus as a vaccine vector. *J Virol* **75**:11868-73.
This paper reports the development of a vaccine candidate.
20. **Phuangsab, A., R. M. Lorence, K. W. Reichard, M. E. Peeples, and R. J. Walter.** 2001. Newcastle disease virus therapy of human tumor xenografts: antitumor effects of local or systemic administration. *Cancer Lett* **172**:27-36.
This paper reports the anti-tumor effect of the virus after infection of mice.
21. **Sagraera, A., C. Cobaleda, J. M. Gonzalez De Buitrago, A. Garcia-Sastre, and E. Villar.** 2001. Membrane glycoproteins of Newcastle disease virus: nucleotide sequence of the hemagglutinin-neuraminidase cloned gene and structure/function relationship of predicted amino acid sequence. *Glycoconj J* **18**:283-9.
This paper reports the sequence of a surface protein-encoding gene of different strains of the virus.
22. **Alfaro, J. C., V. M. Petrone, T. Fehervari, G. Nava, M. Kogut, D. Nisbet, and G. Tellez.** 2002. Resistance to velogenic Newcastle disease virus in leghorn chickens by use of prophylactic lymphokines. *Avian Dis* **46**:525-34.
This paper reports the use of cytokines to prevent infection with the virus.
23. **Bai, L., J. Koopmann, C. Fiola, P. Fournier, and V. Schirmacher.** 2002. Dendritic cells pulsed with viral oncolysates potently stimulate autologous T cells from cancer patients. *Int J Oncol* **21**:685-94.
This paper reports an *ex vivo* stimulation protocol for cancer reactive memory T cells based on autologous dendritic cells using lysates from tumor cells infected with the virus.
24. **Barnes, B. J., M. J. Kellum, A. E. Field, and P. M. Pitha.** 2002. Multiple regulatory domains of IRF-5 control activation, cellular localization, and induction of chemokines that mediate recruitment of T lymphocytes. *Mol Cell Biol* **22**:5721-40.
This paper reports that and how several agents, including the virus, activate the host-cell interferon response.
25. **Connaris, H., T. Takimoto, R. Russell, S. Crennell, I. Moustafa, A. Portner, and G. Taylor.** 2002. Probing the sialic acid binding site of the hemagglutinin-neuraminidase of Newcastle disease virus: identification of key amino acids involved in cell binding, catalysis, and fusion. *J Virol* **76**:1816-24.
This paper reports characteristics of the receptor-binding process of the virus.
26. **El Tayeb, A. B., and R. P. Hanson.** 2002. Interactions between *Escherichia coli* and Newcastle disease virus in chickens. *Avian Dis* **46**:660-7.
This paper reports the interaction of a bacterium and the virus in chickens.
27. **Fair, J. M., and R. E. Ricklefs.** 2002. Physiological, growth, and immune responses of Japanese quail chicks to the multiple stressors of immunological challenge and lead shot. *Arch Environ Contam Toxicol* **42**:77-87.
This paper reports the effect of the virus on the development of quail chicks.
28. **Kommers, G. D., D. J. King, B. S. Seal, K. P. Carmichael, and C. C. Brown.** 2002. Pathogenesis of six pigeon-origin isolates of Newcastle disease virus for domestic chickens. *Vet Pathol* **39**:353-62.

- This paper reports the pathogenesis of pigeons infected with the virus.
29. **McGinnes, L. W., K. Gravel, and T. G. Morrison.** 2002. Newcastle disease virus HN protein alters the conformation of the F protein at cell surfaces. *J Virol* **76**:12622-33.
- This paper reports the interaction between two different cell-surface proteins of the virus.
30. **Pang, Y., H. Wang, T. Girshick, Z. Xie, and M. I. Khan.** 2002. Development and application of a multiplex polymerase chain reaction for avian respiratory agents. *Avian Dis* **46**:691-9.
- This paper reports the development of a PCR-based diagnostic assay for detection of the virus.
31. **Saif, Y. M., and K. E. Nestor.** 2002. Increased mortality in turkeys selected for increased body weight following vaccination with a live Newcastle disease virus vaccine. *Avian Dis* **46**:505-8.
- This paper reports the effects of a vaccine candidate on turkeys.
32. **Schiltz, J. F., K. Kesari, H. R. Ashar, and K. Chada.** 2002. Hmgi-c-independent Activation of MuRantes in Vivo. *Cell Growth Differ* **13**:39-45.
- This paper reports the effect of the virus on expression of a host-cell development factor.
33. **Seal, B. S., J. M. Crawford, H. S. Sellers, D. P. Locke, and D. J. King.** 2002. Nucleotide sequence analysis of the Newcastle disease virus nucleocapsid protein gene and phylogenetic relationships among the Paramyxoviridae. *Virus Res* **83**:119-29.
- This paper reports the sequence of the nucleocapsid protein of the virus and its phylogenetic relationships.
34. **Sharma, J. M., Y. Zhang, D. Jensen, S. Rautenschlein, and H. Y. Yeh.** 2002. Field trial in commercial broilers with a multivalent in ovo vaccine comprising a mixture of live viral vaccines against Marek's disease, infectious bursal disease, Newcastle disease, and fowl pox. *Avian Dis* **46**:613-22.
- This paper reports the evaluation of a vaccine.
35. **Turpin, E. A., L. E. Perkins, and D. E. Swayne.** 2002. Experimental infection of turkeys with avian pneumovirus and either Newcastle disease virus or *Escherichia coli*. *Avian Dis* **46**:412-22.
- This paper reports the infection of turkeys with the virus.
36. **Barnes, B. J., A. E. Field, and P. M. Pitha-Rowe.** 2003. Virus-induced heterodimer formation between IRF-5 and IRF-7 modulates assembly of the IFNA enhanceosome in vivo and transcriptional activity of IFNA genes. *J Biol Chem* **278**:16630-41.
- This paper reports the effects of the virus on the host-cell interferon response.
37. **Chen, C., J. E. Sander, and N. M. Dale.** 2003. The effect of dietary lysine deficiency on the immune response to Newcastle disease vaccination in chickens. *Avian Dis* **47**:1346-51.
- This paper reports the effect of a specific diet for chickens on the immune response to the virus.
38. **Ghosh, A. K., M. Majumder, R. Steele, R. Ray, and R. B. Ray.** 2003. Modulation of interferon expression by hepatitis C virus NS5A protein and human homeodomain protein PTX1. *Virology* **306**:51-9.
- This paper reports the effect of a viral protein on the interferon response using the virus as a control.

39. **Huang, Z., S. Krishnamurthy, A. Panda, and S. K. Samal.** 2003. Newcastle disease virus V protein is associated with viral pathogenesis and functions as an alpha interferon antagonist. *J Virol* **77**:8676-85.
This paper reports the identification of a protein of the virus as an interferon antagonist.
40. **Kapczynski, D. R., and T. M. Tumpey.** 2003. Development of a virosome vaccine for Newcastle disease virus. *Avian Dis* **47**:578-87.
This paper reports the development of a vaccine candidate.
41. **Kommers, G. D., D. J. King, B. S. Seal, and C. C. Brown.** 2003. Pathogenesis of chicken-passaged Newcastle disease viruses isolated from chickens and wild and exotic birds. *Avian Dis* **47**:319-29.
This paper reports the pathogenesis of a strain of the virus.
42. **Kommers, G. D., D. J. King, B. S. Seal, and C. C. Brown.** 2003. Virulence of six heterogeneous-origin Newcastle disease virus isolates before and after sequential passages in domestic chickens. *Avian Pathol* **32**:81-93.
This paper reports the pathogenesis of different strains of the virus with different passaging history.
43. **Lam, K. M.** 2003. Newcastle disease virus-induced damage to embryonic tracheae and red blood cells. *Avian Dis* **47**:197-202.
This paper reports the effect of the virus on bird embryos.
44. **McGinnes, L. W., J. N. Reitter, K. Gravel, and T. G. Morrison.** 2003. Evidence for mixed membrane topology of the Newcastle disease virus fusion protein. *J Virol* **77**:1951-63.
This paper reports structural characteristics of a surface protein of the virus.
45. **Park, M. S., A. Garcia-Sastre, J. F. Cros, C. F. Basler, and P. Palese.** 2003. Newcastle disease virus V protein is a determinant of host range restriction. *J Virol* **77**:9522-32.
This paper reports the identification of a protein of the virus that restricts its host range.
46. **Park, M. S., M. L. Shaw, J. Munoz-Jordan, J. F. Cros, T. Nakaya, N. Bouvier, P. Palese, A. Garcia-Sastre, and C. F. Basler.** 2003. Newcastle disease virus (NDV)-based assay demonstrates interferon-antagonist activity for the NDV V protein and the Nipah virus V, W, and C proteins. *J Virol* **77**:1501-11.
This paper reports the anti-interferon properties of a protein of the virus.
47. **Spackman, E., C. R. Pope, S. S. Cloud, and J. K. Rosenberger.** 2003. The effects of avian leukosis virus subgroup J on broiler chicken performance and response to vaccination. *Avian Dis* **47**:618-26.
This paper reports the effect of infection with a reovirus on infection with the vaccine strain of the virus.
48. **Zanetti, F., M. Rodriguez, D. J. King, I. Capua, E. Carrillo, B. S. Seal, and A. Berinstein.** 2003. Matrix protein gene sequence analysis of avian paramyxovirus 1 isolates obtained from pigeons. *Virus Genes* **26**:199-206.
This paper reports the sequencing of a gene of a strain of the virus.
49. **Csatary, L. K., G. Gosztonyi, J. Szeberenyi, Z. Fabian, V. Liszka, B. Bodey, and C. M. Csatary.** 2004. MTH-68/H oncolytic viral treatment in human high-grade gliomas. *J Neurooncol* **67**:83-93.

- This paper reports the use of a strain of the virus as a treatment for a certain kind of cancer.
50. **Cui, K., P. Tailor, H. Liu, X. Chen, K. Ozato, and K. Zhao.** 2004. The chromatin-remodeling BAF complex mediates cellular antiviral activities by promoter priming. *Mol Cell Biol* **24**:4476-86.
This paper sheds light on the mechanism underlying the interferon response of infected cells.
51. **Huang, Z., S. Elankumaran, A. S. Yunus, and S. K. Samal.** 2004. A recombinant Newcastle disease virus (NDV) expressing VP2 protein of infectious bursal disease virus (IBDV) protects against NDV and IBDV. *J Virol* **78**:10054-63.
This paper reports the development of a vaccine candidate.
52. **Huang, Z., A. Panda, S. Elankumaran, D. Govindarajan, D. D. Rockemann, and S. K. Samal.** 2004. The hemagglutinin-neuraminidase protein of Newcastle disease virus determines tropism and virulence. *J Virol* **78**:4176-84.
This paper reports the identification of a surface protein of the virus as the principal determinant of cell tropism and virulence.
53. **Malik, Y. S., D. P. Patnayak, and S. M. Goyal.** 2004. Detection of three avian respiratory viruses by single-tube multiplex reverse transcription-polymerase chain reaction assay. *J Vet Diagn Invest* **16**:244-8.
This paper reports the identification of strains of the virus by a PCR-based detection system.
54. **Nakaya, Y., T. Nakaya, M. S. Park, J. Cros, J. Imanishi, P. Palese, and A. Garcia-Sastre.** 2004. Induction of cellular immune responses to simian immunodeficiency virus gag by two recombinant negative-strand RNA virus vectors. *J Virol* **78**:9366-75.
This paper reports the use of a recombinant strain of the virus as a possible HIV vaccine.
55. **O'Donoghue, K., B. Lomniczi, B. McFerran, T. J. Connor, B. Seal, D. King, J. Banks, R. Manvell, P. S. White, K. Richmond, P. Jackson, and M. Hugh-Jones.** 2004. Retrospective characterization of Newcastle Disease Virus Antrim '73 in relation to other epidemics, past and present. *Epidemiol Infect* **132**:357-68.
This paper reports the characterization of a strain of the virus.
56. **Panda, A., S. Elankumaran, S. Krishnamurthy, Z. Huang, and S. K. Samal.** 2004. Loss of N-linked glycosylation from the hemagglutinin-neuraminidase protein alters virulence of Newcastle disease virus. *J Virol* **78**:4965-75.
This paper reports the importance of glycosylation of a surface protein of the virus for virulence.
57. **Panda, A., Z. Huang, S. Elankumaran, D. D. Rockemann, and S. K. Samal.** 2004. Role of fusion protein cleavage site in the virulence of Newcastle disease virus. *Microb Pathog* **36**:1-10.
This paper reports the importance of a cleavage site of a surface protein of the virus for virulence.
58. **Pedersen, J. C., D. A. Senne, P. R. Woolcock, H. Kinde, D. J. King, M. G. Wise, B. Panigrahy, and B. S. Seal.** 2004. Phylogenetic relationships among virulent Newcastle disease virus isolates from the 2002-2003 outbreak in California and other recent outbreaks in North America. *J Clin Microbiol* **42**:2329-34.

- This paper reports partial sequences of different strains of the virus and their phylogenetic relation.
59. **Porotto, M., M. Murrell, O. Greengard, M. C. Lawrence, J. L. McKimm-Breschkin, and A. Moscona.** 2004. Inhibition of parainfluenza virus type 3 and Newcastle disease virus hemagglutinin-neuraminidase receptor binding: effect of receptor avidity and steric hindrance at the inhibitor binding sites. *J Virol* **78**:13911-9.
This paper reports characteristics of the receptor-binding process of the virus.
60. **Seal, B. S.** 2004. Nucleotide and predicted amino acid sequence analysis of the fusion protein and hemagglutinin-neuraminidase protein genes among Newcastle disease virus isolates. Phylogenetic relationships among the Paramyxovirinae based on attachment glycoprotein sequences. *Funct Integr Genomics* **4**:246-57.
This paper reports the phylogeny of strains of the virus based on sequencing of two genes.
61. **Swayne, D. E., and J. R. Beck.** 2004. Heat inactivation of avian influenza and Newcastle disease viruses in egg products. *Avian Pathol* **33**:512-8.
This paper reports the heat inactivation of the virus in egg products.
62. **Wise, M. G., H. S. Sellers, R. Alvarez, and B. S. Seal.** 2004. RNA-dependent RNA polymerase gene analysis of worldwide Newcastle disease virus isolates representing different virulence types and their phylogenetic relationship with other members of the paramyxoviridae. *Virus Res* **104**:71-80.
This paper reports the phylogenetic relationships of strains of the virus to each other and other paramyxoviruses based on sequences of their polymerase genes.
63. **Wise, M. G., D. L. Suarez, B. S. Seal, J. C. Pedersen, D. A. Senne, D. J. King, D. R. Kapczynski, and E. Spackman.** 2004. Development of a real-time reverse-transcription PCR for detection of newcastle disease virus RNA in clinical samples. *J Clin Microbiol* **42**:329-38.
This paper reports the development of a PCR-based diagnostic system for the detection of the virus.
64. **Crossley, B. M., S. K. Hietala, L. M. Shih, L. Lee, E. W. Skowronski, and A. A. Ardans.** 2005. High-throughput real-time RT-PCR assay to detect the exotic Newcastle Disease Virus during the California 2002--2003 outbreak. *J Vet Diagn Invest* **17**:124-32.
This paper reports the development of a PCR-based diagnostic system for the detection of the virus.
65. **Kapczynski, D. R., and D. J. King.** 2005. Protection of chickens against overt clinical disease and determination of viral shedding following vaccination with commercially available Newcastle disease virus vaccines upon challenge with highly virulent virus from the California 2002 exotic Newcastle disease outbreak. *Vaccine* **23**:3424-33.
This paper reports the evaluation of a vaccine.
66. **Marcos, F., L. Ferreira, J. Cros, M. S. Park, T. Nakaya, A. Garcia-Sastre, and E. Villar.** 2005. Mapping of the RNA promoter of Newcastle disease virus. *Virology* **331**:396-406.
This paper reports the identification of the RNA promoter of the virus.
67. **Munir, S., J. M. Sharma, and V. Kapur.** 2005. Transcriptional response of avian cells to infection with Newcastle disease virus. *Virus Res* **107**:103-8.
This paper reports the reaction of avian cells to infection with the virus.

68. **Seal, B. S., M. G. Wise, J. C. Pedersen, D. A. Senne, R. Alvarez, M. S. Scott, D. J. King, Q. Yu, and D. R. Kapczynski.** 2005. Genomic sequences of low-virulence avian paramyxovirus-1 (Newcastle disease virus) isolates obtained from live-bird markets in North America not related to commonly utilized commercial vaccine strains. *Vet Microbiol* **106**:7-16.
This paper reports the genomic sequence of a strain of the virus.
69. **Zhao, Y., and R. W. Hammond.** 2005. Development of a candidate vaccine for Newcastle disease virus by epitope display in the Cucumber mosaic virus capsid protein. *Biotechnol Lett* **27**:375-82.
This paper reports the development of a vaccine candidate.

NIH Grants:

1	28	1U54AI057158-010002	CRYSTAL, RONALD	<u>Vaccine Platforms</u>
		Total: \$21,685,329	<ul style="list-style-type: none"> • \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY • \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY • \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY 	
2	28	1R01AI049309-01A1	FINBERG, ROBERT	<u>TLRs in Innate Immunity to Viral Infection</u>
		Total: \$1,429,876	<ul style="list-style-type: none"> • \$357,750 2005 Finberg, Robert W UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$357,750 2004 Finberg, Robert W UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$357,750 2003 Finberg, Robert W UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$356,626 2002 Finberg, Robert W UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	
3	28	2R01AI030572-11A1	MORRISON, TRUDY	<u>Paramyxovirus Membrane Fusion</u>
		Total: \$1,569,304	<ul style="list-style-type: none"> • \$357,750 2005 Morrison, Trudy G UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$357,750 2004 Morrison, Trudy G UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$357,750 2003 Morrison, Trudy G UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$198,126 2002 Morrison, Trudy G UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$297,928 2000 MORRISON, TRUDY G UNIVERSITY OF MASSACHUSETTS MEDICAL SCH WORCESTER, MA 	

4	28	2R21AI030572-11	MORRISON, TRUDY	<u>Paramyxovirus Entry</u>
Total: \$314,666			<ul style="list-style-type: none"> \$314,666 2001 Morrison, Trudy G. UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	
5	28	1R21AI051170-01	SCHNELL, MATTHIAS	<u>Prime/Boost Immunization against HIV-1 by Viral Vectors</u>
Total: \$627,154			<ul style="list-style-type: none"> \$292,865 2003 Schnell, Matthias J THOMAS JEFFERSON UNIVERSITY PHILADELPHIA, PA \$334,289 2002 Schnell, Matthias J THOMAS JEFFERSON UNIVERSITY PHILADELPHIA, PA 	
6	14	1Z01AI000938-01	COLLINS, PETER	<u>Paramyxoviruse Vaccine Vectors Against Pathogenic Virus</u>
7	14	2R01AI019737-19A1	PITHA-ROWE, PAULA	<u>Role of Novel Factor IRF-5 in Innate Immunity</u>
Total: \$1,317,318			<ul style="list-style-type: none"> \$286,125 2005 Pitharowe, Paula M JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$286,125 2004 Pitharowe, Paula M JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$286,125 2003 Pitharowe, Paula M JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$214,594 2002 Pitha-Rowe, Paula M JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$244,349 2000 PITHA-ROWE, PAULA P JOHNS HOPKINS UNIVERSITY BALTIMORE, MD 	

[Nipah virus](#)

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*,

Genus *Henipavirus*, Species *Nipah virus*, Virus: Nipah virus.

Publications:

1. **Chua, K. B., W. J. Bellini, P. A. Rota, B. H. Harcourt, A. Tamin, S. K. Lam, T. G. Ksiazek, P. E. Rollin, S. R. Zaki, W. Shieh, C. S. Goldsmith, D. J. Gubler, J. T. Roehrig, B. Eaton, A. R. Gould, J. Olson, H. Field, P. Daniels, A. E. Ling, C. J. Peters, L. J. Anderson, and B. W. Mahy.** 2000. Nipah virus: a recently emergent deadly paramyxovirus. *Science* **288**:1432-5.
This paper describes the preliminary molecular the electron-microscopic, serologic, and genetic characterization of Nipah virus. It concludes that the virus is related to Hendra virus.

2. **Harcourt, B. H., A. Tamin, T. G. Ksiazek, P. E. Rollin, L. J. Anderson, W. J. Bellini, and P. A. Rota.** 2000. Molecular characterization of Nipah virus, a newly emergent paramyxovirus. *Virology* **271**:334-49.
This paper describes the cloning, sequencing and characterization of individual genes of Nipah virus.
3. **Chua, K. B., S. K. Lam, K. J. Goh, P. S. Hooi, T. G. Ksiazek, A. Kamarulzaman, J. Olson, and C. T. Tan.** 2001. The presence of Nipah virus in respiratory secretions and urine of patients during an outbreak of Nipah virus encephalitis in Malaysia. *J Infect* **42**:40-3.
This paper describes the study of the excretion of Nipah virus in upper respiratory secretions and urine.
4. **Harcourt, B. H., A. Tamin, K. Halpin, T. G. Ksiazek, P. E. Rollin, W. J. Bellini, and P. A. Rota.** 2001. Molecular characterization of the polymerase gene and genomic termini of Nipah virus. *Virology* **287**:192-201.
This paper describes the cloning, sequencing, and characterization of the polymerase gene and the genomic termini of Nipah virus and compares the sequences with those of Hendra virus.
5. **Tamin, A., B. H. Harcourt, T. G. Ksiazek, P. E. Rollin, W. J. Bellini, and P. A. Rota.** 2002. Functional properties of the fusion and attachment glycoproteins of Nipah virus. *Virology* **296**:190-200.
This paper describes the characterization of the immunogenic and functional properties of the fusion and attachment proteins of Hendra and Nipah virus after vaccination of mice with recombinant vaccinia viruses.
6. **Goldsmith, C. S., T. Whistler, P. E. Rollin, T. G. Ksiazek, P. A. Rota, W. J. Bellini, P. Daszak, K. T. Wong, W. J. Shieh, and S. R. Zaki.** 2003. Elucidation of Nipah virus morphogenesis and replication using ultrastructural and molecular approaches. *Virus Res* **92**:89-98.
This paper describes the study of the morphologic features of Nipah virus in infected Vero E6 cells and human brain by electron microscopy and ultrastructural *in situ* hybridization.
7. **Halpin, K., B. Bankamp, B. H. Harcourt, W. J. Bellini, and P. A.** 2004. Nipah virus conforms to the rule of six in a minigenome replication assay. *J Gen Virol* **85**:701-7.
This paper describes the development of a minireplicon system for the virus, and describes some of its replication characteristics.
8. **Bossart, K. N., G. Cramer, A. S. Dimitrov, B. A. Mungall, Y. R. Feng, J. R. Patch, A. Choudhary, L. F. Wang, B. T. Eaton, and C. C. Broder.** 2005. Receptor binding, fusion inhibition, and induction of cross-reactive neutralizing antibodies by a soluble G glycoprotein of Hendra virus. *J Virol* **79**: 6690-6702.
This paper reports the properties of the surface protein of henipaviruses, and sheds light on the cell-entry mechanism.
9. **Bonaparte, M. I., A. S. Dimitrov, K. N. Bossart, G. Cramer, B. A. Mungall, K. A. Bishop, V. Choudry, D. S. Dimitrov, L. F. Wang, B. T. Eaton, C. C. Broder.** 2005. Ephrin-B2 ligand is a functional receptor for Hendra virus and Nipah virus. *Proc Natl Acad Med Sci U S A*. In press.
This paper reports the identity of the henipavirus cell-surface receptor.

NIH Grants:

1	100	1R03AI053160-01	BASLER, CHRISTOPHER	<u>Lassa and Nipah Virus Interferon-Antagonists</u>
Total: \$169,500			<ul style="list-style-type: none"> \$84,750 2003 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY \$84,750 2002 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	
2	100	1R21AI056179-01A2	PLEMPER, RICHARD	<u>Structure-Based Design of Nipah Virus Entry Inhibitors</u>
Total: \$229,500			<ul style="list-style-type: none"> \$229,500 2005 Plemper, Richard K EMORY UNIVERSITY ATLANTA, GA 	
3	100	1R21AI058038-01	ROTH, JAMES	<u>Nipah Virus Marker Vaccine and Companion Diagnostic Test</u>
Total: \$584,000			<ul style="list-style-type: none"> \$292,000 2005 Roth, James A IOWA STATE UNIVERSITY AMES, IA \$292,000 2004 Roth, James A IOWA STATE UNIVERSITY AMES, IA 	
4	98	1R01AI055733-01A1	HORVATH, CURT	<u>Host Defense Evasion by Fatal Emerging Paramyxoviruses</u>
Total: \$539,476			<ul style="list-style-type: none"> \$266,000 2005 Horvath, Curt M EVANSTON NORTHWESTERN HEALTHCARE EVANSTON, IL \$201,066 2004 Horvath, Curt M EVANSTON NORTHWESTERN HEALTHCARE EVANSTON, IL \$72,410 2004 Horvath, Curt M MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	
5	98	1R21AI059051-01	LEE, BENHUR	<u>A reverse genetic system for the study of Nipah Virus</u>
Total: \$609,028			<ul style="list-style-type: none"> \$305,485 2005 Lee, Benhur UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA \$303,543 2004 Lee, Benhur UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
6	82	1F31AI061824-01	LEVRONEY, ERNEST	<u>Nipah Virus: Developing a Mini-Genome System</u>
Total: \$28,513			<ul style="list-style-type: none"> \$28,513 2004 Levrony, Ernest L UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
7	66	1R21AI065597-01	BRODER, CHRISTOPHER	<u>Nipah Virus and Hendra Virus Subunit Vaccines</u>
8	66	1K08AI060629-01	TORRES-VELEZ,	<u>Pathogenesis of Nipah Virus</u>

			FERNANDO	<u>Infection in Guinea Pigs</u>
Total: \$187,345			<ul style="list-style-type: none"> \$94,897 2005 Torresvelez, Fernando J UNIVERSITY OF GEORGIA ATHENS, GA \$92,448 2004 Torresvelez, Fernando J UNIVERSITY OF GEORGIA ATHENS, GA 	
9	49	1R01AI060694-01A1	BAUM, LINDA	<u>Nipah Virus Pathobiology and Effects on Innate Immunity</u>
Total: \$385,417			<ul style="list-style-type: none"> \$385,417 2005 Baum, Linda G UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
10	49	1U01AI056423-01	BRODER, CHRISTOPHER	<u>Nipah virus and Hendra virus Peptide Therapeutics</u>
Total: \$1,560,796			<ul style="list-style-type: none"> \$625,455 2005 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$607,239 2004 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$328,102 2003 Broder, Christopher C HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD 	
11	49	1R21AI063052-01	DUTCH, REBECCA	<u>Proteolytic cleavage of the Hendra virus fusion protein</u>
Total: \$294,600			<ul style="list-style-type: none"> \$294,600 2005 Dutch, Rebecca E UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
12	33	1U54AI057168-010002	BRODER, CHRISTOPHER	<u>Hemorrhagic Fever</u>
Total: \$22,072,698			<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
13	16	1F31AI061829-01	CRAFT, WILLIE	<u>Expression and Cleavage of the Hendra Virus F Protein</u>
Total: \$24,361			<ul style="list-style-type: none"> \$24,361 2004 Craft, Willie W UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
Total: \$1,076,362			<ul style="list-style-type: none"> \$359,654 2004 Daszak, Peter WILDLIFE TRUST PALISADES, NY \$358,606 2003 Daszak, Peter WILDLIFE TRUST PALISADES, NY \$358,102 2002 Daszak, Peter WILDLIFE TRUST PALISADES, NY 	

Peronosclerospora philippinensis

Taxonomy: Empire: *Eukaryota*, Kingdom: *Chromista*, Phylum: *Bigyra*, Class *Oomycetes*, Order *Peronosporales*, Family *Peronosporaceae*.

Publications: None identified.

NIH Grants: None identified.

Peste-des-petits-ruminants virus

Taxonomy: Order: *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*,

Genus *Morbillivirus*, Species *Peste-des-petits-ruminants virus*. Virus: Peste-des-petits-ruminants virus.

Publications:

1. **Yilma, T., F. Aziz, S. Ahmad, L. Jones, R. Ngotho, H. Wamwayi, B. Beyene, M. Yesus, B. Egziabher, M. Diop, J. Sarr, and P. Verardi.** 2003. Inexpensive vaccines and rapid diagnostic kits tailor-made for the global eradication of rinderpest, and technology transfer to Africa and Asia. *Dev Biol* 114:99-111.
This paper reports the construction of a improved recombinant vaccinia virus vaccines expressing proteins of Rinderpest virus/Peste-des-petits-ruminants virus, and the following evaluation of the vaccine using live cattle.

NIH Grants: None identified.

Phakopsora pachyrhizi

Taxonomy: Empire: *Eukarya*, Kingdom: *Fungi*, Phylum: *Basidiomycota*, Class: *Urediniomycetes*,

Order: *Uredinales*, Family: *Melampsoraceae*.

Publications: None identified.

NIH Grants: None identified.

Plum pox virus

Taxonomy: Family *Potyviridae*, Genus *Potyvirus*, Species *Plum pox virus*. Virus: Plum pox virus.

Publications:

1. **Scorza, R., A. Callahan, L. Levy, V. Damsteegt, K. Webb,** and M. Ravelonandro. 2001. Post-transcriptional gene silencing in plum pox virus resistant transgenic European plum containing the plum pox potyvirus coat protein gene. *Transgenic Res* **10**:201-9. This paper reports the resistance and its mechanism of transgenic plants to PPV infection.

NIH Grants: None identified.

Ralstonia solanacearum (race 3 biovar 2)

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Betaproteobacteria*, Order *Burkholderiales*, Family *Ralstoniaceae*.

Publications: None reported

NIH Grants: None identified.

Rickettsia prowazekii

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Alphaproteobacteria*, Order *Rickettsiales*, Family *Rickettsiaceae*.

Publications:

1. **Ives, T. J., E. L. Marston, R. L. Regnery, J. D. Butts, and T. C. Majerus.** 2000. In vitro susceptibilities of *Rickettsia* and *Bartonella* spp. to 14-hydroxy-clarithromycin as determined by immunofluorescent antibody analysis of infected vero cell monolayers. *J Antimicrob Chemother* **45**:305-10. This paper reports the testing of *Rickettsia prowazekii* and *Rickettsia rickettsii* to different concentrations of an antibiotic.

2. **Moron, C. G., D. H. Bouyer, X. J. Yu, L. D. Foil, P. Crocquet-Valdes, and D. H. Walker.** 2000. Phylogenetic analysis of the rompB genes of *Rickettsia felis* and *Rickettsia prowazekii* European-human and North American flying-squirrel strains. *Am J Trop Med Hyg* **62**:598-603.
This paper reports a phylogenetic analysis of different strains of the bacterium.
3. **Van Kirk, L. S., S. F. Hayes, and R. A. Heinzen.** 2000. Ultrastructure of *Rickettsia rickettsii* actin tails and localization of cytoskeletal proteins. *Infect Immun* **68**:4706-13.
This paper reports the ultrastructure of a part of different rickettsiae.
4. **Walker, D. H., H. M. Feng, and V. L. Popov.** 2001. Rickettsial phospholipase A2 as a pathogenic mechanism in a model of cell injury by typhus and spotted fever group rickettsiae. *Am J Trop Med Hyg* **65**:936-42.
This paper identifies an enzyme of the bacterium as a key factor of pathogenesis.
5. **Gaywee, J., S. Radulovic, J. A. Higgins, and A. F. Azad.** 2002. Transcriptional analysis of *Rickettsia prowazekii* invasion gene homolog (invA) during host cell infection. *Infect Immun* **70**:6346-54.
This paper reports the analysis of the function of a gene of the bacterium that is important for infection.
6. **Gaywee, J., W. Xu, S. Radulovic, M. J. Bessman, and A. F. Azad.** 2002. The *Rickettsia prowazekii* invasion gene homolog (invA) encodes a Nudix hydrolase active on adenosine (5')-pentaphospho-(5')-adenosine. *Mol Cell Proteomics* **1**:179-85.
This paper reports the analysis of the function of a gene of the bacterium that is important for infection.
7. **Coker, C., M. Majid, and S. Radulovic.** 2003. Development of *Rickettsia prowazekii* DNA vaccine: cloning strategies. *Ann N Y Acad Sci* **990**:757-64.
This paper reports the development of a DNA vaccine to defend against infection with the bacterium.
8. **Gaywee, J., J. B. Sacci, Jr., S. Radulovic, M. S. Beier, and A. F. Azad.** 2003. Subcellular localization of rickettsial invasion protein, InvA. *Am J Trop Med Hyg* **68**:92-6.
This paper reports the location of a protein important for infection within the bacterial cell.
9. **Ge, H., Y. Y. Chuang, S. Zhao, J. J. Temenak, and W. M. Ching.** 2003. Genomic studies of *Rickettsia prowazekii* virulent and avirulent strains. *Ann N Y Acad Sci* **990**:671-7.
This paper reports genomic sequences of different strains of the bacterium.
10. **Tucker, A. M., H. H. Winkler, L. O. Driskell, and D. O. Wood.** 2003. S-adenosylmethionine transport in *Rickettsia prowazekii*. *J Bacteriol* **185**:3031-5.
This paper reports the transports of a metabolic intermediate in the bacterium.
11. **Chao, C. C., D. Chelius, T. Zhang, L. Daggale, and W. M. Ching.** 2004. Proteome analysis of Madrid E strain of *Rickettsia prowazekii*. *Proteomics* **4**:1280-92.
This paper reports the analysis of the proteome of the bacterium.
12. **Ge, H., Y. Y. Chuang, S. Zhao, M. Tong, M. H. Tsai, J. J. Temenak, A. L. Richards, and W. M. Ching.** 2004. Comparative genomics of *Rickettsia prowazekii* Madrid E and Breinl strains. *J Bacteriol* **186**:556-65.

This paper reports the comparison of the genomes of different strains of the bacterium.

NIH Grants:

1	100	1R01AI050557-01	RADULOVIC, SUZANA	<u>Molecularly Altered Rickettsiae and Vaccine Development</u>
Total: \$1,827,551			<ul style="list-style-type: none"> • \$371,250 2005 Radulovic, Suzana UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$371,250 2004 Radulovic, Suzana UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$371,250 2003 Radulovic, Suzana UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$371,250 2002 Radulovic, Suzana UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$342,551 2001 Azad, Abdu F BALTIMORE RESEARCH AND EDUCATION FDN BALTIMORE, MD 	
2	100	2R01AI015035-28	WINKLER, HERBERT	<u>Permeability of the Epidemic Typhus Rickettsia</u>
Total: \$3,024,563 *			<ul style="list-style-type: none"> • \$549,583 2005 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$504,775 2004 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$491,275 2003 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$478,167 2002 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$544,014 2001 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$456,749 2000 WINKLER, HERBERT H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL 	
3	100	1R01AI055913-01	WOOD, DAVID	<u>Global Analysis of the Rickettsia prowazekii Proteome</u>
Total: \$906,865			<ul style="list-style-type: none"> • \$365,000 2005 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$362,240 2004 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$179,625 2003 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL 	
4	100	2R37AI020384-17	WOOD, DAVID	<u>GENETIC ANALYSIS OF RICKETTSIA PROWAZEKII</u>
Total: \$1,905,064			<ul style="list-style-type: none"> • \$292,455 2005 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$325,125 2004 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL 	

			<ul style="list-style-type: none"> • \$325,125 2003 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$323,386 2002 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$321,035 2001 Wood, David O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$317,938 2000 WOOD, DAVID O UNIVERSITY OF SOUTH ALABAMA MOBILE, AL
5	93	2R01AI015035-23	WINKLER, HERBERT <u>PERMEABILITY OF THE EPIDEMIC TYPHUS RICKETTSIA</u>
		Total: \$3,024,563 *	<ul style="list-style-type: none"> • \$549,583 2005 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$504,775 2004 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$491,275 2003 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$478,167 2002 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$544,014 2001 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$456,749 2000 WINKLER, HERBERT H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL
6	93	1R01AI045533-01A2	WINKLER, HERBERT <u>Genomic Level Expression Patterns in Typhus Rickettsia</u>
		Total: \$1,414,410	<ul style="list-style-type: none"> • \$288,089 2005 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$285,384 2004 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$282,782 2003 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$280,280 2002 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL • \$277,875 2001 Winkler, Herbert H UNIVERSITY OF SOUTH ALABAMA MOBILE, AL
7	16	1R01AI059118-01A2	AZAD, ABDU <u>Generation of Genetically Attenuated Rickettsiae</u>
		Total: \$400,412	<ul style="list-style-type: none"> • \$400,412 2005 Azad, Abdu F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD
8	16	1U54AI057156-010007	WALKER, DAVID <u>New Diagnostic Methods for Acute Rickettsial Infections</u>
		Total: \$27,834,107	<ul style="list-style-type: none"> • \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL

Rickettsia rickettsii

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Alphaproteobacteria*, Order

Rickettsiales, Family *Rickettsiaceae*.

Publications:

1. **Ives, T. J., E. L. Marston, R. L. Regnery, J. D. Butts, and T. C. Majerus.** 2000. In vitro susceptibilities of *Rickettsia* and *Bartonella* spp. to 14-hydroxy-clarithromycin as determined by immunofluorescent antibody analysis of infected vero cell monolayers. *J Antimicrob Chemother* **45**:305-10.
This paper reports the testing of *Rickettsia prowazekii* and *Rickettsia rickettsii* to different concentrations of an antibiotic.
2. **Van Kirk, L. S., S. F. Hayes, and R. A. Heinzen.** 2000. Ultrastructure of *Rickettsia rickettsii* actin tails and localization of cytoskeletal proteins. *Infect Immun* **68**:4706-13.
This paper reports the ultrastructure of a part of different rickettsiae.
3. **Shi, R. J., P. J. Simpson-Haidaris, V. J. Marder, D. J. Silverman, and L. A. Sporn.** 2000. Post-transcriptional regulation of endothelial cell plasminogen activator inhibitor-1 expression during *R. rickettsii* infection. *Microb Pathog* **28**:127-33.
This paper reports the regulation of a blood coagulation-control protein upon infection with the bacterium.
4. **Eremeeva, M. E., G. A. Dasch, and D. J. Silverman.** 2001. Quantitative analyses of variations in the injury of endothelial cells elicited by 11 isolates of *Rickettsia rickettsii*. *Clin Diagn Lab Immunol* **8**:788-96.
This paper reports the effect of different strains of the bacterium on endothelial cells.
5. **Temenak, J. J., B. E. Anderson, and G. A. McDonald.** 2001. Molecular cloning, sequence and characterization of *cjsT*, a putative protease from *Rickettsia rickettsii*. *Microb Pathog* **30**:221-8.
This paper reports the cloning of a protease of the bacterium.
6. **Rydkina, E., A. Sahni, D. J. Silverman, and S. K. Sahni.** 2002. *Rickettsia rickettsii* infection of cultured human endothelial cells induces heme oxygenase 1 expression. *Infect Immun* **70**:4045-52.
This paper reports the induction of a host-cell gene by the bacterium.
7. **Eremeeva, M. E., G. A. Dasch, and D. J. Silverman.** 2003. Evaluation of a PCR assay for quantitation of *Rickettsia rickettsii* and closely related spotted fever group rickettsiae. *J Clin Microbiol* **41**:5466-72.
This paper reports the evaluation of a PCR-based diagnostic assay for the detection of the bacterium.

8. **Eremeeva, M. E., R. M. Klemt, L. A. Santucci-Domotor, D. J. Silverman, and G. A. Dasch.** 2003. Genetic analysis of isolates of *Rickettsia rickettsii* that differ in virulence. *Ann N Y Acad Sci* **990**:717-22.
This paper reports the sequencing of parts of the genomes of different strains of the bacterium.
9. **Eremeeva, M. E., Z. Liang, C. Paddock, S. Zaki, J. G. Vandenberg, G. A. Dasch, and D. J. Silverman.** 2003. *Rickettsia rickettsii* infection in the pine vole, *Microtus pinetorum*: kinetics of infection and quantitation of antioxidant enzyme gene expression by RT-PCR. *Ann N Y Acad Sci* **990**:468-73.
This paper characterizes the infection of the pine vole with the bacterium.
10. **Harlander, R. S., M. Way, Q. Ren, D. Howe, S. S. Grieshaber, and R. A. Heinzen.** 2003. Effects of ectopically expressed neuronal Wiskott-Aldrich syndrome protein domains on *Rickettsia rickettsii* actin-based motility. *Infect Immun* **71**:1551-6.
This paper reports the effect of a protein on the intracellular motility of the bacterium.
11. **Heinzen, R. A.** 2003. *Rickettsial* actin-based motility: behavior and involvement of cytoskeletal regulators. *Ann N Y Acad Sci* **990**:535-47.
This paper sheds light on the mechanism of intracellular motility of the bacterium.
12. **Joshi, S. G., C. W. Francis, D. J. Silverman, and S. K. Sahni.** 2003. Nuclear factor kappa B protects against host cell apoptosis during *Rickettsia rickettsii* infection by inhibiting activation of apical and effector caspases and maintaining mitochondrial integrity. *Infect Immun* **71**:4127-36.
This paper reports the identification of a protein that protects against cell death induced by the bacterium.
13. **Lee, K. N., I. Padmalayam, B. Baumstark, S. L. Baker, and R. F. Massung.** 2003. Characterization of the *ftsZ* gene from *Ehrlichia chaffeensis*, *Anaplasma phagocytophilum*, and *Rickettsia rickettsii*, and use as a differential PCR target. *DNA Cell Biol* **22**:179-86.
This paper reports the characterization of a gene of the bacterium.
14. **Rahman, M. S., J. A. Simser, K. R. Macaluso, and A. F. Azad.** 2003. Molecular and functional analysis of the *lepB* gene, encoding a type I signal peptidase from *Rickettsia rickettsii* and *Rickettsia typhi*. *J Bacteriol* **185**:4578-84.
This protein reports the analysis of a gene of the bacterium.
15. **Sahni, S. K., E. Rydkina, S. G. Joshi, L. A. Sporn, and D. J. Silverman.** 2003. Interactions of *Rickettsia rickettsii* with endothelial nuclear factor-kappaB in a "cell-free" system. *Ann N Y Acad Sci* **990**:635-41.
This paper reports the interaction of the bacterium with a cellular protein.
16. **Baldridge, G. D., N. Y. Burkhardt, J. A. Simser, T. J. Kurtti, and U. G. Munderloh.** 2004. Sequence and expression analysis of the *ompA* gene of *Rickettsia peacockii*, an endosymbiont of the Rocky Mountain wood tick, *Dermacentor andersoni*. *Appl Environ Microbiol* **70**:6628-36.
This paper reports the sequence and expression of a gene of an agent related to the bacterium and of the bacterium as a control.

17. **Jeng, R. L., E. D. Goley, J. A. D'Alessio, O. Y. Chaga, T. M. Svitkina, G. G. Borisy, R. A. Heinzen, and M. D. Welch.** 2004. A Rickettsia WASP-like protein activates the Arp2/3 complex and mediates actin-based motility. *Cell Microbiol* **6**:761-9.
This paper reports the effect of a protein of the bacterium on its intracellular motility.
18. **Joshi, S. G., C. W. Francis, D. J. Silverman, and S. K. Sahni.** 2004. NF-kappaB activation suppresses host cell apoptosis during Rickettsia rickettsii infection via regulatory effects on intracellular localization or levels of apoptogenic and anti-apoptotic proteins. *FEMS Microbiol Lett* **234**:333-41.
This paper reports that a host-cell protein is able to suppress cell death even after infection with the bacterium
19. **Labruna, M. B., T. Whitworth, M. C. Horta, D. H. Bouyer, J. W. McBride, A. Pinter, V. Popov, S. M. Gennari, and D. H. Walker.** 2004. Rickettsia species infecting Amblyomma cooperi ticks from an area in the state of Sao Paulo, Brazil, where Brazilian spotted fever is endemic. *J Clin Microbiol* **42**:90-8.
This paper reports the isolation of the bacterium from a tick species.
20. **Clifton, D. R., E. Rydkina, R. S. Freeman, and S. K. Sahni.** 2005. NF-kappaB activation during Rickettsia rickettsii infection of endothelial cells involves the activation of catalytic IkappaB kinases IKKalpha and IKKbeta and phosphorylation-proteolysis of the inhibitor protein IkappaBalpha. *Infect Immun* **73**:155-65.
This paper reports specifics of the activation of a host-cell protein upon infection with bacterium.
21. **Rahman, M. S., J. A. Simser, K. R. Macaluso, and A. F. Azad.** 2005. Functional analysis of secA homologues from rickettsiae. *Microbiology* **151**:589-96.
This bacterium reports the analysis of a gene of the bacterium.

NIH Grants:

1	100	1P20RR015553-010005	HEINZEN, ROBERT	<u>NITRIC OXIDE AND OBLIGATE PARASITISM</u>
Total: \$6,566,635			<ul style="list-style-type: none"> \$1,067,446 2004 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY \$1,198,780 2003 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY \$1,342,457 2002 Rose, James D UNIVERSITY OF WYOMING LARAMIE, WY \$1,396,484 2001 Bohle, David S UNIVERSITY OF WYOMING LARAMIE, WY \$1,561,468 2000 BOHLE, DAVID S UNIVERSITY OF WYOMING LARAMIE, WY 	
2	100	1U01AI050942-01	MADAN, ANUP	<u>Sequence of Rickettsia Rickettsii Genome</u>
Total: \$463,391			<ul style="list-style-type: none"> \$463,391 2001 Madan, Anup INSTITUTE FOR SYSTEMS BIOLOGY 	

			SEATTLE, WA	
3	62	2R21AI040689-06	SAHNI, SANJEEV	<u>Rickettsia-Induced Transcriptional Activation</u>
Total: \$346,900			<ul style="list-style-type: none"> \$346,900 2002 Sahni, Sanjeev K UNIVERSITY OF ROCHESTER ROCHESTER, NY 	
4	47	2R01AI040689-06A1	SAHNI, SANJEEV	<u>Rickettsia-induced transcriptional activation</u>
Total: \$1,331,778			<ul style="list-style-type: none"> \$332,525 2005 Sahni, Sanjeev K UNIVERSITY OF ROCHESTER ROCHESTER, NY \$337,796 2004 Sahni, Sanjeev K UNIVERSITY OF ROCHESTER ROCHESTER, NY \$147,656 2003 Sahni, Sanjeev K UNIVERSITY OF ROCHESTER ROCHESTER, NY \$260,469 2001 Sahni, Sanjeev K UNIVERSITY OF ROCHESTER ROCHESTER, NY \$253,332 2000 SAHNI, SANJEEV UNIVERSITY OF ROCHESTER ROCHESTER, NY 	
5	31	2R01AI043006-06A1	AZAD, ABDU	<u>INTERSPECIFIC COMPETITION BETWEEN RICKETTSIAE IN TICKS</u>
Total: \$1,117,272			<ul style="list-style-type: none"> \$259,875 2005 Azad, Abdu F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$284,875 2004 Azad, Abdu F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$196,508 2002 Azad, Abdu F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$190,784 2001 Azad, Abdu F BALTIMORE RESEARCH AND EDUCATION FDN BALTIMORE, MD \$185,230 2000 AZAD, ABDU F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
6	31	1R01AI059118-01A2	AZAD, ABDU	<u>Generation of Genetically Attenuated Rickettsiae</u>
Total: \$400,412			<ul style="list-style-type: none"> \$400,412 2005 Azad, Abdu F UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
7	31	1F32AI051857-01	MACALUSO, KEVIN	<u>Tick Susceptibility and Response to Rickettsiae</u>
Total: \$107,399			<ul style="list-style-type: none"> \$22,659 2004 Macaluso, Kevin R UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$46,420 2003 Macaluso, Kevin R UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$38,320 2002 Macaluso, Kevin R UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
8	31	1K22AI060821-01	MACALUSO,	<u>Molecular dynamics of rickettsial</u>

			KEVIN	<u>infection in ticks</u>
Total: \$161,994			<ul style="list-style-type: none"> \$161,994 2005 Macaluso, Kevin R LOUISIANA STATE UNIV A&M COL BATON ROUGE BATON ROUGE, LA 	
9	16	1U54AI057156-010007	WALKER, DAVID	<u>New Diagnostic Methods for Acute Rickettsial Infections</u>
Total: \$27,834,107			<ul style="list-style-type: none"> \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	

Rift Valley fever virus

Taxonomy: Family *Bunyaviridae*, Genus *Phlebovirus*, Species *Rift Valley fever virus*, Virus: Rift Valley fever virus, ZH548, MM12, Belterra virus, Icoaraci virus

Publications:

- Dohm, D. J., E. D. Rowton, P. G. Lawyer, M. O'Guinn, and M. J. Turell.** 2000. Laboratory transmission of Rift Valley fever virus by *Phlebotomus duboscqi*, *Phlebotomus papatasi*, *Phlebotomus sergenti*, and *Sergentomyia schwetzi* (Diptera: Psychodidae). *J Med Entomol* **37**:435-8.
This paper reports the ability of certain mosquitoes to transmit the virus.
- Gora, D., T. Yaya, T. Jocelyn, F. Didier, D. Maoulouth, S. Amadou, T. D. Ruel, and J. P. Gonzalez.** 2000. The potential role of rodents in the enzootic cycle of Rift Valley fever virus in Senegal. *Microbes Infect* **2**:343-6.
This paper describes the screening of rodents for antibodies to RVFV. Two rodent species with high antibody prevalence were identified. Artificial infection of these species with RVFV demonstrated their ability to replicate the virus.
- Gerrard, S. R., P. E. Rollin, and S. T. Nichol.** 2002. Bidirectional infection and release of Rift Valley fever virus in polarized epithelial cells. *Virology* **301**:226-35.
This paper describes the characterization of RVFV entry and egress in polarized epithelial cells.
- Miller, B. R., M. S. Godsey, M. B. Crabtree, H. M. Savage, Y. Al-Mazrao, M. H. Al-Jeffri, A. M. Abdoon, S. M. Al-Seghayer, A. M. Al-Shahrani, and T. G. Ksiazek.** 2002. Isolation and genetic characterization of Rift Valley fever virus from *Aedes vexans arabiensis*, Kingdom of Saudi Arabia. *Emerg Infect Dis* **8**:1492-4.
This paper describes the isolation and genetic characterization of an Arabic RVFV isolate from a mosquito.

5. **Shoemaker, T., C. Boulianne, M. J. Vincent, L. Pezzanite, M. M. Al-Qahtani, Y. Al-Mazrou, A. S. Khan, P. E. Rollin, R. Swanepoel, T. G. Ksiazek, and S. T. Nichol.** 2002. Genetic analysis of viruses associated with emergence of Rift Valley fever in Saudi Arabia and Yemen, 2000-01. *Emerg Infect Dis* **8**:1415-20.
This paper describes the genetic characterization of an Arabic RVFV isolate.
6. **Morrill, J. C., and C. J. Peters.** 2003. Pathogenicity and neurovirulence of a mutagen-attenuated Rift Valley fever vaccine in rhesus monkeys. *Vaccine* **21**:2994-3002.
This paper describes the evaluation of an attenuated RVFV strain as a potential vaccine candidate.
7. **Paweska, J. T., F. J. Burt, F. Anthony, S. J. Smith, A. A. Grobbelaar, J. E. Croft, T. G. Ksiazek, and R. Swanepoel.** 2003. IgG-sandwich and IgM-capture enzyme-linked immunosorbent assay for the detection of antibody to Rift Valley fever virus in domestic ruminants. *J Virol Methods* **113**:103-12.
This paper describes the development and evaluation of sandwich and capture ELISAs for the detection of IgG and IgM antibodies to RVFV in bovine, caprine and ovine sera.
8. **Aitichou, M., S. S. Saleh, A. K. McElroy, C. Schmaljohn, and M. S. Ibrahim.** 2005. Identification of Dobrava, Hantaan, Seoul, and Puumala viruses by one-step real-time RT-PCR. *J Virol Methods* **124**:21-6.
This paper reports th development of a diagnostic system for hantaviruses and the use of the virus as a control.
9. **Ikegami, T., C. J. Peters, and S. Makino.** 2005. Rift valley fever virus nonstructural protein NSs promotes viral RNA replication and transcription in a minigenome system. *J Virol* **79**:5606-15.
This paper reports the identification of a protein of the virus that is important for both replication and transcription.

NIH Grants:

1	56	1UC1AI062636-01	PETERS, CLARENCE	<u>Rift Valley Fever Virus MP-12 Vaccine Completion</u>
Total: \$5,653,143			<ul style="list-style-type: none"> • \$5,653,143 2004 Peters, Clarence J UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
2	49	1U01AI056550-01	COMPANS, RICHARD	<u>Rift Valley Fever Virus-like Particle Vaccine</u>
Total: \$916,522			<ul style="list-style-type: none"> • \$372,974 2005 Compans, Richard W EMORY UNIVERSITY ATLANTA, GA • \$363,996 2004 Compans, Richard W EMORY UNIVERSITY ATLANTA, GA • \$179,552 2003 Compans, Richard W EMORY UNIVERSITY ATLANTA, GA 	
3	33	1U01AI066327-01	FLICK, RAMON	<u>Rationally designed Rift Valley</u>

				<u>Fever Virus Vaccine</u>
4	33	1R01AI053135-01	FROLOV, ILYA	<u>A Sindbis virus-based Vaccine Against RVFV Infection</u>
Total: \$906,000			<ul style="list-style-type: none"> • \$302,000 2005 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$302,000 2004 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$302,000 2003 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
5	33	1R41AI058353-01	OLIVO, PAUL	<u>Molecular tools for Bunyavirus antiviral screening</u>
Total: \$741,038			<ul style="list-style-type: none"> • \$413,699 2005 Olivo, Paul D ORION GENOMICS, LLC ST. LOUIS, MO • \$327,339 2004 Olivo, Paul D JACOBS FACILITIES, INC. ST LOUIS, MO 	
6	33	1R21AI053551-01	WATOWICH, STANLEY	<u>Novel Countermeasures to Hemorrhagic Fever Viruses</u>
Total: \$447,000			<ul style="list-style-type: none"> • \$223,500 2003 Watowich, Stanley J UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$223,500 2002 Watowich, Stanley J UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
7	16	1UC1AI062579-01	BARANY, FRANCIS	<u>Multiplexed Detection of Bioterror Agents</u>
Total: \$4,448,762			<ul style="list-style-type: none"> • \$4,448,762 2004 Barany, Francis WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
8	16	1U54AI057168-010002	BRODER, CHRISTOPHER	<u>Hemorrhagic Fever</u>
Total: \$22,072,698			<ul style="list-style-type: none"> • \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
9	16	1R43AI056525-01	COLLETT, MARC	<u>Antiviral Drugs Against Hemorrhagic Fever Viruses</u>
Total: \$909,502			<ul style="list-style-type: none"> • \$909,502 2003 Collett, Marc S VIROPHARMA, INC. EXTON, PA 	
10	16	1U01AI054374-01	HENRICKSON, KELLY	<u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u>
Total: \$1,346,667			<ul style="list-style-type: none"> • \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI • \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF 	

	<p>WISCONSIN MILWAUKEE, WI</p> <ul style="list-style-type: none"> • \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI
--	--

Rinderpest virus

Taxonomy: Order: *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*,

Genus *Morbillivirus*, Species *Rinderpest virus*, Virus: Rinderpest virus.

Publications:

1. **Verardi, P. H., Fatema H. Aziz, Shabbir Ahmad, and Leslie A. Jones, Berhanu Beyene, Rosemary N. Ngotho, Henry M. Wamwayi, Mebratu G. Yesus, Berhe G. Egziabher, and Tilahun D. Yilma.** 2002. Long-Term Sterilizing Immunity to Rinderpest in Cattle Vaccinated with a Recombinant Vaccinia Virus Expressing High Levels of the Fusion and Hemagglutinin Glycoproteins. *J Virol* 76:484-91.
This paper reports the construction of a recombinant vaccinia virus vaccine expressing proteins of Rinderpest virus, and the following evaluation of the vaccine using live cattle.
2. **Pahar, B., B. Sharma B, and A. C. Goel.** 2002. Effect of immunization with plasmid DNA encoding for rinderpest virus matrix protein on systemic rinderpest virus infection in rabbits. *Vet Res Commun* 26:227-37.
This paper reports the evaluation of a DNA vaccine candidate against Rinderpest virus in rabbits.
3. **Yilma, T., F. Aziz, S. Ahmad, L. Jones, R. Ngotho, H. Wamwayi, B. Beyene, M. Yesus, B. Egziabher, M. Diop, J. Sarr, and P. Verardi.** 2003. Inexpensive vaccines and rapid diagnostic kits tailor-made for the global eradication of rinderpest, and technology transfer to Africa and Asia. *Dev Biol* 114:99-111.
This paper reports the construction of a improved recombinant vaccinia virus vaccines expressing proteins of Rinderpest virus/Peste-des-petits-ruminants virus, and the following evaluation of the vaccine using live cattle.

NIH Grants: None identified.

Sabiá virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species *Sabiá virus*, Virus: Sabiá virus,

SPH114202 virus

Publications:

1. **Spiropoulou, C. F., Stefan Kunz, Pierre E. Rollin, Kevin P. Campbell, and Michael B. A. Oldstone.** 2002. New World Arenavirus Clade C, but Not Clade A and B Viruses, Utilizes α -Dystroglycan as Its Major Receptor. *J Virol* **76**:5140-5146.
This paper comes to the conclusion that Flexal, Guanarító, Machupo, and Sabiá viruses do not use the Lassa fever virus receptor dystroglycan.
2. **Archer, A. M., and Rebeca Rico-Hesse.** 2002. High Genetic Divergence and Recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarító, Junín, Lassa fever, Machupo, and Sabiá viruses, and their evolutionary and functional relationships.

NIH Grants: None identified.

Sclerophthora rayssiae (var. *zeae*)

Taxonomy: Empire: *Eukaryota*, Kingdom: *Chromista*, Phylum: *Bigyra*, Class *Oomycetes*, Order *Peronosporales*, Family *Peronosporaceae*.

Publications: None identified.

NIH grants: None identified.

Sheeppox virus

Taxonomy: Family *Poxviridae*, Subfamily *Chordopoxvirinae*, Genus *Capripoxvirus*, Species *Sheeppox virus*, Virus: Sheeppox virus.

Publications:

1. **Tulman, E. R., C. L. Afonso, Z. Lu, L. Zsak, J.-H. Sur, N. T. Sandybaev, U. Z. Kerembekova, V. L. Zaitsev, G. F. Kutish, and D. L. Rock.** 2002. The Genomes of Sheeppox and Goatpox Viruses. *J Virol* **76**:6054-61.
This paper describes the sequencing and characterization, and comparison of Sheeppox and Goatpox virus.

NIH grants: None identified.

Synchytrium endobioticum

Taxonomy: Empire: *Eukaryota*, Kingdom: *Fungi*, Phylum: *Archemycota*, Class:

Chytridiomycetes, Order: *Chytridiales*, Family: *Synchytriaceae*.

Publications: None identified.

NIH grants: None identified.

Venezuelan equine encephalitis virus

Taxonomy: Family *Togaviridae*, Genus *Alphavirus*, Species *Venezuelan equine encephalitis*

virus, Virus: Venezuelan equine encephalitis virus.

Publications:

1. **Aronson, J. F., F. B. Grieder, N. L. Davis, P. C. Charles, T. Knott, K. Brown, and R. E. Johnston.** 2000. A single-site mutant and revertants arising in vivo define early steps in the pathogenesis of Venezuelan equine encephalitis virus. *Virology* **270**:111-23.
This paper reports the pathological comparison of a virulent and an avirulent strain of the virus in order to determine when and where during infection the avirulent strain is blocked.
2. **Bernard, K. A., W. B. Klimstra, and R. E. Johnston.** 2000. Mutations in the E2 glycoprotein of Venezuelan equine encephalitis virus confer heparan sulfate interaction, low morbidity, and rapid clearance from blood of mice. *Virology* **276**:93-103.
This paper reports the identity of amino acid residues in the envelope protein of the virus that are important for binding to heparin sulfate and low virulence.
3. **Hart, M. K., K. Caswell-Stephan, R. Bakken, R. Tammariello, W. Pratt, N. Davis, R. E. Johnston, J. Smith, and K. Steele.** 2000. Improved mucosal protection against Venezuelan equine encephalitis virus is induced by the molecularly defined, live-attenuated V3526 vaccine candidate. *Vaccine* **18**:3067-75.
This paper evaluated a novel vaccine candidate.
4. **Linssen, B., R. M. Kinney, P. Aguilar, K. L. Russell, D. M. Watts, O. R. Kaaden, and M. Pfeffer.** 2000. Development of reverse transcription-PCR assays specific for detection of equine encephalitis viruses. *J Clin Microbiol* **38**:1527-35.
This paper reports the development of a novel PCR-based diagnostic assay for the detection of the virus.

5. **MacDonald, G. H., and R. E. Johnston.** 2000. Role of dendritic cell targeting in Venezuelan equine encephalitis virus pathogenesis. *J Virol* **74**:914-22.
This paper identified dendritic cells as early targets of the virus.
6. **Powers, A. M., A. C. Brault, R. M. Kinney, and S. C. Weaver.** 2000. The use of chimeric Venezuelan equine encephalitis viruses as an approach for the molecular identification of natural virulence determinants. *J Virol* **74**:4258-63.
This paper reports the employment of chimeric Venezuelan equine encephalitis viruses for the identification of areas of its genome that are important for virulence.
7. **Schoneboom, B. A., K. M. Catlin, A. M. Marty, and F. B. Grieder.** 2000. Inflammation is a component of neurodegeneration in response to Venezuelan equine encephalitis virus infection in mice. *J Neuroimmunol* **109**:132-46.
This paper reports the neuropathology of mice infected with the virus.
8. **Schoneboom, B. A., J. S. Lee, and F. B. Grieder.** 2000. Early expression of IFN-alpha/beta and iNOS in the brains of Venezuelan equine encephalitis virus-infected mice. *J Interferon Cytokine Res* **20**:205-15.
This paper reports the detection of interferons and certain enzymes in the brains of mice infected with the virus.
9. **Turell, M. J., J. W. Jones, M. R. Sardelis, D. J. Dohm, R. E. Coleman, D. M. Watts, R. Fernandez, C. Calampa, and T. A. Klein.** 2000. Vector competence of Peruvian mosquitoes (Diptera: Culicidae) for epizootic and enzootic strains of Venezuelan equine encephalomyelitis virus. *J Med Entomol* **37**:835-9.
This paper reports the evaluation of different mosquitoes for their competence to replicate different strains of the virus.
10. **Brault, A. C., A. M. Powers, G. Medina, E. Wang, W. Kang, R. A. Salas, J. De Siger, and S. C. Weaver.** 2001. Potential sources of the 1995 Venezuelan equine encephalitis subtype IC epidemic. *J Virol* **75**:5823-32.
This paper attempts to pinpoint the origin of a strain of the virus.
11. **Charles, P. C., J. Trgovcich, N. L. Davis, and R. E. Johnston.** 2001. Immunopathogenesis and immune modulation of Venezuelan equine encephalitis virus-induced disease in the mouse. *Virology* **284**:190-202.
This paper reports the immune response of mice infected with the virus.
12. **Hart, M. K., C. Lind, R. Bakken, M. Robertson, R. Tammariello, and G. V. Ludwig.** 2001. Onset and duration of protective immunity to IA/IB and IE strains of Venezuelan equine encephalitis virus in vaccinated mice. *Vaccine* **20**:616-22.
This paper evaluates a vaccine candidate in mice.
13. **Ludwig, G. V., M. J. Turell, P. Vogel, J. P. Kondig, W. K. Kell, J. F. Smith, and W. D. Pratt.** 2001. Comparative neurovirulence of attenuated and non-attenuated strains of Venezuelan equine encephalitis virus in mice. *Am J Trop Med Hyg* **64**:49-55.
This paper compares the neuropathology of mice infected with different strains of the virus.
14. **Moncayo, A. C., G. M. Medina, Z. Kalvatchev, A. C. Brault, R. Barrera, J. Boshell, C. Ferro, J. E. Freier, J. C. Navarro, R. Salas, J. De Siger, C. Vasquez, R. Walder, and S. C. Weaver.** 2001. Genetic diversity and relationships among Venezuelan equine

- encephalitis virus field isolates from Colombia and Venezuela. *Am J Trop Med Hyg* **65**:738-46.
This paper reports the phylogenetic relationships of different strains of the virus.
15. **Paredes, A., K. Alwell-Warda, S. C. Weaver, W. Chiu, and S. J. Watowich.** 2001. Venezuelan equine encephalomyelitis virus structure and its divergence from old world alphaviruses. *J Virol* **75**:9532-7.
This paper reports the comparison of the structure of the virus with that of other alphaviruses.
 16. **Powers, A. M., A. C. Brault, Y. Shirako, E. G. Strauss, W. Kang, J. H. Strauss, and S. C. Weaver.** 2001. Evolutionary relationships and systematics of the alphaviruses. *J Virol* **75**:10118-31.
This paper reports the phylogenetic relationships of different strains of the virus.
 17. **Wang, E., R. A. Bowen, G. Medina, A. M. Powers, W. Kang, L. M. Chandler, R. E. Shope, and S. C. Weaver.** 2001. Virulence and viremia characteristics of 1992 epizootic subtype IC Venezuelan equine encephalitis viruses and closely related enzootic subtype ID strains. *Am J Trop Med Hyg* **65**:64-9.
This paper reports the characterization of a strain of the virus.
 18. **White, L. J., J. G. Wang, N. L. Davis, and R. E. Johnston.** 2001. Role of alpha/beta interferon in Venezuelan equine encephalitis virus pathogenesis: effect of an attenuating mutation in the 5' untranslated region. *J Virol* **75**:3706-18.
This paper reports the interferon response of mice infected with wild-type and attenuated strains of the virus.
 19. **Brault, A. C., A. M. Powers, E. C. Holmes, C. H. Woelk, and S. C. Weaver.** 2002. Positively charged amino acid substitutions in the e2 envelope glycoprotein are associated with the emergence of venezuelan equine encephalitis virus. *J Virol* **76**:1718-30.
This paper reports the comparison of genomic sequences of different strains of the virus.
 20. **Brault, A. C., A. M. Powers, and S. C. Weaver.** 2002. Vector infection determinants of Venezuelan equine encephalitis virus reside within the E2 envelope glycoprotein. *J Virol* **76**:6387-92.
This paper reports the comparison of genomic sequences of different strains of the virus.
 21. **O'Guinn, M. L., and M. J. Turell.** 2002. Effect of triethylamine on the recovery of selected South American alphaviruses, flaviviruses, and bunyaviruses from mosquito (Diptera: Culicidae) pools. *J Med Entomol* **39**:806-8.
This paper reports the effect of a chemical on the isolation of the virus from mosquitoes.
 22. **Fernandez, Z., A. C. Moncayo, A. S. Carrara, O. P. Forattini, and S. C. Weaver.** 2003. Vector competence of rural and urban strains of *Aedes (Stegomyia) albopictus* (Diptera: Culicidae) from Sao Paulo State, Brazil for IC, ID, and IF subtypes of Venezuelan equine encephalitis virus. *J Med Entomol* **40**:522-7.
This paper reports the competence of different mosquitoes to replicate different strains of the virus.
 23. **Gonzalez-Salazar, D., J. G. Estrada-Franco, A. S. Carrara, J. F. Aronson, and S. C. Weaver.** 2003. Equine amplification and virulence of subtype IE Venezuelan equine encephalitis viruses isolated during the 1993 and 1996 Mexican epizootics. *Emerg Infect Dis* **9**:161-8.

- This paper reports the inoculation of horses with a strain of the virus to determine the horses' ability to amplify it.
24. **Paessler, S., R. Z. Fayzulín, M. Anishchenko, I. P. Greene, S. C. Weaver, and I. Frolov.** 2003. Recombinant sindbis/Venezuelan equine encephalitis virus is highly attenuated and immunogenic. *J Virol* **77**:9278-86.
This paper reports the development of a vaccine candidate.
25. **Paredes, A., K. Alwell-Warda, S. C. Weaver, W. Chiu, and S. J. Watowich.** 2003. Structure of isolated nucleocapsids from venezuelan equine encephalitis virus and implications for assembly and disassembly of enveloped virus. *J Virol* **77**:659-64.
This paper reports the structure of the nucleocapsid of the virus.
26. **Perri, S., C. E. Greer, K. Thudium, B. Doe, H. Legg, H. Liu, R. E. Romero, Z. Tang, Q. Bin, T. W. Dubensky, Jr., M. Vajdy, G. R. Otten, and J. M. Polo.** 2003. An alphavirus replicon particle chimera derived from venezuelan equine encephalitis and sindbis viruses is a potent gene-based vaccine delivery vector. *J Virol* **77**:10394-403.
This paper reports a vaccine candidate.
27. **Pratt, W. D., N. L. Davis, R. E. Johnston, and J. F. Smith.** 2003. Genetically engineered, live attenuated vaccines for Venezuelan equine encephalitis: testing in animal models. *Vaccine* **21**:3854-62.
This paper reports the evaluation of a vaccine candidate.
28. **Riemenschneider, J., A. Garrison, J. Geisbert, P. Jahrling, M. Hevey, D. Negley, A. Schmaljohn, J. Lee, M. K. Hart, L. Vanderzanden, D. Custer, M. Bray, A. Ruff, B. Ivins, A. Bassett, C. Rossi, and C. Schmaljohn.** 2003. Comparison of individual and combination DNA vaccines for B. anthracis, Ebola virus, Marburg virus and Venezuelan equine encephalitis virus. *Vaccine* **21**:4071-80.
This paper reports the evaluation of a vaccine candidate.
29. **Sahu, S. P., D. D. Pedersen, A. L. Jenny, B. J. Schmitt, and A. D. Alstad.** 2003. Pathogenicity of a Venezuelan equine encephalomyelitis serotype IE virus isolate for ponies. *Am J Trop Med Hyg* **68**:485-94.
This paper reports the virulence of a strain of the virus.
30. **Seth, P., M. M. Husain, P. Gupta, A. Schoneboom, B. F. Grieder, H. Mani, and R. K. Maheshwari.** 2003. Early onset of virus infection and up-regulation of cytokines in mice treated with cadmium and manganese. *Biomaterials* **16**:359-68.
This paper reports the effects of metals on the susceptibility of mice for infection with the virus.
31. **Turell, M. J., M. L. O'Guinn, R. Navarro, G. Romero, and J. G. Estrada-Franco.** 2003. Vector competence of Mexican and Honduran mosquitoes (Diptera: Culicidae) for enzootic (IE) and epizootic (IC) strains of Venezuelan equine encephalomyelitis virus. *J Med Entomol* **40**:306-10.
This paper reports the susceptibility of certain mosquitoes to the virus.
32. **Wang, E., A. C. Brault, A. M. Powers, W. Kang, and S. C. Weaver.** 2003. Glycosaminoglycan binding properties of natural venezuelan equine encephalitis virus isolates. *J Virol* **77**:1204-10.
This paper describes the cell-surface-binding properties of strains of the virus.

33. **Aguilar, P. V., I. P. Greene, L. L. Coffey, G. Medina, A. C. Moncayo, M. Anishchenko, G. V. Ludwig, M. J. Turell, M. L. O'Guinn, J. Lee, R. B. Tesh, D. M. Watts, K. L. Russell, C. Hice, S. Yanoviak, A. C. Morrison, T. A. Klein, D. J. Dohm, H. Guzman, A. P. Travassos da Rosa, C. Guevara, T. Kochel, J. Olson, C. Cabezas, and S. C. Weaver.** 2004. Endemic Venezuelan equine encephalitis in northern Peru. *Emerg Infect Dis* **10**:880-8.
This paper describes a strain of the virus.
34. **Anishchenko, M., S. Paessler, I. P. Greene, P. V. Aguilar, A. S. Carrara, and S. C. Weaver.** 2004. Generation and characterization of closely related epizootic and enzootic infectious cDNA clones for studying interferon sensitivity and emergence mechanisms of Venezuelan equine encephalitis virus. *J Virol* **78**:1-8.
This paper reports the creation of infectious cDNA clones of different strains of the virus.
35. **Brault, A. C., A. M. Powers, D. Ortiz, J. G. Estrada-Franco, R. Navarro-Lopez, and S. C. Weaver.** 2004. Venezuelan equine encephalitis emergence: enhanced vector infection from a single amino acid substitution in the envelope glycoprotein. *Proc Natl Acad Sci U S A* **101**:11344-9.
This paper reports a vaccine candidate.
36. **Estrada-Franco, J. G., R. Navarro-Lopez, J. E. Freier, D. Cordova, T. Clements, A. Moncayo, W. Kang, C. Gomez-Hernandez, G. Rodriguez-Dominguez, G. V. Ludwig, and S. C. Weaver.** 2004. Venezuelan equine encephalitis virus, southern Mexico. *Emerg Infect Dis* **10**:2113-21.
This paper reports the characterization of a strain of the virus.
37. **Ortiz, D. I., and S. C. Weaver.** 2004. Susceptibility of *Ochlerotatus taeniorhynchus* (Diptera: Culicidae) to infection with epizootic (subtype IC) and enzootic (subtype ID) Venezuelan equine encephalitis viruses: evidence for epizootic strain adaptation. *J Med Entomol* **41**:987-93.
This paper reports the susceptibility of different mosquitoes for certain strains of the virus.
38. **Romoser, W. S., L. P. Wasieloski, Jr., P. Pushko, J. P. Kondig, K. Lerdthusnee, M. Neira, and G. V. Ludwig.** 2004. Evidence for arbovirus dissemination conduits from the mosquito (Diptera: Culicidae) midgut. *J Med Entomol* **41**:467-75.
This paper sheds light on the transmission of the virus from the mosquito midgut.
39. **Greene, I. P., S. Paessler, M. Anishchenko, D. R. Smith, A. C. Brault, I. Frolov, and S. C. Weaver.** 2005. Venezuelan equine encephalitis virus in the guinea pig model: evidence for epizootic virulence determinants outside the E2 envelope glycoprotein gene. *Am J Trop Med Hyg* **72**:330-8.
This paper reports the creation of a guinea pig model of VEE; and that the adaptation is not solely dependent on the envelope protein of the virus.

NIH Grants:

1	42	1R01AI048807-01	WEAVER, SCOTT	<u>ECOLOGY AND GENETICS OF VENEZUELAN EQUINE ENCEPHALITIS</u>
---	----	-----------------	---------------	---

Total: \$1,902,463			<ul style="list-style-type: none"> • \$388,437 2005 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$415,595 2004 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$27,488 2003 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$412,798 2003 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$319,602 2002 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$338,543 2001 Weaver, Scott C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
2	33	1UC1AI062538-01	FINE, DONALD	<u>Phase 2 Trial for Venezuelan Equine Encephalitis V3526</u>
Total: \$9,996,228			<ul style="list-style-type: none"> • \$9,996,228 2004 Fine, Donald L DYNPORT VACCINE COMPANY, LLC FREDERICK, MD 	
3	28	1R01AI050537-01A2	FROLOV, ILYA	<u>Interaction of Sindbis Virus with Cellular Processes</u>
Total: \$720,166			<ul style="list-style-type: none"> • \$298,000 2005 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$298,000 2004 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$124,166 2003 Frolov, Ilya V UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
4	28	1R43AI062185-01	OLIVO, PAUL	<u>Replicon-based screening for inhibitors of alphaviruses</u>
Total: \$958,581			<ul style="list-style-type: none"> • \$475,049 2005 Olivo, Paul D ORION GENOMICS, LLC ST. LOUIS, MO • \$483,532 2004 Olivo, Paul D JACOBS FACILITIES, INC. ST LOUIS, MO 	
5	28	1U01AI056438-01	SMITH, JONATHAN	<u>Alphavirus Replicon Vaccines to Encephalitis Viruses</u>
Total: \$6,081,763			<ul style="list-style-type: none"> • \$3,373,441 2005 Smith, Jonathan ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC • \$1,867,474 2004 Smith, Jonathan ICORIA, INC. RESEARCH TRIANGLE PARK, NC • \$840,848 2003 Smith, Jonathan ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC 	
6	28	1U54AI057156-010003	WEAVER, SCOTT	<u>Alphavirus Vaccines for Biodefense</u>
Total: \$27,834,107 *			<ul style="list-style-type: none"> • \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX • \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL 	

			BR GALVESTON GALVESTON, TX	
7	25	1R01AI063233-01	MACDONALD, MARGARET	<u>Host factors in the alphavirus replication complex</u>
Total: \$337,583			<ul style="list-style-type: none"> \$337,583 2005 Macdonald, Margaret R ROCKEFELLER UNIVERSITY NEW YORK, NY 	
8	22	1R01AI056351-01	BARIC, RALPH	<u>Susceptibility and Protective Immunity to Noroviruses</u>
Total: \$890,300			<ul style="list-style-type: none"> \$376,502 2005 Baric, Ralph S UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$384,133 2004 Baric, Ralph S UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$129,665 2003 Baric, Ralph S UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
9	22	1R21AI055746-01	BRAUN, WERNER	<u>Interacting motifs of alphavirus envelope proteins.</u>
Total: \$598,039			<ul style="list-style-type: none"> \$300,325 2004 Braun, Werner A UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$297,714 2003 Braun, Werner A UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
10	22	1P01AI048280-01A10002	BRODER, CHRISTOPHER	<u>HIV-1 gp140 Oligomers as Vaccine Immunogens</u>
Total: \$4,594,198 *			<ul style="list-style-type: none"> \$1,570,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$1,452,497 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$1,571,351 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD 	
11	22	1R21AI053737-01	CHIU, WAH	<u>High throughput icosahedral particle reconstruction</u>
Total: \$451,500			<ul style="list-style-type: none"> \$225,750 2003 Chiu, Wah BAYLOR COLLEGE OF MEDICINE HOUSTON, TX \$225,750 2002 Chiu, Wah BAYLOR COLLEGE OF MEDICINE HOUSTON, TX 	
12	22	2P01AI050246-020002	ERON, JOSEPH	<u>Phase I/II study of a VRP vaccine</u>
Total: \$4,842,264 *			<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH 	

				CAROLINA CHAPEL HILL CHAPEL HILL, NC <ul style="list-style-type: none"> \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
13	22	1R43AI060060-01	ESCH, ROBERT	<u>Ab Alphavirus Replicon Vaccine against Cytomegalovirus</u>
Total: \$600,000			<ul style="list-style-type: none"> \$300,000 2005 Esch, Robert E GREER LABORATORIES, INC. LENOIR, NC \$300,000 2004 Esch, Robert E GREER LABORATORIES, INC. LENOIR, NC 	
14	22	1U54AI057157-010001	FEINBERG, MARK	<u>Orthopoxvirus Vaccine Development</u>
Total: \$24,284,241			<ul style="list-style-type: none"> \$10,247,734 2005 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$9,829,455 2004 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$4,207,052 2003 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC 	
15	22	1P01AI050246-01	JOHNSTON, ROBERT	<u>Therapeutic Vaccination for HIV Using VEE Vectors</u>
Total: \$4,842,264 *			<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
16	22	2P01AI050246-02	JOHNSTON, ROBERT	<u>Therapeutic Vaccination for HIV Using VEE Vectors</u>
Total: \$4,842,264 *			<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
17	22	2P01AI050246-020004	JOHNSTON, ROBERT	<u>First and second generation HIV-VRP vaccines</u>
Total: \$4,842,264 *			<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH 	

				<p>CAROLINA CHAPEL HILL CHAPEL HILL, NC</p> <ul style="list-style-type: none"> \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
18	22	2P01AI050246-020005	KEITH, PAULA	<u>GMP production of clinical trial material</u>
			Total: \$4,842,264 *	<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
19	22	1Z01BP005026-01	NAKHASI, HIRA	<u>Molecular Mechanism and Diagnosis of Leishmaniasis</u>
20	22	1K08AI059491-01	PAESSLER, SLOBODAN	<u>VEE PATHOGENESIS AND VACCINE DEVELOPMENT</u>
			Total: \$211,787	<ul style="list-style-type: none"> \$112,619 2005 Paessler, Slobodan UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$99,168 2004 Paessler, Slobodan UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX
21	22	1P01AI048280-01A10001	QUINNAN, GERALD	<u>Broad Neutralizing Response to HIVenv/VEE Replicons</u>
			Total: \$4,594,198 *	<ul style="list-style-type: none"> \$1,570,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$1,452,497 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$1,571,351 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD
22	22	2P50CA058223-09A10016	SERODY, JONATHAN	<u>ENHANCING A BREAST CANCER VACCINE</u>
			Total: \$13,287,066	<ul style="list-style-type: none"> \$110,721 2004 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$2,670,618 2004 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$3,022,773 2003 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$350,606 2003 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$3,341,501 2002 Earp, H. S UNIVERSITY OF NORTH CAROLINA

				<p>CHAPEL HILL CHAPEL HILL, NC</p> <ul style="list-style-type: none"> \$2,779,247 2001 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$11,600 2001 Earp, H Shelton UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,000,000 2000 EARP, H. S UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
23	22	1U01AI053876-01	SMITH, JONATHAN	<u>Alphavirus Replicon Vaccines against Marburg Virus</u>
			Total: \$5,882,478	<ul style="list-style-type: none"> \$1,843,827 2004 Smith, Jonathan ICORIA, INC. RESEARCH TRIANGLE PARK, NC \$2,906,025 2003 Smith, Jonathan ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC \$1,132,626 2002 Smith, Jonathan F ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC
24	22	1UC1AI062582-01	SMITH, JONATHAN	<u>Development of Alphavirus Replicon Vaccine Against SARS</u>
			Total: \$4,839,367	<ul style="list-style-type: none"> \$4,839,367 2004 Smith, Jonathan ICORIA, INC. RESEARCH TRIANGLE PARK, NC
25	22	1R21AI051638-01	TISCH, ROLAND	<u>The Use of VEE Replicons Encoding GAD65 to Treat IDDM</u>
			Total: \$291,000	<ul style="list-style-type: none"> \$145,500 2002 Tisch, Roland M UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$145,500 2001 Tisch, Roland M. UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
26	22	1R21AI050430-01	VAJDY, MICHAEL	<u>Alphavirus Replicons for Mucosal HIV Vaccines</u>
			Total: \$584,179	<ul style="list-style-type: none"> \$272,907 2002 Vajdy, Michael CHIRON CORPORATION EMERYVILLE, CA \$311,272 2001 Vajdy, Michael CITY OF HOPE TOTAL AWARDS: \$ 276,381 DUARTE, CA
27	22	1F06TW002348-01	WEAVER, SCOTT	<u>ADAPTATION OF ALPHAVIRUSES TO GLYCOSAMINOGLYCAN BINDING</u>
			Total: \$15,400	<ul style="list-style-type: none"> \$15,400 2000 WEAVER, SCOTT C UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX
28	22	1F32AI049680-01	WHITE, LAURA	<u>Mechanism of VEE Attenuation</u>
			Total: \$108,362	<ul style="list-style-type: none"> \$18,218 2003 White, Laura J UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$48,148 2002 White, Laura J UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$41,996 2001 White, Laura J UNIVERSITY OF NORTH CAROLINA

			CHAPEL HILL CHAPEL HILL, NC	
29	22	1U01AI047985-01	WRIGHT, PETER	<u>HIV VACCINE CLINICAL TRIALS UNIT</u>
Total: \$9,436,864			<ul style="list-style-type: none"> \$1,932,451 2004 Wright, Peter F VANDERBILT UNIVERSITY NASHVILLE, TN \$1,876,165 2003 Wright, Peter F VANDERBILT UNIVERSITY Nashville, TN \$1,821,839 2002 Wright, Peter F VANDERBILT UNIVERSITY NASHVILLE, TN \$1,774,800 2001 Wright, Peter F VANDERBILT UNIVERSITY NASHVILLE, TN \$2,031,609 2000 WRIGHT, PETER F VANDERBILT UNIVERSITY NASHVILLE, TN 	
30	22	1P01AI048280-01A10003	YU, XIAO-FANG	<u>Cellular Immune Responses to DNA and Recombinant VEE</u>
Total: \$4,594,198 *			<ul style="list-style-type: none"> \$1,570,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$1,452,497 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$1,571,351 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD 	
31	22	1P01AI048280-01A19002	ZHANG, PENG	<u>Core--Virus Production and Neutralization Facility</u>
Total: \$4,594,198 *			<ul style="list-style-type: none"> \$1,570,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$1,452,497 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$1,571,351 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD 	
32	12	2R01NS018596-21A1	GRIFFIN, DIANE	<u>ACUTE ALPHAVIRUAL ENCEPHALITIS</u>
Total: \$1,937,286			<ul style="list-style-type: none"> \$378,094 2004 Griffin, Diane E JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$403,865 2003 Griffin, Diane E JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$394,024 2002 Griffin, Diane E JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$384,961 2001 Griffin, Diane E JOHNS HOPKINS UNIVERSITY BALTIMORE, MD \$376,342 2000 GRIFFIN, DIANE E JOHNS HOPKINS UNIVERSITY BALTIMORE, MD 	
33	12	2R01GM052929-09	KIELIAN, MARGARET	<u>Molecular Analysis of Alphavirus Membrane Fusion Protein</u>
Total: \$1,801,954			<ul style="list-style-type: none"> \$415,357 2004 Kielian, Margaret C YESHIVA UNIVERSITY NEW YORK, NY \$445,052 2003 Kielian, Margaret C YESHIVA UNIVERSITY NEW 	

			<p>YORK, NY</p> <ul style="list-style-type: none"> • \$318,954 2002 Kielian, Margaret C YESHIVA UNIVERSITY NEW YORK, NY • \$309,821 2001 Kielian, Margaret C YESHIVA UNIVERSITY NEW YORK, NY • \$312,770 2000 KIELIAN, MARGARET C YESHIVA UNIVERSITY NEW YORK, NY
34	12	1P01AI055672-010003	<p>KUHN, RICHARD</p> <p><u>Molecular analyses of alpha- and flavivirus replication</u></p>
<p>Total: \$8,127,036 *</p>			<ul style="list-style-type: none"> • \$41,733 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$3,082,404 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$2,994,435 2004 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$2,008,464 2003 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN
35	12	1P01AI055672-019001	<p>KUHN, RICHARD</p> <p><u>CORE--Shared structural virology facilities</u></p>
<p>Total: \$8,127,036 *</p>			<ul style="list-style-type: none"> • \$41,733 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$3,082,404 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$2,994,435 2004 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN • \$2,008,464 2003 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN
36	12	1U54AI057153-010006	<p>KUHN, RICHARD</p> <p><u>Development of Antiviral Strategies for Enveloped Virus</u></p>
<p>Total: \$20,734,800</p>			<ul style="list-style-type: none"> • \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL
37	12	1R01AI057905-01A2	<p>MACDONALD, MARGARET</p> <p><u>Studies on ZAP, a broad-spectrum alphavirus inhibitor</u></p>
<p>Total: \$379,875</p>			<ul style="list-style-type: none"> • \$379,875 2005 Macdonald, Margaret R ROCKEFELLER UNIVERSITY NEW YORK, NY
38	12	1Z01BK007013-01	<p>MARKOFF, L</p> <p><u>Infectious DNAs to derive mutant flavi- and alphaviruses</u></p>
39	12	1P01AI055672-010006	<p>STRAUSS, JAMES</p> <p><u>Structure-function of alpha- and flavivirus proteins</u></p>

Total: \$8,127,036 *			<ul style="list-style-type: none"> \$41,733 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$3,082,404 2005 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$2,994,435 2004 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN \$2,008,464 2003 Kuhn, Richard J PURDUE UNIVERSITY WEST LAFAYETTE WEST LAFAYETTE, IN 	
40	11	1U54AI057156-010010	BASEMAN, JOEL	<u>Developmental Research</u>
Total: \$27,834,107 *			<ul style="list-style-type: none"> \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
41	11	1K02AI050432-01	BURKHARD, MARY	<u>Cell-FIV: Mucosal transmission and intervention</u>
Total: \$381,306			<ul style="list-style-type: none"> \$103,113 2004 Burkhard, Mary J OHIO STATE UNIVERSITY COLUMBUS, OH \$93,458 2003 Burkhard, Mary J NORTH CAROLINA STATE UNIVERSITY RALEIGH RALEIGH, NC \$93,458 2002 Burkhard, Maryjo J NORTH CAROLINA STATE UNIVERSITY RALEIGH RALEIGH, NC \$91,277 2001 Burkhard, Maryjo J NORTH CAROLINA STATE UNIVERSITY RALEIGH RALEIGH, NC 	
42	11	1U01AI057286-01	CHULAY, JEFFREY	<u>Alphavirus Replicon Vaccines against Botulinum Neurotox*</u>
Total: \$6,721,271			<ul style="list-style-type: none"> \$1,799,459 2005 Chulay, Jeffrey ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC \$3,577,242 2004 Chulay, Jeffrey ICORIA, INC. RESEARCH TRIANGLE PARK, NC \$1,344,570 2003 Chulay, Jeffrey ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC 	
43	11	1UC1AI062632-01	CHULAY, JEFFREY	<u>Alphavirus Replicon Vaccines against Influenza</u>
Total: \$6,490,848			<ul style="list-style-type: none"> \$6,490,848 2005 Chulay, Jeffrey ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC 	
44	11	1Z01BP005021-01	DUNCAN, ROBERT	<u>Pathogen Chip for Detection of Bioterrorism Agents in Bl</u>
45	11	1R21AI055609-01	EBEL, GREGORY	<u>Arbovirus quasispecies-impact of arthropod transmission</u>
Total: \$458,602			<ul style="list-style-type: none"> \$243,594 2004 Ebel, Gregory D WADSWORTH CENTER ALBANY, NY 	

				<ul style="list-style-type: none"> \$215,008 2003 Ebel, Gregory D WADSWORTH CENTER ALBANY, NY
46	11	1P01AI050246-010003	JOHNSTON, ROBERT	<u>VRP IMMUNOGENICITY FOR A SECOND GENERATION VACCINE</u>
Total: \$4,842,264 *				<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC
47	11	1R21AI063460-01A1	LINGAPPA, JAISRI	<u>Cell-free VEE assembly system and alphavirus drug screen</u>
48	11	1R01AI049764-01	MADDON, PAUL	<u>HIV Vaccine Design and Development Team</u>
Total: \$4,064,764				<ul style="list-style-type: none"> \$2,090,481 2001 Maddon, Paul J PROGENICS PHARMACEUTICALS, INC. TARRYTOWN, NY \$1,974,283 2000 MADDON, PAUL J INC. TARRYTOWN, PROGENICS PHARMACEUTICALS, NY
49	11	2R01AI025850-16	MONTELARO, RONALD	<u>EIAV Envelope Variation and Vaccine Efficacy</u>
Total: \$2,421,622				<ul style="list-style-type: none"> \$608,093 2005 Montelaro, Ronald C UNIVERSITY OF PITTSBURGH AT PITTSBURGH PITTSBURGH, PA \$616,652 2004 Montelaro, Ronald C UNIVERSITY OF PITTSBURGH PITTSBURGH, PA \$309,211 2003 Montelaro, Ronald C UNIVERSITY OF PITTSBURGH PITTSBURGH, PA \$449,659 2001 Montelaro, Ronald C UNIVERSITY OF PITTSBURGH PITTSBURGH, PA \$438,007 2000 MONTELARO, RONALD C UNIVERSITY OF PITTSBURGH AT PITTSBURGH PITTSBURGH, PA
50	11	1P01AI048280-01A1	QUINNAN, GERALD	<u>BROADLY EFFECTIVE NEUTRALIZATION AND CTL AGAINST HIV 1</u>
Total: \$4,594,198 *				<ul style="list-style-type: none"> \$1,570,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$1,452,497 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$1,571,351 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD
51	11	2R01AI037438-05A2	QUINNAN,	<u>NEUTRALIZATION RESISTANCE OF</u>

			GERALD	<u>HIV-1</u>
Total: \$1,296,750			<ul style="list-style-type: none"> \$259,350 2005 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$259,350 2004 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$259,350 2003 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$259,350 2002 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD \$259,350 2001 Quinnan, Gerald V HENRY M. JACKSON FDN FOR THE ADV MIL/MED BETHESDA, MD 	
52	11	1UC1AI067203-01	SIGAL, GEORGE	<u>A Multiplexed Point-of-Care Diagnostic System for Bio-T*</u>
53	11	2P01AI050246-029001	WALKER, BRUCE	<u>Core--Human immunology facility</u>
Total: \$4,842,264 *			<ul style="list-style-type: none"> \$59,191 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,413,970 2004 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,338,827 2003 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$1,390,608 2002 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC \$639,668 2001 Johnston, Robert E UNIVERSITY OF NORTH CAROLINA CHAPEL HILL CHAPEL HILL, NC 	
54	11	1D43TW006590-01	WALKER, DAVID	<u>Tropical Vector-borne Viral and Rickettsial Infections</u>
Total: \$450,000			<ul style="list-style-type: none"> \$150,000 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$150,000 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$150,000 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
55	11	1U54AI057156-01	WALKER, DAVID	<u>Region VI Center for Biodefence and Emerging Infections</u>
Total: \$27,834,107 *			<ul style="list-style-type: none"> \$12,024,542 2005 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$11,566,950 2004 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$4,242,615 2003 Walker, David H UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
56	11	1R21AI063061-01	WHITE, LAURA	<u>A VEE Replicon-Based Vaccine for Dengue Virus</u>
Total: \$292,000			<ul style="list-style-type: none"> \$292,000 2005 White, Laura J UNIVERSITY OF NORTH CAROLINA 	

	CHAPEL HILL CHAPEL HILL, NC
--	-------------------------------

Vesicular stomatitis Alagoas/Indiana virus (exotic)

Taxonomy: Order *Mononegavirales*, Family *Rhabdoviridae*, Genus *Vesiculovirus*, Species *Vesicular stomatitis Alagoas/Indiana*, Virus: Vesicular stomatitis Alagoas/Indiana virus, exotic strains: Indiana-3 (Alagoas); Indiana-2 (Cocal) and Piry (recently reclassified as Cocal virus and Piry virus).

Publications:

None identified.

NIH Grants:

1	27	1Z01NS002997-01	SCHUBERT, MANFRED	<u>Viral Vectors For The Nervous System</u>
2	21	1R01CA095924-01A2	BARBER, GLEN	<u>Mechanisms of VSV-mediated Oncolysis</u>
Total: \$606,758			<ul style="list-style-type: none"> \$303,379 2004 Barber, Glen N UNIVERSITY OF MIAMI-MEDICAL CORAL GABLES, FL \$303,379 2003 Barber, Glen N UNIVERSITY OF MIAMI-MEDICAL Coral Gables, FL 	
3	21	1R41CA103255-01	WHITT, MICHAEL	<u>Targeted Oncolytic VSV as a Prostate Cancer Therapy</u>
Total: \$130,741			<ul style="list-style-type: none"> \$130,741 2003 Whitt, Michael A GTX, INC. MEMPHIS, TN 	
4	21	1U19AI048216-010002	WHITT, MICHAEL	<u>Surrogate HCV to study virus/cell interactions</u>
Total: \$3,736,332			<ul style="list-style-type: none"> \$809,587 2004 Riely, Caroline A UNIVERSITY OF TENNESSEE HEALTH SCI CTR MEMPHIS, TN \$786,544 2003 Riely, Caroline A UNIVERSITY OF TENNESSEE HEALTH SCI CTR MEMPHIS, TN \$668,404 2002 Riely, Caroline A UNIVERSITY OF TENNESSEE HEALTH SCI CTR MEMPHIS, TN \$738,193 2001 Riely, Caroline A UNIVERSITY OF TENNESSEE HEALTH SCI CTR MEMPHIS, TN 	

				<ul style="list-style-type: none"> \$733,604 2000 RIELY, CAROLINE A UNIVERSITY OF TENNESSEE AT MEMPHIS MEMPHIS, TN
5	12	1F32AI051805-01A1	CONNOR, JOHN	<u>Protein synthesis control by vesicular stomatitis virus</u>
Total: \$66,711			<ul style="list-style-type: none"> \$20,519 2004 Connor, John H ION TECHNOLOGIES, INC. WINSTON-SALEM, NC \$46,192 2003 Connor, John H KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC 	
6	11	1P2ORR020159-010005	APETREI, CRISTIAN	<u>NEW MEASLES VACCINE STRATEGY USING VSV VECTORS</u>
Total: \$2,166,086			<ul style="list-style-type: none"> \$2,166,086 2004 Kousoulas, Konstantin G LOUISIANA STATE UNIV A&M COL BATON ROUGE BATON ROUGE, LA 	
7	11	2R01AI026585-16A1	BANERJEE, AMIYA	<u>Gene Expression of Negative strand RNA Viruses</u>
Total: \$1,969,430			<ul style="list-style-type: none"> \$416,685 2005 Banerjee, Amiya K CLEVELAND CLINIC LERNER COL/MED-CWRU CLEVELAND, OH \$403,363 2003 Banerjee, Amiya K CLEVELAND CLINIC FOUNDATION CLEVELAND, OH \$393,304 2002 Banerjee, Amiya K CLEVELAND CLINIC FOUNDATION CLEVELAND, OH \$383,537 2001 Banerjee, Amiya K CLEVELAND CLINIC FOUNDATION CLEVELAND, OH \$372,541 2000 Banerjee, Amiya K. CLEVELAND CLINIC FOUNDATION CLEVELAND, OH 	
8	11	1R01CA104404-01A1	BERGMAN, IRA	<u>Targeted Recombinant VSV Virus to Treat Breast Cancer</u>
Total: \$277,684			<ul style="list-style-type: none"> \$277,684 2005 Bergman, Ira CHILDREN'S HOSP PITTSBURGH/UPMC HLTH SYS PITTSBURGH, PA 	
9	11	1R01AI048700-01A2	CIAVARRA, RICHARD	<u>Dendritic Cell Subset Regulation of Viral Immunity</u>
Total: \$617,372			<ul style="list-style-type: none"> \$246,400 2005 Ciavarra, Richard P EASTERN VIRGINIA MEDICAL SCHOOL NORFOLK, VA \$253,025 2004 Ciavarra, Richard P EASTERN VIRGINIA MEDICAL SCHOOL NORFOLK, VA \$117,947 2003 Ciavarra, Richard P EASTERN VIRGINIA MEDICAL SCHOOL NORFOLK, VA 	
10	11	1U54AI057158-010002	CRYSTAL, RONALD	<u>Vaccine Platforms</u>
Total: \$21,685,329			<ul style="list-style-type: none"> \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY 	

				<ul style="list-style-type: none"> \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY
11	11	1R01GM071666-01	DOVICH, NORMAN	<u>HIGHLY PARALLEL SURVEY OF SINGLE-CELL PROTEIN EXPRESSION</u>
Total: \$255,417			<ul style="list-style-type: none"> \$255,417 2004 Dovichi, Norman J UNIVERSITY OF WASHINGTON SEATTLE, WA 	
12	11	1R15AI058969-01	FERRAN, MAUREEN	<u>Interferon Gene Expression in VSV-Infected Cells</u>
Total: \$206,723			<ul style="list-style-type: none"> \$206,723 2004 Ferran, Maureen C ROCHESTER INSTITUTE OF TECHNOLOGY ROCHESTER, NY 	
13	11	1R01AI051560-01	FU, ZHEN	<u>Developing Avirulent Rabies Virus Vaccines</u>
Total: \$837,320			<ul style="list-style-type: none"> \$253,400 2004 Fu, Zhen F UNIVERSITY OF GEORGIA ATHENS, GA \$341,720 2003 Fu, Zhen F UNIVERSITY OF GEORGIA ATHENS, GA \$242,200 2002 Fu, Zhen F UNIVERSITY OF GEORGIA ATHENS, GA 	
14	11	2P01NS031492-110008	GENDELMAN, HOWARD	<u>Pathways of Neuronal Damage Involving Macrophage-Glia Interactions In Vivo</u>
Total: \$6,320,778			<ul style="list-style-type: none"> \$1,487,483 2004 Volsky, David J ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$1,504,124 2003 Volsky, David J ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$1,085,710 2002 Volsky, David J ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$100,000 2001 Volsky, David J ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$1,059,470 2001 Volsky, David J ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$1,033,991 2000 Volsky, David J. ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY \$50,000 2000 Volsky, David J. ST. LUKE'S-ROOSEVELT INST FOR HLTH SCIS NEW YORK, NY 	
15	11	2R01AI015892-23A1	LYLES, DOUGLAS	<u>Assembly of enveloped viruses</u>
Total: \$1,340,052			<ul style="list-style-type: none"> \$287,000 2005 Lyles, Douglas S KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC \$287,500 2004 Lyles, Douglas S ION TECHNOLOGIES, INC. WINSTON-SALEM, NC \$262,763 2002 Lyles, Douglas S WINSTON-SALEM STATE UNIVERSITY WINSTON-SALEM, NC \$255,110 2001 Lyles, Douglas S PPD DEVELOPMENT, INC. WILMINGTON, NC \$247,679 2000 LYLES, DOUGLAS S WAKE FOREST UNIVERSITY WINSTON-SALEM, NC 	

16	11	2R01AI032983-07A2	LYLES, DOUGLAS	<u>Cellular interactions of viral matrix protein</u>
Total: \$1,144,780			<ul style="list-style-type: none"> • \$287,000 2005 Lyles, Douglas S KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC • \$287,417 2004 Lyles, Douglas S ION TECHNOLOGIES, INC. WINSTON-SALEM, NC • \$288,000 2003 Lyles, Douglas S KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC • \$282,363 2000 LYLES, DOUGLAS S WAKE FOREST UNIVERSITY WINSTON-SALEM, NC 	
17	11	1R01AI052304-01A2	LYLES, DOUGLAS	<u>Control of translation by VSV</u>
Total: \$382,667			<ul style="list-style-type: none"> • \$287,000 2005 Lyles, Douglas S KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC • \$95,667 2004 Lyles, Douglas S ION TECHNOLOGIES, INC. WINSTON-SALEM, NC 	
18	11	1R21AI052304-01A1	LYLES, DOUGLAS	<u>Control of translation by VSV</u>
Total: \$287,750			<ul style="list-style-type: none"> • \$287,750 2003 Lyles, Douglas S KUCERA PHARMACEUTICAL COMPANY WINSTON-SALEM, NC 	
20	11	1P01AI060642-01	MIZEL, STEVEN	<u>Respiratory Immunity Against Agents of Bioterrorism</u>
Total: \$1,818,389			<ul style="list-style-type: none"> • \$1,818,389 2004 Mizel, Steven B ION TECHNOLOGIES, INC. WINSTON-SALEM, NC 	
21	11	2R01AI014594-23A1	MOYER, SUE	<u>TRANSCRIPTION OF NEGATIVE STRAND RNA VIRUSES</u>
Total: \$1,727,646			<ul style="list-style-type: none"> • \$364,708 2005 Moyer, Sue A UNIVERSITY OF FLORIDA GAINESVILLE, FL • \$354,134 2004 Moyer, Sue A UNIVERSITY OF FLORIDA GAINESVILLE, FL • \$343,869 2003 Moyer, Sue A UNIVERSITY OF FLORIDA GAINESVILLE, FL • \$333,903 2002 Moyer, Sue A UNIVERSITY OF FLORIDA GAINESVILLE, FL • \$331,032 2001 Moyer, Sue A. UNIVERSITY OF FLORIDA GAINESVILLE, FL 	
22	11	1R01AI045686-01A2	NOVELLA, ISABEL	<u>SURVIVAL AND EXTINCTION IN RNA VIRUS POPULATIONS</u>
Total: \$758,888			<ul style="list-style-type: none"> • \$257,250 2003 Novella, Isabel S MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH • \$244,388 2002 Novella, Isabel S MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH • \$257,250 2001 Novella, Isabel S MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH 	
23	11	1R01AI065960-01	NOVELLA,	<u>Determinants of RNA virus evolution</u>

			ISABEL	
Total: \$307,767			<ul style="list-style-type: none"> \$307,767 2005 Novella, Isabel S MEDICAL COLLEGE OF OHIO AT TOLEDO TOLEDO, OH 	
24	11	1P2ORR015587-010002	OTT, TROY	<u>MX EXPRESSION AND UTERINE MUCCOSAL IMMUNITY</u>
Total: \$9,254,978			<ul style="list-style-type: none"> \$1,917,030 2004 Bohach, Gregory A NEZ PERCE TRIBAL EXECUTIVE COMMITTEE LAPWAI, ID \$1,905,487 2003 Bohach, Gregory A UNIVERSITY OF IDAHO MOSCOW, ID \$498,384 2003 Bohach, Gregory A UNIVERSITY OF IDAHO MOSCOW, ID \$1,372,188 2002 Bohach, Gregory A UNIVERSITY OF IDAHO MOSCOW, ID \$1,842,630 2001 Bohach, Gregory A UNIVERSITY OF IDAHO MOSCOW, ID \$1,719,259 2000 BOHACH, GREGORY A UNIVERSITY OF IDAHO MOSCOW, ID 	
25	11	2R01AI034956-06A2	PATNAIK, ASIT	<u>VSV RNA Transcription and Replication</u>
Total: \$1,460,808			<ul style="list-style-type: none"> \$290,000 2005 Pattnaik, Asit K UNIVERSITY OF NEBRASKA LINCOLN LINCOLN, NE \$290,000 2004 Pattnaik, Asit K UNIVERSITY OF NEBRASKA LINCOLN LINCOLN, NE \$290,000 2003 Pattnaik, Asit K UNIVERSITY OF NEBRASKA LINCOLN LINCOLN, NE \$296,820 2002 Pattnaik, Asit K UNIVERSITY OF MIAMI MIAMI, FL \$293,988 2001 Pattnaik, Asit K UNIVERSITY OF MIAMI MIAMI, FL 	
26	11	1R01AI050900-01	REINHERZ, ELLIS	<u>Thymic vaccination: Manipulating the T cell repertoire</u>
Total: \$5,736,415			<ul style="list-style-type: none"> \$1,834,795 2003 Reinherz, Ellis L DANA-FARBER CANCER INSTITUTE BOSTON, MA \$1,859,942 2002 Reinherz, Ellis L DANA-FARBER CANCER INSTITUTE BOSTON, MA \$2,041,678 2001 Reinherz, Ellis L DANA-FARBER CANCER INSTITUTE BOSTON, MA 	
27	11	2R01DC003536-04A1	REISS, CAROL	<u>VSV INFECTION OF THE CENTRAL NERVOUS SYSTEM</u>
Total: \$1,340,632			<ul style="list-style-type: none"> \$269,168 2005 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY \$27,907 2004 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY \$265,723 2004 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY \$262,414 2003 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY \$259,236 2002 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY \$256,184 2001 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY 	
28	11	2R01NS039746-05A1	REISS, CAROL	<u>Cytokine activation of neurons</u>

Total: \$1,458,551			<ul style="list-style-type: none"> • \$352,334 2005 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY • \$291,441 2003 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY • \$280,886 2002 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY • \$17,936 2001 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY • \$259,591 2001 Reiss, Carol S NEW YORK UNIVERSITY NEW YORK, NY • \$256,363 2000 REISS, CAROL S NEW YORK UNIVERSITY NEW YORK, NY 	
29	11	2R01AI045510-05	ROSE, JOHN	<u>Immune Responses to VSV/HIV/SIV Hybrids in Macaques</u>
Total: \$3,315,511			<ul style="list-style-type: none"> • \$573,574 2005 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$623,174 2004 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$637,975 2003 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$490,129 2002 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$501,584 2001 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$489,075 2000 ROSE, JOHN K YALE UNIVERSITY NEW HAVEN, CT 	
30	11	2R37AI040357-08	ROSE, JOHN	<u>Development of VSV/HIV Recombinants as HIV Vaccines</u>
Total: \$817,500			<ul style="list-style-type: none"> • \$327,000 2005 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$327,000 2004 Rose, John K YALE UNIVERSITY NEW HAVEN, CT • \$163,500 2003 Rose, John K YALE UNIVERSITY NEW HAVEN, CT 	
31	11	1R01CA089132-01A1	SILVERMAN, ROBERT	<u>Role of Phospholipid Scramblase in Interferon Action</u>
Total: \$1,510,763			<ul style="list-style-type: none"> • \$397,096 2004 Silverman, Robert H CLEVELAND CLINIC LERNER COL/MED-CWRU CLEVELAND, OH • \$398,782 2003 Silverman, Robert H CLEVELAND CLINIC LERNER COL/MED-CWRU CLEVELAND, OH • \$368,424 2002 Silverman, Robert H CLEVELAND CLINIC FOUNDATION CLEVELAND, OH • \$346,461 2001 Silverman, Robert H CLEVELAND CLINIC FOUNDATION CLEVELAND, OH 	
32	11	1R01NS042307-01A2	SOLBRIG, MARYLOU	<u>Viral neuropathology neuropeptides and epilepsy</u>
Total: \$1,081,220			<ul style="list-style-type: none"> • \$361,594 2005 Solbrig, Marylou V UNIVERSITY OF CALIFORNIA IRVINE IRVINE, CA • \$359,813 2004 Solbrig, Marylou V UNIVERSITY OF CALIFORNIA IRVINE IRVINE, CA • \$359,813 2003 Solbrig, Marylou V UNIVERSITY OF CALIFORNIA IRVINE IRVINE, CA 	
33	11	1R21AI062246-01A1	THIEL, VOLKER	<u>Coronavirus-based multigene HIV vaccine vectors</u>
34	11	1R01AI059371-01A1	WHELAN, SEAN	<u>RNA processing in non-segmented minus-strand RNA viruses</u>

Total: \$339,000			<ul style="list-style-type: none"> \$339,000 2005 Whelan, Sean Pj HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA 	
35	11	1R41CA103269-01	WHITT, MICHAEL	<u>Developing VSV cytolytics against High-Grade CNS gliomas</u>
Total: \$140,097			<ul style="list-style-type: none"> \$140,097 2003 Whitt, Michael A GTX, INC. MEMPHIS, TN 	
36	11	1R01CA100830-01	WOO, SAVIO	<u>Oncolytic VSV for Hepatocellular Carcinoma</u>
Total: \$1,018,272			<ul style="list-style-type: none"> \$339,424 2005 Woo, Savio L MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY \$339,424 2004 Woo, Savio L MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY \$339,424 2003 Woo, Savio Lc MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	
37	7	1R01CA098355-01A1	BRANDSMA, JANET	<u>VSV-based Therapeutic Papilloma Vaccine</u>
Total: \$971,432			<ul style="list-style-type: none"> \$327,409 2005 Brandsma, Janet L YALE UNIVERSITY NEW HAVEN, CT \$327,409 2004 Brandsma, Janet L YALE UNIVERSITY NEW HAVEN, CT \$316,614 2003 Brandsma, Janet L YALE UNIVERSITY NEW HAVEN, CT 	

Xanthomonas oryzae (pathovar *Oryzicola*; formerly known as *Xanthomonas campestris* pathovar

Oryzicola)

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Gammaproteobacteria*, Order

Xanthomonadales, Family *Xanthomonadaceae*.

Publications:

- Zhao, B. Y., E. Ardales, E. Brasslet, L. E. Clafin, J. E. Leach, and S. H. Hulbert.** 2004. The *Rxo1/ Rba1* locus of maize controls resistance reactions to pathogenic and non-host bacteria. *Theor Appl Genet* **109**:71-9.
This paper identifies a plant factor that provides plants with protection from rapid hypersensitive reaction upon exposure to the bacterium.

NIH Grants: None identified.

Xylella fastidiosa (citrus variegated chlorosis strain)

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Gammaproteobacteria*, Order *Xanthomonadales*, Family *Xanthomonadaceae*.

Publications:

1. **Chen, J., John S. Hartung, Chung-Jan Chang, Anne K. Vidaver.** 2002. An Evolutionary Perspective of Pierce's Disease of Grapevine, Citrus Variegated Chlorosis, and Mulberry Leaf Scorch Diseases. *Curr Microbiol* **45**:423-8.
This paper describes the evaluation of the phylogenetic relationships of *Xylella fastidiosa* strains from citrus, grapevine, and mulberry through the analyses of random amplified polymorphic DNAs and conserved 16S rDNA genes.
2. **Harakava, R., and Dean W. Gabriel.** 2003. Genetic Differences between Two Strains of *Xylella fastidiosa* Revealed by Suppression Subtractive Hybridization. *Appl Environ Microbiol* **69**:1315-19.
This paper reports on the success in using suppression subtractive hybridization for the differentiation of *Xylella fastidiosa* citrus variegated chlorosis and Pierce's disease strains.

NIH grants: None identified.

Yersinia pestis

Taxonomy: Domain *Bacteria*, Phylum *Proteobacteria*, Class *Gammaproteobacteria*, Order *Enterobacteriales*, Family *Enterobacteriaceae*.

Publications:

1. **Adair, D. M., P. L. Worsham, K. K. Hill, A. M. Klevytska, P. J. Jackson, A. M. Friedlander, and P. Keim.** 2000. Diversity in a variable-number tandem repeat from *Yersinia pestis*. *J Clin Microbiol* **38**:1516-9.
This paper reports the differentiation of various strains of the bacterium based on sequence variation.
2. **Cowan, C., H. A. Jones, Y. H. Kaya, R. D. Perry, and S. C. Straley.** 2000. Invasion of epithelial cells by *Yersinia pestis*: evidence for a *Y. pestis*-specific invasin. *Infect Immun* **68**:4523-30.
This paper reports the identification of a virulence factor of the bacterium.
3. **Day, J. B., I. Guller, and G. V. Plano.** 2000. *Yersinia pestis* YscG protein is a Syc-like chaperone that directly binds yscE. *Infect Immun* **68**:6466-71.

- This paper reports the functional characterization of a protein of the bacterium.
4. **Day, J. B., and G. V. Plano.** 2000. The *Yersinia pestis* YscY protein directly binds YscX, a secreted component of the type III secretion machinery. *J Bacteriol* **182**:1834-43.
This paper reports the characterization of a protein of the bacterium.
 5. **Dong, X. Q., L. E. Lindler, and M. C. Chu.** 2000. Complete DNA sequence and analysis of an emerging cryptic plasmid isolated from *Yersinia pestis*. *Plasmid* **43**:144-8.
This paper reports the sequence of a plasmid of the bacterium.
 6. **Engelthaler, D. M., and K. L. Gage.** 2000. Quantities of *Yersinia pestis* in fleas (Siphonaptera: Pulicidae, Ceratophyllidae, and Hystrihopsyllidae) collected from areas of known or suspected plague activity. *J Med Entomol* **37**:422-6.
This paper reports the quantities of the bacterium found in fleas.
 7. **Engelthaler, D. M., B. J. Hinnebusch, C. M. Rittner, and K. L. Gage.** 2000. Quantitative competitive PCR as a technique for exploring flea-*Yersinia pestis* dynamics. *Am J Trop Med Hyg* **62**:552-60.
This paper reports the development of a PCR-based detection system.
 8. **Geoffroy, V. A., J. D. Fetherston, and R. D. Perry.** 2000. *Yersinia pestis* YbtU and YbtT are involved in synthesis of the siderophore yersiniabactin but have different effects on regulation. *Infect Immun* **68**:4452-61.
This paper reports the identification of two proteins of the bacterium that are involved in the synthesis of a virulence factor.
 9. **Hinnebusch, J., P. Cherepanov, Y. Du, A. Rudolph, J. D. Dixon, T. Schwan, and A. Forsberg.** 2000. Murine toxin of *Yersinia pestis* shows phospholipase D activity but is not required for virulence in mice. *Int J Med Microbiol* **290**:483-7.
This paper reports the characterization of a toxin of the bacterium.
 10. **Iqbal, S. S., J. P. Chambers, M. T. Goode, J. J. Valdes, and R. R. Brubaker.** 2000. Detection of *Yersinia pestis* by pesticin fluorogenic probe-coupled PCR. *Mol Cell Probes* **14**:109-14.
This paper reports the development of a diagnostic system.
 11. **Jackson, M. W., and G. V. Plano.** 2000. Interactions between type III secretion apparatus components from *Yersinia pestis* detected using the yeast two-hybrid system. *FEMS Microbiol Lett* **186**:85-90.
This paper reports specifics of the composition of a secretion system of the bacterium.
 12. **Wong, J. D., J. R. Barash, R. F. Sandfort, and J. M. Janda.** 2000. Susceptibilities of *Yersinia pestis* strains to 12 antimicrobial agents. *Antimicrob Agents Chemother* **44**:1995-6.
This paper reports the antibiotic susceptibility of the bacterium.
 13. **Castle, K. T., D. Biggins, L. G. Carter, M. Chu, K. Innes, and J. Wimsatt.** 2001. Susceptibility of the Siberian polecat to subcutaneous and oral *Yersinia pestis* exposure. *J Wildl Dis* **37**:746-54.
This paper reports that the Siberian polecat is susceptible to infection with the bacterium.
 14. **Gong, S., S. W. Bearden, V. A. Geoffroy, J. D. Fetherston, and R. D. Perry.** 2001. Characterization of the *Yersinia pestis* Yfu ABC inorganic iron transport system. *Infect Immun* **69**:2829-37.
This paper reports an iron transporter of the bacterium.

15. **Hines, J., E. Skrzypek, A. V. Kajava, and S. C. Straley.** 2001. Structure-function analysis of *Yersinia pestis* YopM's interaction with alpha-thrombin to rule on its significance in systemic plague and to model YopM's mechanism of binding host proteins. *Microb Pathog* **30**:193-209.
This paper reports the characterization of a protein of the bacterium that might have an important role in pathogenesis.
16. **Klevytska, A. M., L. B. Price, J. M. Schupp, P. L. Worsham, J. Wong, and P. Keim.** 2001. Identification and characterization of variable-number tandem repeats in the *Yersinia pestis* genome. *J Clin Microbiol* **39**:3179-85.
This paper reports the identification of specific sequences in the genome of the bacterium that could be used for diagnostics.
17. **Le Fleche, P., Y. Hauck, L. Onteniente, A. Prieur, F. Denoeud, V. Ramiise, P. Sylvestre, G. Benson, F. Ramiise, and G. Vergnaud.** 2001. A tandem repeats database for bacterial genomes: application to the genotyping of *Yersinia pestis* and *Bacillus anthracis*. *BMC Microbiol* **1**:2.
This paper reports the identification of specific sequences in the genome of the bacterium that could be used for diagnostics.
18. **Lindler, L. E., W. Fan, and N. Jahan.** 2001. Detection of ciprofloxacin-resistant *Yersinia pestis* by fluorogenic PCR using the LightCycler. *J Clin Microbiol* **39**:3649-55.
This paper reports the isolation of a strain of the bacterium that is resistant to ciprofloxacin.
19. **Matson, J. S., and M. L. Nilles.** 2001. LcrG-LcrV interaction is required for control of Yops secretion in *Yersinia pestis*. *J Bacteriol* **183**:5082-91.
This paper reports the identification of a protein-protein interaction necessary for the secretion of a virulence factor of the bacterium.
20. **Radnedge, L., S. Gamez-Chin, P. M. McCready, P. L. Worsham, and G. L. Andersen.** 2001. Identification of nucleotide sequences for the specific and rapid detection of *Yersinia pestis*. *Appl Environ Microbiol* **67**:3759-62.
This paper reports the identification of specific sequences in the genome of the bacterium that could be used for diagnostics.
21. **Rossi, M. S., J. D. Fetherston, S. Letoffe, E. Carniel, R. D. Perry, and J. M. Ghigo.** 2001. Identification and characterization of the hemophore-dependent heme acquisition system of *Yersinia pestis*. *Infect Immun* **69**:6707-17.
This paper reports the identification of a heme acquisition system in the bacterium.
22. **Subrahmanyam, Y. V., S. Yamaga, Y. Prashar, H. H. Lee, N. P. Hoe, Y. Kluger, M. Gerstein, J. D. Goguen, P. E. Newburger, and S. M. Weissman.** 2001. RNA expression patterns change dramatically in human neutrophils exposed to bacteria. *Blood* **97**:2457-68.
This paper reports the RNA response of neutrophils after exposure to the bacterium.
23. **Thulasiraman, V., S. L. McCutchen-Maloney, V. L. Motin, and E. Garcia.** 2001. Detection and identification of virulence factors in *Yersinia pestis* using SELDI ProteinChip system. *Biotechniques* **30**:428-32.
This paper reports the detection of virulence factors of the bacterium.

24. **Watson, R. P., T. W. Blanchard, M. G. Mense, and P. W. Gasper.** 2001. Histopathology of experimental plague in cats. *Vet Pathol* **38**:165-72.
This paper reports the pathology of cats infected with the bacterium.
25. **Bobrov, A. G., V. A. Geoffroy, and R. D. Perry.** 2002. Yersiniabactin production requires the thioesterase domain of HMWP2 and YbtD, a putative phosphopantetheinylate transferase. *Infect Immun* **70**:4204-14.
This paper reports the identification of a protein necessary for production of a toxin of the bacterium.
26. **Darby, C., J. W. Hsu, N. Ghori, and S. Falkow.** 2002. *Caenorhabditis elegans*: plague bacteria biofilm blocks food intake. *Nature* **417**:243-4.
This paper reports that the bacterium can produce a biofilm.
27. **Deng, W., V. Burland, G. Plunkett, 3rd, A. Boutin, G. F. Mayhew, P. Liss, N. T. Perna, D. J. Rose, B. Mau, S. Zhou, D. C. Schwartz, J. D. Fetherston, L. E. Lindler, R. R. Brubaker, G. V. Plano, S. C. Straley, K. A. McDonough, M. L. Nilles, J. S. Matson, F. R. Blattner, and R. D. Perry.** 2002. Genome sequence of *Yersinia pestis* KIM. *J Bacteriol* **184**:4601-11.
This paper reports the genomic sequence of the bacterium.
28. **Gonzalez, M. D., C. A. Lichtensteiger, R. Caughlan, and E. R. Vimr.** 2002. Conserved filamentous prophage in *Escherichia coli* O18:K1:H7 and *Yersinia pestis* biovar orientalis. *J Bacteriol* **184**:6050-5.
This paper reports the identification of a virus that infects the bacterium.
29. **Hinnebusch, B. J., M. L. Rosso, T. G. Schwan, and E. Carniel.** 2002. High-frequency conjugative transfer of antibiotic resistance genes to *Yersinia pestis* in the flea midgut. *Mol Microbiol* **46**:349-54.
This paper reports the transfer of antibiotic resistance genes between cells of the bacterium within fleas.
30. **Hinnebusch, B. J., A. E. Rudolph, P. Cherepanov, J. E. Dixon, T. G. Schwan, and A. Forsberg.** 2002. Role of *Yersinia murine* toxin in survival of *Yersinia pestis* in the midgut of the flea vector. *Science* **296**:733-5.
This paper reports the important of a toxin of the bacterium for its survival within fleas.
31. **Huang, X. Z., M. C. Chu, D. M. Engelthaler, and L. E. Lindler.** 2002. Genotyping of a homogeneous group of *Yersinia pestis* strains isolated in the United States. *J Clin Microbiol* **40**:1164-73.
This paper describes the phylogenetic relationships of different strains of the bacterium.
32. **Hurtle, W., D. Shoemaker, E. Henchal, and D. Norwood.** 2002. Denaturing HPLC for identifying bacteria. *Biotechniques* **33**:386-8, 390-1.
This paper reports a detection method.
33. **Matson, J. S., and M. L. Nilles.** 2002. Interaction of the *Yersinia pestis* type III regulatory proteins LcrG and LcrV occurs at a hydrophobic interface. *BMC Microbiol* **2**:16.
This paper reports the interaction of two proteins of the bacterium.
34. **Motin, V. L., A. M. Georgescu, J. M. Elliott, P. Hu, P. L. Worsham, L. L. Ott, T. R. Slezak, B. A. Sokhansanj, W. M. Regala, R. R. Brubaker, and E. Garcia.** 2002. Genetic variability of *Yersinia pestis* isolates as predicted by PCR-based IS100

- genotyping and analysis of structural genes encoding glycerol-3-phosphate dehydrogenase (glpD). *J Bacteriol* **184**:1019-27.
This paper reports phylogenetic relationships between strains of the bacterium.
35. **Radnedge, L., P. G. Agron, P. L. Worsham, and G. L. Andersen.** 2002. Genome plasticity in *Yersinia pestis*. *Microbiology* **148**:1687-98.
This paper reports sequence differences in different strains of the bacterium.
36. **Weeks, S., J. Hill, A. Friedlander, and S. Welkos.** 2002. Anti-V antigen antibody protects macrophages from *Yersinia pestis* -induced cell death and promotes phagocytosis. *Microb Pathog* **32**:227-37.
This paper reports the evaluation of an antibody against the bacterium.
37. **Welkos, S., M. L. Pitt, M. Martinez, A. Friedlander, P. Vogel, and R. Tammariello.** 2002. Determination of the virulence of the pigmentation-deficient and pigmentation-/plasminogen activator-deficient strains of *Yersinia pestis* in non-human primate and mouse models of pneumonic plague. *Vaccine* **20**:2206-14.
This paper reports a comparison of the virulence of different strains of the bacterium.
38. **Wulff-Strobel, C. R., A. W. Williams, and S. C. Straley.** 2002. LcrQ and SycH function together at the Ysc type III secretion system in *Yersinia pestis* to impose a hierarchy of secretion. *Mol Microbiol* **43**:411-23.
This paper reports the function of two proteins of the bacterium.
39. **Zhou, S., W. Deng, T. S. Anantharaman, A. Lim, E. T. Dimalanta, J. Wang, T. Wu, T. Chunhong, R. Creighton, A. Kile, E. Kvikstad, M. Bechner, G. Yen, A. Garic-Stankovic, J. Severin, D. Forrest, R. Runnheim, C. Churas, C. Lamers, N. T. Perna, V. Burland, F. R. Blattner, B. Mishra, and D. C. Schwartz.** 2002. A whole-genome shotgun optical map of *Yersinia pestis* strain KIM. *Appl Environ Microbiol* **68**:6321-31.
This paper reports the a map of the genome of the bacterium.
40. **Day, J. B., F. Ferracci, and G. V. Plano.** 2003. Translocation of YopE and YopN into eukaryotic cells by *Yersinia pestis* yopN, tyeA, sycN, yscB and lcrG deletion mutants measured using a phosphorylatable peptide tag and phosphospecific antibodies. *Mol Microbiol* **47**:807-23.
This paper reports specifics on the transport of certain proteins from the bacterium into eukaryotic cells.
41. **Frean, J., K. P. Klugman, L. Arntzen, and S. Bukofzer.** 2003. Susceptibility of *Yersinia pestis* to novel and conventional antimicrobial agents. *J Antimicrob Chemother* **52**:294-6.
This paper reports the antibiotic susceptibility of the bacterium.
42. **Garcia, E., J. M. Elliott, E. Ramanculov, P. S. Chain, M. C. Chu, and I. J. Molineux.** 2003. The genome sequence of *Yersinia pestis* bacteriophage phiA1122 reveals an intimate history with the coliphage T3 and T7 genomes. *J Bacteriol* **185**:5248-62.
This paper reports the sequence of a virus of the bacterium.
43. **Hurtle, W., L. Lindler, W. Fan, D. Shoemaker, E. Henchal, and D. Norwood.** 2003. Detection and identification of ciprofloxacin-resistant *Yersinia pestis* by denaturing high-performance liquid chromatography. *J Clin Microbiol* **41**:3273-83.
This paper reports a diagnostic method to detect strains of the bacterium that are resistant to ciprofloxacin.

44. **Lindler, L. E., and W. Fan.** 2003. Development of a 5' nuclease assay to detect ciprofloxacin resistant isolates of the biowarfare agent *Yersinia pestis*. *Mol Cell Probes* **17**:41-7.
This paper reports a diagnostic method to detect strains of the bacterium that are resistant to ciprofloxacin.
45. **McAvin, J. C., M. A. McConathy, A. J. Rohrer, W. B. Huff, W. J. Barnes, and K. L. Lohman.** 2003. A real-time fluorescence polymerase chain reaction assay for the identification of *Yersinia pestis* using a field-deployable thermocycler. *Mil Med* **168**:852-5.
This paper reports the development of a detection system.
46. **Osorio, J. E., T. D. Powell, R. S. Frank, K. Moss, E. J. Haanes, S. R. Smith, T. E. Rocke, and D. T. Stinchcomb.** 2003. Recombinant raccoon pox vaccine protects mice against lethal plague. *Vaccine* **21**:1232-8.
This paper reports a vaccine candidate.
47. **Perry, R. D., J. Shah, S. W. Bearden, J. M. Thompson, and J. D. Fetherston.** 2003. *Yersinia pestis* TonB: role in iron, heme, and hemoprotein utilization. *Infect Immun* **71**:4159-62.
This paper reports the characterization of the role of an iron-acquisition protein of the bacterium.
48. **Pujol, C., and J. B. Bliska.** 2003. The ability to replicate in macrophages is conserved between *Yersinia pestis* and *Yersinia pseudotuberculosis*. *Infect Immun* **71**:5892-9.
This paper reports the ability of the bacterium to replicate in macrophages.
49. **Rider, T. H., M. S. Petrovick, F. E. Nargi, J. D. Harper, E. D. Schwoebel, R. H. Mathews, D. J. Blanchard, L. T. Bortolin, A. M. Young, J. Chen, and M. A. Hollis.** 2003. A B cell-based sensor for rapid identification of pathogens. *Science* **301**:213-5.
This paper reports the development of a detection system.
50. **Rose, L. J., R. Donlan, S. N. Banerjee, and M. J. Arduino.** 2003. Survival of *Yersinia pestis* on environmental surfaces. *Appl Environ Microbiol* **69**:2166-71.
This paper reports statistics on the survival of the bacterium on different surfaces.
51. **Skrzypek, E., T. Myers-Morales, S. W. Whiteheart, and S. C. Straley.** 2003. Application of a *Saccharomyces cerevisiae* model to study requirements for trafficking of *Yersinia pestis* YopM in eucaryotic cells. *Infect Immun* **71**:937-47.
This paper reports specifics on the transports of proteins from the bacterium into eukaryotic cells.
52. **Stevenson, H. L., Y. Bai, M. Y. Kosoy, J. A. Monteneri, J. L. Lowell, M. C. Chu, and K. L. Gage.** 2003. Detection of novel *Bartonella* strains and *Yersinia pestis* in prairie dogs and their fleas (Siphonaptera: Ceratophyllidae and Pulicidae) using multiplex polymerase chain reaction. *J Med Entomol* **40**:329-37.
This paper reports the evaluation of a detection system.
53. **Chain, P. S., E. Carniel, F. W. Larimer, J. Lamerdin, P. O. Stoutland, W. M. Regala, A. M. Georgescu, L. M. Vergez, M. L. Land, V. L. Motin, R. R. Brubaker, J. Fowler, J. Hinnebusch, M. Marceau, C. Medigue, M. Simonet, V. Chenal-Francisque, B. Souza, D. Dacheux, J. M. Elliott, A. Derbise, L. J. Hauser, and E. Garcia.** 2004.

Insights into the evolution of *Yersinia pestis* through whole-genome comparison with *Yersinia pseudotuberculosis*. *Proc Natl Acad Sci U S A* **101**:13826-31.

This paper reports the comparison of the genome of the bacterium with that of a close relative.

54. **Chromy, B. A., J. Perkins, J. L. Heidbrink, A. D. Gonzales, G. A. Murphy, J. P. Fitch, and S. L. McCutchen-Maloney.** 2004. Proteomic characterization of host response to *Yersinia pestis* and near neighbors. *Biochem Biophys Res Commun* **320**:474-9.
This paper reports the proteomic response of eukaryotic cells to infection with the bacterium.
55. **Coyne, S. R., P. D. Craw, D. A. Norwood, and M. P. Ulrich.** 2004. Comparative analysis of the Schleicher and Schuell IsoCode Stix DNA isolation device and the Qiagen QIAamp DNA Mini Kit. *J Clin Microbiol* **42**:4859-62.
This protein reports the comparison of isolation devices.
56. **Eggers, C. T., I. A. Murray, V. A. Delmar, A. G. Day, and C. S. Craik.** 2004. The periplasmic serine protease inhibitor ecotin protects bacteria against neutrophil elastase. *Biochem J* **379**:107-18.
This paper reports a host factor that protects the bacterium from the immune system.
57. **Elvin, S. J., E. D. Williamson, J. C. Scott, J. N. Smith, G. Perez De Lema, S. Chilla, P. Clapham, K. Pfeffer, D. Schlondorff, and B. Luckow.** 2004. Evolutionary genetics: Ambiguous role of CCR5 in *Y. pestis* infection. *Nature* **430**:417.
This paper discusses the significance of a host cell-surface protein in infection with the bacterium
58. **Ferracci, F., J. B. Day, H. J. Ezelle, and G. V. Plano.** 2004. Expression of a functional secreted YopN-TyeA hybrid protein in *Yersinia pestis* is the result of a +1 translational frameshift event. *J Bacteriol* **186**:5160-6.
This paper reports how a certain protein of the bacterium is expressed.
59. **Forde, C. E., J. M. Rocco, J. P. Fitch, and S. L. McCutchen-Maloney.** 2004. Real-time characterization of virulence factor expression in *Yersinia pestis* using a GFP reporter system. *Biochem Biophys Res Commun* **324**:795-800.
This paper reports the characterization of virulence factor expression of the bacterium.
60. **Grabenstein, J. P., M. Marceau, C. Pujol, M. Simonet, and J. B. Bliska.** 2004. The response regulator PhoP of *Yersinia pseudotuberculosis* is important for replication in macrophages and for virulence. *Infect Immun* **72**:4973-84.
This paper reports the characterization of a replication protein of the bacterium.
61. **Hammamieh, R., S. Bi, R. Das, R. Neill, and M. Jett.** 2004. Modeling of SEB-induced host gene expression to correlate in vitro to in vivo responses. *Biosens Bioelectron* **20**:719-27.
This paper reports the gene expression profile of peripheral blood mononuclear cells after infection with the bacterium.
62. **Huang, X. Z., and L. E. Lindler.** 2004. The pH 6 antigen is an antiphagocytic factor produced by *Yersinia pestis* independent of *Yersinia* outer proteins and capsule antigen. *Infect Immun* **72**:7212-9.
This paper reports the identification of an antiphagocytic factor of the bacterium.

63. **Jackson, M. W., E. Silva-Herzog, and G. V. Plano.** 2004. The ATP-dependent ClpXP and Lon proteases regulate expression of the *Yersinia pestis* type III secretion system via regulated proteolysis of YmoA, a small histone-like protein. *Mol Microbiol* **54**:1364-78.
This paper reports the identification of regulators of a secretion system of the bacterium.
64. **Jarrett, C. O., E. Deak, K. E. Isherwood, P. C. Oyston, E. R. Fischer, A. R. Whitney, S. D. Kobayashi, F. R. DeLeo, and B. J. Hinnebusch.** 2004. Transmission of *Yersinia pestis* from an infectious biofilm in the flea vector. *J Infect Dis* **190**:783-92.
This paper reports the transmission of the bacterium from a biofilm to a flea.
65. **Jarrett, C. O., F. Sebbane, J. J. Adamovicz, G. P. Andrews, and B. J. Hinnebusch.** 2004. Flea-borne transmission model to evaluate vaccine efficacy against naturally acquired bubonic plague. *Infect Immun* **72**:2052-6.
This paper reports a transmission model and a vaccine candidate.
66. **Kerschen, E. J., D. A. Cohen, A. M. Kaplan, and S. C. Straley.** 2004. The plague virulence protein YopM targets the innate immune response by causing a global depletion of NK cells. *Infect Immun* **72**:4589-602.
This paper reports the identification of a protein of the bacterium that counters the innate immune response of the host.
67. **Mecas, J., G. Franklin, W. A. Kuziel, R. R. Brubaker, S. Falkow, and D. E. Mosier.** 2004. Evolutionary genetics: CCR5 mutation and plague protection. *Nature* **427**:606.
This paper reports a relationship between a gene mutation and protection from infection with the bacterium.
68. **Mencher, J. S., S. R. Smith, T. D. Powell, D. T. Stinchcomb, J. E. Osorio, and T. E. Rocke.** 2004. Protection of black-tailed prairie dogs (*Cynomys ludovicianus*) against plague after voluntary consumption of baits containing recombinant raccoon poxvirus vaccine. *Infect Immun* **72**:5502-5.
This paper reports the evaluation of a vaccine candidate.
69. **Motin, V. L., A. M. Georgescu, J. P. Fitch, P. P. Gu, D. O. Nelson, S. L. Mabery, J. B. Garnham, B. A. Sokhansanj, L. L. Ott, M. A. Coleman, J. M. Elliott, L. M. Kegelmeyer, A. J. Wyrobek, T. R. Slezak, R. R. Brubaker, and E. Garcia.** 2004. Temporal global changes in gene expression during temperature transition in *Yersinia pestis*. *J Bacteriol* **186**:6298-305.
This paper reports the overall change of gene expression in the bacterium according to temperature.
70. **Perry, R. D., A. G. Bobrov, O. Kirillina, H. A. Jones, L. Pedersen, J. Abney, and J. D. Fetherston.** 2004. Temperature regulation of the hemin storage (Hms⁺) phenotype of *Yersinia pestis* is posttranscriptional. *J Bacteriol* **186**:1638-47.
This paper reports the regulation of hemine storage in the bacterium and its temperature dependence.
71. **Rebeil, R., R. K. Ernst, B. B. Gowen, S. I. Miller, and B. J. Hinnebusch.** 2004. Variation in lipid A structure in the pathogenic yersiniae. *Mol Microbiol* **52**:1363-73.
This paper reports structures of lipid envelope components of the bacterium and its relatives.

72. **Rocke, T. E., J. Mencher, S. R. Smith, A. M. Friedlander, G. P. Andrews, and L. A. Baeten.** 2004. Recombinant F1-V fusion protein protects black-footed ferrets (*Mustela nigripes*) against virulent *Yersinia pestis* infection. *J Zoo Wildl Med* **35**:142-6.
This paper reports a vaccine candidate.
73. **Saikh, K. U., T. L. Kissner, A. Sultana, G. Ruthel, and R. G. Ulrich.** 2004. Human monocytes infected with *Yersinia pestis* express cell surface TLR9 and differentiate into dendritic cells. *J Immunol* **173**:7426-34.
This paper reports the response of monocytes infected with the bacterium.
74. **Sebbane, F., C. O. Jarrett, J. R. Linkenhoker, and B. J. Hinnebusch.** 2004. Evaluation of the role of constitutive isocitrate lyase activity in *Yersinia pestis* infection of the flea vector and mammalian host. *Infect Immun* **72**:7334-7.
This paper reports the characterization of an enzyme of the bacterium.
75. **Tan, L., and C. Darby.** 2004. A movable surface: formation of *Yersinia* sp. biofilms on motile *Caenorhabditis elegans*. *J Bacteriol* **186**:5087-92.
This paper reports the synthesis of biofilms by the bacterium on a nematode.
76. **Varma-Basil, M., H. El-Hajj, S. A. Marras, M. H. Hazbon, J. M. Mann, N. D. Connell, F. R. Kramer, and D. Alland.** 2004. Molecular beacons for multiplex detection of four bacterial bioterrorism agents. *Clin Chem* **50**:1060-2.
This protein reports a detection system.
77. **Wang, S., D. Heilman, F. Liu, T. Giehl, S. Joshi, X. Huang, T. H. Chou, J. Goguen, and S. Lu.** 2004. A DNA vaccine producing LcrV antigen in oligomers is effective in protecting mice from lethal mucosal challenge of plague. *Vaccine* **22**:3348-57.
This paper reports the evaluation of a vaccine candidate.
78. **Welkos, S. L., G. P. Andrews, L. E. Lindler, N. J. Snellings, and S. D. Strachan.** 2004. Mu dII(Ap lac) mutagenesis of *Yersinia pestis* plasmid pFra and identification of temperature-regulated loci associated with virulence. *Plasmid* **51**:1-11.
This paper reports the identification of genomic sequences of the bacterium that are determining virulence.
79. **Achtman, M., G. Morelli, P. Zhu, T. Wirth, I. Diehl, B. Kusecek, A. J. Vogler, D. M. Wagner, C. J. Allender, W. R. Easterday, V. Chenal-Francisque, P. Worsham, N. R. Thomson, J. Parkhill, L. E. Lindler, E. Carniel, and P. Keim.** 2004. Microevolution and history of the plague bacillus, *Yersinia pestis*. *Proc Natl Acad Sci U S A* **101**:17837-42.
This paper reports specifics on the history of the bacterium.
80. **Kirillina, O., J. D. Fetherston, A. G. Bobrov, J. Abney, and R. D. Perry.** 2004. HmsP, a putative phosphodiesterase, and HmsT, a putative diguanylate cyclase, control Hms-dependent biofilm formation in *Yersinia pestis*. *Mol Microbiol* **54**:75-88.
This paper reports the identification of two proteins of the bacterium that aid in the formation of biofilms.
This paper reports the identification of a protein of the bacterium that is important for biofilm synthesis.
81. **Gomes-Solecki, M. J., A. G. Savitt, R. Rowehl, J. D. Glass, J. B. Bliska, and R. J. Dattwyler.** 2005. LcrV capture enzyme-linked immunosorbent assay for detection of *Yersinia pestis* from human samples. *Clin Diagn Lab Immunol* **12**:339-46.

- This paper reports a detection method.
82. **Goodin, J. L., R. W. Raab, R. L. McKown, G. L. Coffman, B. S. Powell, J. T. Enama, J. A. Ligon, and G. P. Andrews.** 2005. Yersinia pestis outer membrane type III secretion protein YscC: expression, purification, characterization, and induction of specific antiserum. *Protein Expr Purif* **40**:152-63.
This paper reports the characterization of a protein of the bacterium that is involved in a secretion system.
83. **Knirel, Y. A., B. Lindner, E. V. Vinogradov, N. A. Kocharova, S. N. Senchenkova, R. Z. Shaikhutdinova, S. V. Dentovskaya, N. K. Fursova, I. V. Bakhteeva, G. M. Titareva, S. V. Balakhonov, O. Holst, T. A. Gremyakova, G. B. Pier, and A. P. Anisimov.** 2005. Temperature-Dependent Variations and Intraspecies Diversity of the Structure of the Lipopolysaccharide of Yersinia pestis. *Biochemistry* **44**:1731-1743.
This paper reports variations of an envelope component of the bacterium.
84. **Lowell, J. L., D. M. Wagner, B. Atshabar, M. F. Antolin, A. J. Vogler, P. Keim, M. C. Chu, and K. L. Gage.** 2005. Identifying sources of human exposure to plague. *J Clin Microbiol* **43**:650-6.
This paper reports the development of a system to differentiate different strains of the bacterium.
85. **Philipovski, A. V., C. Cowan, C. R. Wulff-Strobel, S. H. Burnett, E. J. Kerschen, D. A. Cohen, A. M. Kaplan, and S. C. Straley.** 2005. Antibody against V antigen prevents Yop-dependent growth of Yersinia pestis. *Infect Immun* **73**:1532-42.
This paper reports the inhibitory effect of a novel antibody on growth of the bacterium.
86. **Rosenzweig, J. A., G. Weltman, G. V. Plano, and K. Schesser.** 2005. Modulation of yersinia type three secretion system by the S1 domain of polynucleotide phosphorylase. *J Biol Chem* **280**:156-63.
This paper reports the effect of a part of a protein on the secretion system of the bacterium.
87. **Schubot, F. D., M. W. Jackson, K. J. Penrose, S. Cherry, J. E. Tropea, G. V. Plano, and D. S. Waugh.** 2005. Three-dimensional structure of a macromolecular assembly that regulates type III secretion in Yersinia pestis. *J Mol Biol* **346**:1147-61.
This paper reports the structure of a secretion system of the bacterium.
88. **Sebbane, F., D. Gardner, D. Long, B. B. Gowen, and B. J. Hinnebusch.** 2005. Kinetics of disease progression and host response in a rat model of bubonic plague. *Am J Pathol* **166**:1427-39.
This paper reports the development and evaluation of a rat model for plague.
89. **Winfield, M. D., T. Latifi, and E. A. Groisman.** 2005. Transcriptional regulation of the 4-amino-4-deoxy-L-arabinose biosynthetic genes in Yersinia pestis. *J Biol Chem* **280**:14765-72.
This paper reports the transcriptional regulation of a metabolic pathway of the bacterium.
90. **Zhang, C. G., A. D. Gonzales, M. W. Choi, B. A. Chromy, J. P. Fitch, and S. L. McCutchen-Maloney.** 2005. Subcellular proteomic analysis of host-pathogen interactions using human monocytes exposed to Yersinia pestis and Yersinia pseudotuberculosis. *Proteomics*. In press.
This paper reports the proteomic response of macrophages infected with the bacterium.

NIH Grants:

1	93	1R01AI048506-01	ZHANG, ZHONG-YIN	<u>YERSINIA PTPASE INHIBITORS AS ANTI-PLAGUE AGENTS</u>
Total: \$1,265,384			<ul style="list-style-type: none"> • \$334,000 2003 Zhang, Zhongyin YESHIVA UNIVERSITY NEW YORK, NY • \$317,300 2002 Zhang, Zhong-Yin YESHIVA UNIVERSITY NEW YORK, NY • \$334,917 2001 Zhang, Zhong-Yin YESHIVA UNIVERSITY NEW YORK, NY • \$279,167 2000 ZHANG, ZHONG-YIN YESHIVA UNIVERSITY NEW YORK, NY 	
2	90	1U19AI056578-010003	NATARO, JAMES	<u>A Salmonella-based Plague Vaccine</u>
Total: \$4,457,410 *			<ul style="list-style-type: none"> • \$1,930,417 2005 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$1,881,608 2004 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD • \$645,385 2003 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
3	90	1R03AI055545-01	SCHNEEWIND, OLAF	<u>The Type III Pathway of Yersinia Pestis</u>
Total: \$152,500			<ul style="list-style-type: none"> • \$76,250 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$76,250 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 	
4	80	1R21AI053114-01	MUSTELIN, TOMAS	<u>Molecular mechanism of immune evasion by Yersinia pestis</u>
Total: \$585,000			<ul style="list-style-type: none"> • \$292,500 2003 Mustelin, Tomas M BURNHAM INSTITUTE LA JOLLA, CA • \$292,500 2002 Mustelin, Tomas BURNHAM INSTITUTE SAN DIEGO, CA 	
5	77	1U54AI057153-010004	BRUBAKER, ROBERT	<u>Immunity to Yersinia Pestis Infections</u>
Total: \$20,734,800			<ul style="list-style-type: none"> • \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 	
6	77	1R43AI060279-	LI, XING-XIANG	<u>A Rapid, Sensitive and Fully</u>

		01		<u>Automated <i>Y. pestis</i> Test</u>
Total: \$549,084			<ul style="list-style-type: none"> \$194,426 2005 Li, Xingxiang CELLEX, INC. ROCKVILLE, MD \$354,658 2004 Li, Xingxiang CELLEX, INC. ROCKVILLE, MD 	
7	77	1R21AI053298-01	MILLER, VIRGINIA	<u>RovA regulon of <i>Yersinia pestis</i></u>
Total: \$301,866			<ul style="list-style-type: none"> \$153,000 2003 Miller, Virginia L MISSOURI WESTERN STATE COLLEGE ST. JOSEPH, MO \$148,866 2002 Miller, Virginia L VIRRX, INC. ST. LOUIS, MO 	
8	77	1U01AI061172-01	STOKOWSKI, RENEE	<u>Signature SNPs to distinguish <i>Yersinia pestis</i> strains</u>
Total: \$1,659,385			<ul style="list-style-type: none"> \$1,659,385 2005 Stokowski, Renee P PERLEGEN SCIENCES, INC. MOUNTAIN VIEW, CA 	
9	66	1R21AI053759-01	BLISKA, JAMES	<u>Microarray Analysis of Plaque-Induced Apoptosis</u>
Total: \$225,750			<ul style="list-style-type: none"> \$112,875 2003 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$112,875 2002 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
10	66	1U54AI057160-010011	GOLDMAN, WILLIAM	<u>Early Events in the Pathogenesis of Pneumonia Plaque</u>
Total: \$18,865,686 *			<ul style="list-style-type: none"> \$7,627,721 2005 Stanley, Samuel L ORION GENOMICS, LLC ST. LOUIS, MO \$7,894,128 2004 Stanley, Samuel L JACOBS FACILITIES, INC. ST LOUIS, MO \$3,343,837 2003 Stanley, Samuel L MISSOURI WESTERN STATE COLLEGE ST. JOSEPH, MO 	
11	64	1R01AI057512-01A1	DARBY, CREG	<u><i>Yersinia pestis</i> biofilms on <i>C. elegans</i></u>
Total: \$290,000			<ul style="list-style-type: none"> \$290,000 2004 Darby, Creg B UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
12	64	1R21AI061606-01	MCDONOUGH, KATHLEEN	<u>Differential Gene Expression in <i>Yersinia pestis</i></u>
Total: \$562,824			<ul style="list-style-type: none"> \$289,064 2005 Mcdonough, Kathleen A WADSWORTH CENTER ALBANY, NY \$273,760 2004 Mcdonough, Kathleen A WADSWORTH CENTER ALBANY, NY 	
13	51	1R01AI048507-01A1	BLISKA, JAMES	<u>Intracellular survival determinants of <i>Yersinia pestis</i></u>

Total: \$225,750			<ul style="list-style-type: none"> • \$75,250 2003 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY • \$75,250 2002 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY • \$75,250 2001 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
14	51	1R01AI064389-01	CHOPRA, ASHOK	<u>Identification of New Antigens for a Plague Vaccine</u>
Total: \$377,500			<ul style="list-style-type: none"> • \$377,500 2005 Chopra, Ashok K UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX 	
15	51	1R01AI055652-01A2	DATTWYLER, RAYMOND	<u>Antigen Capture Assays for Rapid Detection of Y. Pestis</u>
Total: \$378,800			<ul style="list-style-type: none"> • \$378,800 2005 Dattwyler, Raymond James NEW YORK MEDICAL COLLEGE VALHALLA, NY 	
16	51	1R21AI059689-01	FROTHINGHAM, RICHARD	<u>Alternative endpoints for plague challenge models</u>
Total: \$249,840			<ul style="list-style-type: none"> • \$249,840 2004 Frothingham, Richard DUKE UNIVERSITY DURHAM, NC 	
17	51	1R21AI053508-01	GARCIA, EMILIO	<u>Unique Genomic Regions of Y pestis in Pathogenesis</u>
Total: \$528,514			<ul style="list-style-type: none"> • \$266,325 2003 Garcia, Emilio UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA • \$262,189 2002 Motin, Vladimir L UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA 	
18	51	1Z01AI000796-05	HINNEBUSCH, B	<u>Transmission Of The Plague Bacillus Yersinia Pestis By F</u>
19	51	1Z01AI000796-06	HINNEBUSCH, B	<u>Transmission Of Yersinia Pestis By Fleas: Molecular Mech</u>
20	51	1Z01AI000796-07	HINNEBUSCH, B	<u>Transmission Of Yersinia Pestis By Fleas: Molecular Mech</u>
21	51	1Z01AI000796-08	HINNEBUSCH, B	<u>Transmission Of Yersinia Pestis By Fleas: Molecular Mech</u>
22	51	1Z01AI000796-04	HINNEBUSCH, BERNARD	<u>TRANSMISSION OF THE PLAGUE BACILLUS YERSINIA PESTIS BY FLEAS--MOLECULAR MECHANIS</u>
23	51	1U54AI057160-010010	HULTGREN, SCOTT	<u>Chaperone/Usher Pathways in Plague</u>
Total: \$18,865,686 *			<ul style="list-style-type: none"> • \$7,627,721 2005 Stanley, Samuel L ORION GENOMICS, LLC ST. LOUIS, MO 	

			<ul style="list-style-type: none"> \$7,894,128 2004 Stanley, Samuel L JACOBS FACILITIES, INC. ST LOUIS, MO \$3,343,837 2003 Stanley, Samuel L MISSOURI WESTERN STATE COLLEGE ST. JOSEPH, MO
24	51	1R21EB000981-01	LAKOWICZ, JOSEPH <u>Biohazard Detection Using Metal-Enhanced Fluorescence</u>
Total: \$445,500			<ul style="list-style-type: none"> \$222,750 2003 Lakowicz, Joseph R UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$222,750 2002 Lakowicz, Joseph R UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD
25	51	1R43AI063616-01	LING, LOSEE <u>Developing Novel Antibiotics Against Yersinia pestis</u>
Total: \$537,798			<ul style="list-style-type: none"> \$304,709 2005 Ling, Losee Lucy NOVOBIOTIC PHARMACEUTICALS, LLC CAMBRIDGE, MA \$233,089 2004 Ling, Losee Lucy NOVOBIOTIC PHARMACEUTICALS, LLC CAMBRIDGE, MA
26	51	1R21AI064313-01	MILLER, VIRGINIA <u>Autotransporter proteins and virulence of Y. pestis</u>
Total: \$306,000			<ul style="list-style-type: none"> \$306,000 2005 Miller, Virginia L ORION GENOMICS, LLC ST. LOUIS, MO
27	51	1F32AI062012-01A1	PARENT, MICHELLE <u>CD4+ T cell protection against pneumonic plague</u>
Total: \$48,296			<ul style="list-style-type: none"> \$48,296 2005 Parent, Michelle A TRUDEAU INSTITUTE, INC. SARANAC LAKE, NY
28	51	2R01AI033481-10	PERRY, ROBERT <u>Iron Transport and Regulation in Yersinia Pestis</u>
Total: \$1,426,243			<ul style="list-style-type: none"> \$294,600 2005 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$294,450 2004 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$293,500 2003 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$301,625 2001 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$242,068 2000 PERRY, ROBERT D UNIVERSITY OF KENTUCKY LEXINGTON, KY
29	51	1R21AI053343-01A1	SCHIFFERLI, DIETER <u>Function and immunogenicity of Yersinia pestis fimbriae</u>
Total: \$634,000			<ul style="list-style-type: none"> \$317,000 2005 Schifferli, Dieter M UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA \$317,000 2004 Schifferli, Dieter M UNIVERSITY OF PENNSYLVANIA

			PHILADELPHIA, PA	
30	51	1U54AI057159-010002	STARNBACH, MICHAEL	<u>Mediators and Inhibitors of Immunity to Yersinia pestis</u>
Total: \$26,169,985			<ul style="list-style-type: none"> \$10,173,756 2005 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$11,843,830 2004 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$4,152,399 2003 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA 	
31	51	1U54AI057157-010004	STRALEY, SUSAN	<u>Pathogenesis and Vaccine Development for Plague</u>
Total: \$24,284,241 *			<ul style="list-style-type: none"> \$10,247,734 2005 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$9,829,455 2004 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC \$4,207,052 2003 Haynes, Barton F DUKE UNIVERSITY DURHAM, NC 	
32	51	1Z01BC010342-01	WAUGH, DAVID	<u>STRUCTURAL BIOLOGY OF VIRULENCE IN BIOTERRORISM</u>
33	51	1Z01BC010342-02	WAUGH, DAVID	<u>Structural Genomics of the Yersinia Yop Virulon</u>
34	51	1Z01BC010342-03	WAUGH, DAVID	<u>Structural Proteomics of the Yersinia Yop Virulon</u>
35	51	1Z01BC010342-04	WAUGH, DAVID	<u>Structural Proteomics of the Yersinia Yop Virulon</u>
36	51	1Z01BC010342-05	WAUGH, DAVID	<u>Structural Proteomics of the Yersinia Yop Virulon</u>
37	40	1R43AI052902-01	GLASS, JOHN	<u>A Rapid Immunoassay for Detection of Yersinia Pathogens</u>
Total: \$143,157			<ul style="list-style-type: none"> \$143,157 2002 Glass, John D BIOPEPTIDES, INC. STONY BROOK, NY 	
38	40	1R21AI053809-01	SILVERMAN, NEAL	<u>Genetic and molecular analysis of Yersinia YopJ</u>
Total: \$477,000			<ul style="list-style-type: none"> \$238,500 2003 Silverman, Neal S UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA \$238,500 2002 Silverman, Neal S UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	
39	40	1R21AI058123-01	VUORI, KRISTIINA	<u>Mechanism of anti-phagocytosis by Yersinia pestis</u>
Total: \$764,000			<ul style="list-style-type: none"> \$382,000 2005 Vuori, Kristiina BURNHAM INSTITUTE LA JOLLA, CA \$382,000 2004 Vuori, Kristiina BURNHAM INSTITUTE LA JOLLA, CA 	

40	38	1R21EB000984-01	AUSTIN, DAVID	<u>Rapid Identification of Drug Targets in <i>Yersinia pestis</i></u>
Total: \$458,404			<ul style="list-style-type: none"> \$228,849 2003 Austin, David J YALE UNIVERSITY NEW HAVEN, CT \$229,555 2002 Austin, David J YALE UNIVERSITY NEW HAVEN, CT 	
41	38	1R03AI054435-01	BARBIERI, JOSEPH	<u>Molecular properties of <i>Yersinia YopT</i></u>
Total: \$150,000			<ul style="list-style-type: none"> \$75,000 2004 Barbieri, Joseph T MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$75,000 2003 Barbieri, Joseph T MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI 	
42	38	1Z01BC006198-15	BURKE, TERRENCE	<u>Inhibitors of Tyrosine Kinase-Dependent Signalling as An</u>
43	38	1R43AI056706-01	CLARKE, JEAN	<u>Polymer-Based <i>Yersinia Pestis</i> Point-of-Case Diagnostics</u>
Total: \$1,000,000			<ul style="list-style-type: none"> \$500,000 2004 Clarke, Jean M NOMADICS, INC. STILLWATER, OK \$500,000 2003 Clarke, Jean M NOMADICS, INC. STILLWATER, OK 	
44	38	1R41AI052958-01	CRAMER, CAROLE	<u>NASALLY-DELIVERED MUCOSAL SUBUNIT VACCINE FOR PLAGUE</u>
Total: \$198,456			<ul style="list-style-type: none"> \$198,456 2002 Cramer, Carole L BIODEFENSE TECHNOLOGIES, INC. BLACKSBURG, VA 	
45	38	1P01AI056293-010002	CRYSTAL, RONALD	<u>VECTOR GENE Y PESTIS VACCINATION & PASSIVE PROTECTION</u>
Total: \$3,474,964 *			<ul style="list-style-type: none"> \$1,388,080 2005 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$1,344,411 2004 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$742,473 2003 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
46	38	1R01AI055844-01	CRYSTAL, RONALD	<u>Anti-<i>Y. pestis</i> Vaccination and Passive Protection</u>
Total: \$1,317,475			<ul style="list-style-type: none"> \$539,468 2005 Boyer, Julie L WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$523,755 2004 Crystal, Ronald G WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$254,252 2003 Crystal, Ronald G WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
47	38	1R01AI057885-01	CURTISS, ROY, III	<u>Attenuated Live and Recombinant <i>Yersinia pestis</i> Vaccines</u>

Total: \$1,121,753			<ul style="list-style-type: none"> \$536,769 2005 Curtiss, Royiii Iii ORION GENOMICS, LLC ST. LOUIS, MO \$584,984 2004 Curtiss, Royiii Iii JACOBS FACILITIES, INC. ST LOUIS, MO 	
48	38	1U01AI056480-01	DUNN, JOHN	<u>Rapid Detection and Identification of Zoonotic Pathogens</u>
Total: \$2,387,159			<ul style="list-style-type: none"> \$879,674 2005 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY \$854,379 2004 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY \$653,106 2003 Dunn, John J BROOKHAVEN SCIENCE ASSOC-BROOKHAVEN LAB UPTON, NY 	
49	38	1R21AI053319-01	FETHERSTON, JACQUELINE	<u>Identifying virulence factors in pneumonic plague</u>
Total: \$322,712			<ul style="list-style-type: none"> \$183,812 2003 Fetherston, Jacqueline D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$138,900 2002 Fetherston, Jacqueline D UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
50	38	1R43AI055120-01	GULNIK, SERGEI	<u>Broadly active inhibitors of high priority pathogens</u>
Total: \$802,627			<ul style="list-style-type: none"> \$310,030 2004 Gulnik, Sergei SEQUOIA PHARMACEUTICALS, INC. GAITHERSBURG, MD \$492,597 2003 Gulnik, Sergei SEQUOIA PHARMACEUTICALS, INC. GAITHERSBURG, MD 	
51	38	1U54AI057141-010006	HOVDE, CAROLYN	<u>Vaccine Development</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
52	38	1R01AI066506-01	KNAP, ANIA	<u>Broad Spectrum Agents Against Cat A Bacterial Pathogens</u>
Total: \$1,450,688			<ul style="list-style-type: none"> \$1,450,688 2005 Knap, Ania MAXTHERA, INC. READING, MA 	
53	38	1R21AI059099-01A1	LECHNER, ANDREW	<u>Lung Injury and Shock Pathogenesis in Y. pestis Sepsis</u>
54	38	1R01AI057588-01	LIEN, EGIL	<u>The Role of LPS and Toll-like Receptors in Plague</u>
Total: \$756,060			<ul style="list-style-type: none"> \$373,900 2005 Lien, Egil UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	

			<ul style="list-style-type: none"> \$382,160 2004 Lien, Egil UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA
55	38	1Z01BP005026-01	<p>NAKHASI, HIRA</p> <p><u>Molecular Mechanism and Diagnosis of Leishmaniasis</u></p>
56	38	1R01AI056286-01A1	<p>PASCUAL, DAVID</p> <p><u>Mucosal Vaccines for Plague</u></p>
Total: \$592,717			<ul style="list-style-type: none"> \$592,717 2004 Pascual, David W MONTANA STATE UNIVERSITY (BOZEMAN) BOZEMAN, MT
57	38	2R01AI025098-15	<p>PERRY, ROBERT</p> <p><u>Characterization of the Hms phenotype of Yersinia pestis</u></p>
Total: \$969,547			<ul style="list-style-type: none"> \$257,775 2005 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$257,556 2004 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$85,750 2003 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$186,993 2001 Perry, Robert D UNIVERSITY OF KENTUCKY LEXINGTON, KY \$181,473 2000 PERRY, ROBERT D UNIVERSITY OF KENTUCKY LEXINGTON, KY
58	38	2R01AI039575-06	<p>PLANO, GREGORY</p> <p><u>Control of virulence protein export in Yersinia pestis</u></p>
Total: \$1,411,029			<ul style="list-style-type: none"> \$303,000 2005 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL CORAL GABLES, FL \$303,000 2004 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL CORAL GABLES, FL \$26,000 2003 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL Coral Gables, FL \$265,125 2003 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL Coral Gables, FL \$265,125 2002 Plano, Gregory V UNIVERSITY OF MIAMI MIAMI, FL \$248,779 2001 Plano, Gregory V UNIVERSITY OF MIAMI MIAMI, FL
59	38	1R01AI050552-01	<p>PLANO, GREGORY</p> <p><u>Structure of the Yersinia pestis type III export complex</u></p>
Total: \$902,799			<ul style="list-style-type: none"> \$227,250 2004 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL CORAL GABLES, FL \$227,250 2003 Plano, Gregory V UNIVERSITY OF MIAMI-MEDICAL Coral Gables, FL \$193,163 2002 Plano, Gregory V UNIVERSITY OF MIAMI MIAMI, FL \$255,136 2001 Plano, Gregory V UNIVERSITY OF MIAMI MIAMI, FL
60	38	1P01AI056293-010004	<p>QUADRI, LUIS</p> <p><u>NOVEL M. TUBERCULOSIS AND Y. PESTIS GROWTH INHIBITORS</u></p>
Total: \$3,474,964 *			<ul style="list-style-type: none"> \$1,388,080 2005 Nathan, Carl F WEILL MEDICAL COLLEGE OF

				<p>CORNELL UNIV NEW YORK, NY</p> <ul style="list-style-type: none"> \$1,344,411 2004 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$742,473 2003 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY
61	38	1R43AI052872-01A1	REPPY, MARY	<u>New Materials for Plaque Antigen and Antibody Detection</u>
Total: \$98,530			<ul style="list-style-type: none"> \$98,530 2003 Reppy, Mary A ANALYTICAL BIOLOGICAL SERVICES, INC. WILMINGTON, DE 	
62	38	1U54AI057141-010004	SALAMA, NINA	<u>Virulence Factors in the Airway</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
63	38	1R01AI061577-01	SMILEY, STEPHEN	<u>Cell-mediated protection against pneumonic plague</u>
Total: \$737,759			<ul style="list-style-type: none"> \$359,214 2005 Smiley, Stephen T TRUDEAU INSTITUTE, INC. SARANAC LAKE, NY \$378,545 2004 Smiley, Stephen T TRUDEAU INSTITUTE, INC. SARANAC LAKE, NY 	
64	38	2R44AI052926-02	STORHOFF, JAMES	<u>Nanoparticle Probe Assay for Biological Threat Agents</u>
Total: \$374,900			<ul style="list-style-type: none"> \$374,900 2004 Storhoff, James J NANOSPHERE, INC. NORTHBROOK, IL 	
65	38	1R01AI048491-01	STRALEY, SUSAN	<u>Early Events in Pneumonic Plague</u>
Total: \$760,492			<ul style="list-style-type: none"> \$253,400 2002 Straley, Susan C UNIVERSITY OF KENTUCKY LEXINGTON, KY \$253,400 2001 Straley, Susan C UNIVERSITY OF KENTUCKY LEXINGTON, KY \$253,692 2000 STRALEY, SUSAN C UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
66	38	1R21AI061432-01	STRALEY, SUSAN	<u>Surface proteins in pneumonic plague</u>
Total: \$294,600			<ul style="list-style-type: none"> \$294,600 2004 Straley, Susan C UNIVERSITY OF KENTUCKY LEXINGTON, KY 	
67	38	1R43AI056784-	TOTROV, MAXIM	<u>Rational Design of Inhibitors of</u>

		01		<u>Yersinia pestis EF-Tu</u>
Total: \$998,864			<ul style="list-style-type: none"> \$499,432 2004 Totrov, Maxim MOLSOFT, LLC LA JOLLA, CA \$499,432 2003 Totrov, Maxim MOLSOFT, LLC LA JOLLA, CA 	
68	27	1R01AI043389-01A2	BLISKA, JAMES	<u>MODULATION OF HOST SIGNALING FUNCTIONS BY YERSINIA YOPS</u>
Total: \$1,759,478			<ul style="list-style-type: none"> \$343,969 2005 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$300,159 2004 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$291,416 2003 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$282,928 2002 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$274,688 2001 Bliska, James B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$266,318 2000 BLISKA, JAMES B STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
69	27	1F32AI065081-01	BRODSKY, IGOR	<u>Interaction of Yersinia with dendritic cells</u>
Total: \$43,976			<ul style="list-style-type: none"> \$43,976 2005 Brodsky, Igor E YALE UNIVERSITY NEW HAVEN, CT 	
70	27	1R01AI052148-01A1	DARWIN, ANDREW	<u>The Psp response of Yersinia enterocolitica</u>
Total: \$878,400			<ul style="list-style-type: none"> \$338,000 2005 Darwin, Andrew J NEW YORK UNIVERSITY SCHOOL OF MEDICINE NEW YORK, NY \$270,400 2004 Darwin, Andrew J NEW YORK UNIVERSITY SCHOOL OF MEDICINE NEW YORK, NY \$270,000 2003 Darwin, Andrew J NEW YORK UNIVERSITY SCHOOL OF MEDICINE NEW YORK, NY 	
71	27	1U01AI056487-01	DOW, STEVEN	<u>Antigen Presentation and Pulmonary Immunity to Plague</u>
Total: \$1,128,430			<ul style="list-style-type: none"> \$441,176 2005 Dow, Steven W COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO \$428,327 2004 Dow, Steven W COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO \$258,927 2003 Dow, Steven W COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO 	
72	27	1K08AI052176-01	LESSER, CAMMIE	<u>The role of Yersinia YopM in pathogenesis</u>
Total: \$367,993			<ul style="list-style-type: none"> \$124,070 2004 Lesser, Cammie F MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA \$124,070 2003 Lesser, Cammie F MASSACHUSETTS GENERAL HOSPITAL BOSTON, MA \$119,853 2002 Lesser, Cammie F UNIVERSITY OF WASHINGTON 	

			SEATTLE, WA	
73	27	1F32AI054053-01	MCDONALD, CHRISTINE	<u>Host signaling pathways targeted by a Yersinia effector</u>
Total: \$133,882			<ul style="list-style-type: none"> \$38,534 2005 Mcdonald, Christine L UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$48,928 2004 Mcdonald, Christine L UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI \$46,420 2003 Mcdonald, Christine L UNIVERSITY OF MICHIGAN AT ANN ARBOR ANN ARBOR, MI 	
74	27	1R01AI056068-01	MECSAS, JOAN	<u>Yersinia Yops in an Animal Infection Model</u>
Total: \$990,625			<ul style="list-style-type: none"> \$396,250 2005 Mecsas, Joan C TUFTS UNIVERSITY BOSTON BOSTON, MA \$396,250 2004 Mecsas, Joan C TUFTS UNIVERSITY BOSTON BOSTON, MA \$198,125 2003 Mecsas, Joan C TUFTS UNIVERSITY BOSTON BOSTON, MA 	
75	27	1R01AI056404-01	ORTH, KIMBERLY	<u>Biochemical Characterization of Yersinia Effector YopJ</u>
Total: \$636,999			<ul style="list-style-type: none"> \$273,000 2005 Orth, Kimberly A UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$273,000 2004 Orth, Kimberly A UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$90,999 2003 Orth, Kim A UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
76	27	1U19AI056572-010003	STAATS, HERMAN	<u>Anti-TLR Antibodies as Select Agent Vaccine Adjuvants</u>
Total: \$2,635,165			<ul style="list-style-type: none"> \$964,605 2005 Gunn, Michael D DUKE UNIVERSITY DURHAM, NC \$936,517 2004 Gunn, Michael D DUKE UNIVERSITY DURHAM, NC \$734,043 2003 Gunn, Michael D DUKE UNIVERSITY DURHAM, NC 	
77	27	1F32AI060301-01	SWEET, CHARLES	<u>Suppression of innate immune signaling by Yersinia YopJ</u>
Total: \$97,224			<ul style="list-style-type: none"> \$49,928 2005 Sweet, Charles R UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA \$47,296 2004 Sweet, Charles R UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA 	
78	27	1R43AI055073-01	U'REN, JACK	<u>Bacterial Pathogen Amplification & Real-Time Detection</u>
Total: \$99,915			<ul style="list-style-type: none"> \$99,915 2003 Uren, Jack R SAIGENE CORPORATION REDMOND, WA 	

79	26	1R43AI052905-01A1	AFONINA, IRINA	<u>MGB Eclipse Probe Detection of Category A Organisms</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2003 Afonina, Irina A EPOCH BIOSCIENCES, INC. BOTHELL, WA 	
80	26	1P01AI055621-01A1	BENACH, JORGE	<u>Agents of Bioterrorism: Pathogenesis and host defense</u>
Total: \$5,601,602			<ul style="list-style-type: none"> \$2,531,248 2005 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY \$3,070,354 2004 Benach, Jorge L STATE UNIVERSITY NEW YORK STONY BROOK STONY BROOK, NY 	
81	26	1F32AI010507-01	BURKART, MICHAEL	<u>HALOGENATION IN PEPTIDE ANTIBIOTIC BIOSYNTHESIS</u>
Total: \$109,960			<ul style="list-style-type: none"> \$44,212 2002 Burkart, Michael D HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$34,832 2001 Burkart, Michael D HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$30,916 2000 BURKART, MICHAEL D RAZZAQUE A OCULAR PEMPHIGOID--MECHANISM OF PATHOGENESIS 5 R01EY008379-11 AHMED, MA 	
82	26	1Z01BC006198-13	BURKE, TERRENCE	<u>Inhibitors of Tyrosine Kinase-Dependent Signalling as An</u>
83	26	1Z01BC006198-14	BURKE, TERRENCE	<u>Inhibitors of Tyrosine Kinase-Dependent Signalling</u>
84	26	1U54AI057158-010001	CASADEVALL, ARTURO	<u>B cell related prophylaxis and therapeutics</u>
Total: \$21,685,329 *			<ul style="list-style-type: none"> \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY 	
85	26	1R21AI055013-01	CLEMENTS, JOHN	<u>Combinatorial vaccines against anthrax and plague</u>
Total: \$610,500			<ul style="list-style-type: none"> \$313,500 2004 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$297,000 2003 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	
86	26	1U54AI057158-010002	CRYSTAL, RONALD	<u>Vaccine Platforms</u>
Total: \$21,685,329 *			<ul style="list-style-type: none"> \$8,996,537 2005 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY \$8,717,880 2004 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, 	

			<p>NY</p> <ul style="list-style-type: none"> \$3,970,912 2003 Lipkin, Walter Ian WADSWORTH CENTER ALBANY, NY
87	26	1U01AI057315-01	<p>DRMANAC, RADOJE</p> <p><u>Comprehensive pathogen diagnostics with rSBH system</u></p>
<p>Total: \$2,305,894</p>			<ul style="list-style-type: none"> \$725,838 2005 Drmanac, Radoje CALLIDA GENOMICS, INC. SUNNYVALE, CA \$903,169 2004 Drmanac, Radoje CALLIDA GENOMICS, INC. SUNNYVALE, CA \$676,887 2003 Drmanac, Radoje CALLIDA GENOMICS SUNNYVALE, CA
88	26	1Z01BP005021-01	<p>DUNCAN, ROBERT</p> <p><u>Pathogen Chip for Detection of Bioterrorism Agents in BI</u></p>
90	26	1U54AI057141-010005	<p>ERNST, ROBERT</p> <p><u>Bacterial Lipopolysaccharide Structure</u></p>
<p>Total: \$27,022,275 *</p>			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA
91	26	1U01AI056513-01	<p>GRANDI, GUIDO</p> <p><u>Novel vaccine candidates for Y. pestis from genomics</u></p>
<p>Total: \$1,909,381</p>			<ul style="list-style-type: none"> \$1,209,134 2004 Grandi, Guido CHIRON S.P.A. ITALY - SIENA \$700,247 2003 Grandi, Guido CHIRON S.P.A. ITALY - SIENA
92	26	1U54AI057141-010003	<p>GUINA, TINA</p> <p><u>Bacterial Proteome</u></p>
<p>Total: \$27,022,275 *</p>			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA
93	26	1U01AI054374-01	<p>HENRICKSON, KELLY</p> <p><u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u></p>
<p>Total: \$1,346,667</p>			<ul style="list-style-type: none"> \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI

94	26	1Z01AI000919-01	HINNEBUSCH, B	<u>Rodent Models To Study Pathogenesis Of Bubonic And Septi</u>
95	26	1Z01AI000919-02	HINNEBUSCH, B	<u>Rodent Models To Study Pathogenesis Of Bubonic And Septi</u>
96	26	1Z01AI000919-03	HINNEBUSCH, BERNARD	<u>Rodent Models Of Bubonic And Septicemic Plague</u>
97	26	1U01AI056422-01	KIMMEL, BRUCE	<u>Antibodies for BioDefense using Directed Evolution</u>
Total: \$3,176,307			<ul style="list-style-type: none"> \$1,025,983 2005 Wall, Mark A DIVERSA CORPORATION SAN DIEGO, CA \$1,264,136 2004 Kimmel, Bruce E DIVERSA CORPORATION SAN DIEGO, CA \$886,188 2003 Kimmel, Bruce E DIVERSA CORPORATION SAN DIEGO, CA 	
98	26	1UC1AI062567-01	LOWELL, GEORGE	<u>Development of Protollin™ Plague Vaccine</u>
Total: \$7,992,403			<ul style="list-style-type: none"> \$7,992,403 2004 Lowell, George H ID BIOMEDICAL CORPORATION OF WASHINGTON BOTHELL, WA 	
99	26	1R21AI054602-01	MATSUMURA, ICHIRO	<u>Engineered alkaline phosphatases as biosensors</u>
Total: \$532,000			<ul style="list-style-type: none"> \$266,000 2004 Matsumura, Ichiro EMORY UNIVERSITY ATLANTA, GA \$266,000 2003 Matsumura, Ichiro EMORY UNIVERSITY ATLANTA, GA 	
100	26	1R01AI051520-01A1	NILLES, MATTHEW	<u>Protein Interactions in Type III Secretion in Y. pestis</u>
Total: \$1,004,483			<ul style="list-style-type: none"> \$245,350 2005 Nilles, Matthew L UNIVERSITY OF NORTH DAKOTA GRAND FORKS, ND \$245,350 2004 Nilles, Matthew L UNIVERSITY OF NORTH DAKOTA GRAND FORKS, ND \$513,783 2003 Nilles, Matthew L UNIVERSITY OF NORTH DAKOTA GRAND FORKS, ND 	
101	26	1U54AI057141-010001	OLSON, MAYNARD	<u>Bacterial Genome Diversity</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
102	26	1R41AI052921-01A1	PAPISOV, MIKHAIL	<u>SYSTEMIC LYMPH NODE SPECIFIC AGENTS</u>

Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2003 Papisov, Mikhail I NANOPHARMA, CORPORATION BOSTON, MA 	
103	26	2P41RR013461-060035	PESAVENTO, JAMES	<u>QUANTITATIVE ANALYSIS OF YERSINIA PESTIS ORF38 PROTEIN</u>
Total: \$6,706,649			<ul style="list-style-type: none"> \$1,446,875 2004 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA \$1,276,355 2003 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA \$1,257,387 2002 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA \$1,311,794 2001 Turteltaub, Kenneth W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA \$1,414,238 2000 TURTELTAUB, KENNETH W UNIVERSITY OF CALIF-LAWRNC LVRMR NAT LAB LIVERMORE, CA 	
104	26	1R41AI059138-01A1	SCHOEN, CHRISTIAN	<u>Automated, portable, concurrent, WMD detection system</u>
Total: \$994,832			<ul style="list-style-type: none"> \$500,000 2005 Schoen, Christian CONCURRENT ANALYTICAL, INC. Kailua, HI \$494,832 2004 Schoen, Christian CONCURRENT ANALYTICAL, INC. Kailua, HI 	
105	26	1U19AI056543-010003	SHAPIRO, DANIEL	<u>Diagnostics</u>
Total: \$6,264,376			<ul style="list-style-type: none"> \$2,310,008 2005 Murphy, John R BOSTON MEDICAL CENTER BOSTON, MA \$2,370,307 2004 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA \$1,584,061 2003 Rice, Peter A BOSTON MEDICAL CENTER BOSTON, MA 	
106	26	1U54AI057141-010007	SKERRETT, SHAWN	<u>Airway Inflammation</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
107	26	1R21AI054595-01	SMILEY, STEPHEN	<u>Priming CD4+ T cells to protect against pneumonic plague</u>
Total: \$692,000			<ul style="list-style-type: none"> \$346,000 2004 Smiley, Stephen T TRUDEAU INSTITUTE, INC. SARANAC LAKE, NY \$346,000 2003 Smiley, Stephen T TRUDEAU INSTITUTE, INC. SARANAC LAKE, NY 	

108	26	1R21AI053432-01	STEBBINS, C	<u>Novel Plague Antibacterials Through Phage Display</u>
Total: \$501,000			<ul style="list-style-type: none"> • \$250,500 2003 Stebbins, C Erec ROCKEFELLER UNIVERSITY NEW YORK, NY • \$250,500 2002 Stebbins, C E ROCKEFELLER UNIVERSITY NEW YORK, NY 	
109	26	1R21AI055660-01A1	SULAKVELIDZE, ALEXANDER	<u>Genetic clustering and virulence of Y. pestis strains</u>
Total: \$284,875			<ul style="list-style-type: none"> • \$284,875 2004 Sulakvelidze, Alexander UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
110	26	1R43AI058410-01	SURBER, MARK	<u>Antibacterial Therapy by Pathogen Osmolality Disruption</u>
Total: \$265,985			<ul style="list-style-type: none"> • \$265,985 2004 Surber, Mark W MPEX PHARMACEUTICALS, INC. SAN DIEGO, CA 	
111	26	1R43AI052953-01	SYKES, KATHRYN	<u>Plague vaccine candidates by a functional genomic screen</u>
Total: \$133,750			<ul style="list-style-type: none"> • \$133,750 2002 Sykes, Kathryn F ELIANCE BIOTECHNOLOGY, INC. DALLAS, TX 	
112	26	1R01AI066505-01	TALTON, JAMES	<u>Inhaled Aminoglycoside Formula for Plague and Tularemia</u>
Total: \$603,030			<ul style="list-style-type: none"> • \$603,030 2005 Talton, James David NANOTHERAPEUTICS, INC. ALACHUA, FL 	
113	13	1R43AI058627-01A1	ALEKSHUN, MICHAEL	<u>Novel Therapeutics for Biodefense</u>
Total: \$1,684,306			<ul style="list-style-type: none"> • \$854,748 2005 Alekshun, Michael N PARATEK PHARMACEUTICALS BOSTON, MA • \$829,558 2004 Alekshun, Michael N PARATEK PHARMACEUTICALS BOSTON, MA 	
114	13	1R43AI063917-01	BOGOMOLOVA, ANASTASIA	<u>Electrochemical Multispecific Molecular Detection System</u>
Total: \$380,520			<ul style="list-style-type: none"> • \$380,520 2005 Bogomolova, Anastasia FRACTAL SYSTEMS, INC. SAFETY HARBOR, FL 	
115	13	1U56AI057192-010001	BRITIGAN, BRADLEY	<u>Development Research Projects</u>
Total: \$1,477,975			<ul style="list-style-type: none"> • \$1,477,975 2003 Britigan, Bradley E UNIVERSITY OF IOWA IOWA CITY, IA 	

116	13	1U01AI056452-01	CLEMENTS, JOHN	<u>Novel adjuvants for biodefense vaccines</u>
Total: \$1,759,403			<ul style="list-style-type: none"> \$270,779 2005 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$460,814 2004 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$1,027,810 2003 Clements, John D TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA 	
117	13	1R21CI000096-01	COLLINS, CHRISTOPHER	<u>DISCOVERY AND DEVELOPMENT OF BIODEFENSE ANTIMICROBIALS</u>
118	13	1U01AI061192-01	CUNNINGHAM, PHILIP	<u>Anti-infectives that target bacterial ribosomes</u>
Total: \$621,051			<ul style="list-style-type: none"> \$621,051 2004 Cunningham, Philip R WAYNE STATE UNIVERSITY DETROIT, MI 	
119	13	1R01AI060662-01	DIXON, JACK	<u>Molecular Mechanism of Pathogenesis</u>
Total: \$749,634			<ul style="list-style-type: none"> \$374,642 2005 Dixon, Jack E UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA \$374,992 2004 Dixon, Jack E UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA 	
120	13	1R21AI064614-01	DIXON, JACK	<u>YopT: A Yersinia Virulence Factor</u>
Total: \$307,750			<ul style="list-style-type: none"> \$307,750 2005 Dixon, Jack E UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA 	
121	13	1U01AI056395-01	DZIARSKI, ROMAN	<u>Antibacterial peptidoglycan recognition proteins</u>
Total: \$940,625			<ul style="list-style-type: none"> \$376,250 2005 Dziarski, Roman INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS INDIANAPOLIS, IN \$376,250 2004 Dziarski, Roman INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS INDIANAPOLIS, IN \$188,125 2003 Dziarski, Roman INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS INDIANAPOLIS, IN 	
122	13	1R01CI000099-01	ECKER, DAVID	<u>Automated Simultaneous Detection of Bioterrorism Agents</u>
123	13	1R03AI064312-01	GHOSH, PARTHO	<u>Structure of the multidrug efflux protein AcrA</u>
Total: \$70,340			<ul style="list-style-type: none"> \$70,340 2005 Ghosh, Partho UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA 	
124	13	2R44AI048355-02A1	HENKENS, ROBERT	<u>Device for Rapid Gene Detection of Multiple Bio-Agents</u>

Total: \$721,300			<ul style="list-style-type: none"> • \$360,650 2005 Henkens, Robert L ALDERON BIOSCIENCES, INC. DURHAM, NC • \$360,650 2004 Henkens, Robert L ALDERON BIOSCIENCES, INC. DURHAM, NC 	
125	13	2R37AI023538-14	ISBERG, RALPH	<u>MOLECULAR BASIS OF YERSINIA/HOST CELL INTERACTION</u>
Total: \$1,883,891			<ul style="list-style-type: none"> • \$367,875 2005 Isberg, Ralph R TUFTS UNIVERSITY BOSTON BOSTON, MA • \$321,478 2004 Isberg, Ralph R TUFTS UNIVERSITY BOSTON BOSTON, MA • \$312,115 2003 Isberg, Ralph R TUFTS UNIVERSITY BOSTON BOSTON, MA • \$303,025 2002 Isberg, Ralph R TUFTS UNIVERSITY BOSTON BOSTON, MA • \$294,197 2001 Isberg, Ralph R TUFTS UNIVERSITY BOSTON BOSTON, MA • \$285,201 2000 ISBERG, RALPH R TUFTS UNIVERSITY BOSTON BOSTON, MA 	
126	13	1U01AI054815-01	KIMMEL, BRUCE	<u>Characterization of Proteomes of Category A Pathogens</u>
Total: \$3,671,636			<ul style="list-style-type: none"> • \$1,421,269 2005 Green, Brian DIVERSA CORPORATION SAN DIEGO, CA • \$1,309,441 2004 Kimmel, Bruce E DIVERSA CORPORATION SAN DIEGO, CA • \$940,926 2003 Kimmel, Bruce E DIVERSA CORPORATION SAN DIEGO, CA 	
127	13	1F32AI063746-01	LAWRENZ, MATTHEW	<u>Identification of rovA Regulators in Y. Enterocolitica</u>
Total: \$48,296			<ul style="list-style-type: none"> • \$48,296 2005 Lawrenz, Matthew ORION GENOMICS, LLC ST. LOUIS, MO 	
128	13	9R01AI056021-19	LEVY, STUART	<u>The multiple antibiotic resistance (MAR) regulon</u>
Total: \$1,424,361			<ul style="list-style-type: none"> • \$480,650 2005 Levy, Stuart B TUFTS UNIVERSITY BOSTON BOSTON, MA • \$468,681 2004 Levy, Stuart B TUFTS UNIVERSITY BOSTON BOSTON, MA • \$475,030 2003 Levy, Stuart B TUFTS UNIVERSITY BOSTON BOSTON, MA 	
129	13	1U01AI056536-01	LU, SHAN	<u>Multi-gene plague vaccine with expanded protection</u>
Total: \$1,089,169			<ul style="list-style-type: none"> • \$538,990 2004 Lu, Shan UNIV OF MASSACHUSETTS MED SCH WORCESTER WORCESTER, MA • \$550,179 2003 Lu, Shan UNIV OF MASSACHUSETTS MED SCH 	

			WORCESTER WORCESTER, MA	
130	13	1U19AI057234-010002	LYONS, C.	<u>Dendritic Cell Response to Class A Biothreats</u>
Total: \$8,032,229			<ul style="list-style-type: none"> \$3,124,596 2005 Banchereau, Jacques F BAYLOR RESEARCH INSTITUTE DALLAS, TX \$3,164,316 2004 Banchereau, Jacques F BAYLOR RESEARCH INSTITUTE DALLAS, TX \$1,743,317 2003 Banchereau, Jacques F BAYLOR RESEARCH INSTITUTE DALLAS, TX 	
131	13	1U54AI057141-010002	MANOIL, COLIN	<u>Bacterial Essential and Virulence Gene</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
132	13	1U54AI057141-019008	MANOIL, COLIN	<u>CORE--Bacterial Strain</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
133	13	1U54AI057141-010008	MARTIN, THOMAS	<u>Variation in Human Innate Immunity</u>
Total: \$27,022,275 *			<ul style="list-style-type: none"> \$10,904,836 2005 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$11,677,224 2004 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA \$4,440,215 2003 Miller, Samuel I UNIVERSITY OF WASHINGTON SEATTLE, WA 	
134	13	1P01AI060642-01	MIZEL, STEVEN	<u>Respiratory Immunity Against Agents of Bioterrorism</u>
Total: \$1,818,389			<ul style="list-style-type: none"> \$1,818,389 2004 Mizel, Steven B ION TECHNOLOGIES, INC. WINSTON-SALEM, NC 	
135	13	1P01AI056293-01	NATHAN, CARL	<u>MACROPHAGES, DENDRITIC CELLS AND PATHOGENS</u>
Total: \$3,474,964 *			<ul style="list-style-type: none"> \$1,388,080 2005 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY \$1,344,411 2004 Nathan, Carl F WEILL MEDICAL COLLEGE OF 	

			CORNELL UNIV NEW YORK, NY	
			<ul style="list-style-type: none"> \$742,473 2003 Nathan, Carl F WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
136	13	1U19AI056578-010004	PASETTI, MARCELA	<u>Evaluation of Prime-Boost Responses</u>
		Total: \$4,457,410 *	<ul style="list-style-type: none"> \$1,930,417 2005 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$1,881,608 2004 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$645,385 2003 Nataro, James P UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
137	13	1R43AI052898-01	PRUDENT, JAMES	<u>Rapid Turn-around Testing for Bioterrorism Agents</u>
		Total: \$105,250	<ul style="list-style-type: none"> \$105,250 2002 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI 	
138	13	2R44AI052898-02	PRUDENT, JAMES	<u>Rapid Turn-around Multiplex Testing: Bioweapon Agents</u>
		Total: \$938,550	<ul style="list-style-type: none"> \$389,796 2004 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI \$548,754 2003 Prudent, James R ERAGEN BIOSCIENCES, INC. MADISON, WI 	
139	13	1R21AI063384-01A1	QUADRI, LUIS	<u>Virulence-conferring siderophore biosynthesis inhibitors</u>
		Total: \$210,000	<ul style="list-style-type: none"> \$210,000 2005 Quadri, Luis E WEILL MEDICAL COLLEGE OF CORNELL UNIV NEW YORK, NY 	
140	13	1R21AI053285-01	RAVETCH, JEFFREY	<u>Novel Strategies for Y pestis Immunotherapy</u>
		Total: \$501,000	<ul style="list-style-type: none"> \$250,500 2003 Ravetch, Jeffrey V ROCKEFELLER UNIVERSITY NEW YORK, NY \$250,500 2002 Ravetch, Jeffrey V ROCKEFELLER UNIVERSITY NEW YORK, NY 	
141	13	1R21AI065724-01	SCHWEIZER, HERBERT	<u>Non-antibiotic resistance markers for bacteria</u>
		Total: \$179,725	<ul style="list-style-type: none"> \$179,725 2005 Schweizer, Herbert P COLORADO STATE UNIVERSITY-FORT COLLINS FORT COLLINS, CO 	
142	13	1UC1AI067203-01	SIGAL, GEORGE	<u>A Multiplexed Point-of-Care Diagnostic System for Bio-T*</u>
143	13	1R43AI052950-01	SULK, ROBERTA	<u>Rapid Detection of Multiple</u>

				<u>Bioterrorism Agents</u>
Total: \$101,052			<ul style="list-style-type: none"> \$101,052 2002 Sulk, Roberta A CC TECHNOLOGY, INC. LARAMIE, WY 	
144	13	2R44AI055073-02	U'REN, JACK	<u>Bacterial Pathogen Amplification & Real-Time Detection</u>
Total: \$362,019			<ul style="list-style-type: none"> \$362,019 2004 Uren, Jack R SAIGENE CORPORATION REDMOND, WA 	
145	13	1U01AI056421-01	VALIANTE, NICHOLAS	<u>Novel Adjuvants/Delivery Systems for Biodefense Vaccines</u>
Total: \$4,680,300			<ul style="list-style-type: none"> \$1,624,853 2005 Valiante, Nicholas M CHIRON CORPORATION EMERYVILLE, CA \$2,035,822 2004 Valiante, Nicholas M CHIRON CORPORATION EMERYVILLE, CA \$1,019,625 2003 Valiante, Nicholas M CHIRON CORPORATION EMERYVILLE, CA 	
146	13	1R21AI060953-01	WHITE, STEPHEN	<u>Development of DHPS as a Bioterrorism Therapeutic Target</u>
Total: \$264,000			<ul style="list-style-type: none"> \$264,000 2004 White, Stephen W ST. JUDE CHILDREN'S RESEARCH HOSPITAL MEMPHIS, TN 	
147	13	1R01AI044101-01A2	WIENER-KRONISH, JEANINE	<u>BIOLOGY OF PCRV</u>
Total: \$1,643,042			<ul style="list-style-type: none"> \$313,175 2004 Wienerkronish, Jeanine P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA \$314,600 2003 Wienerkronish, Jeanine P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA \$38,591 2002 Wiener-Kronish, Jeanine P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA \$327,526 2002 Wiener-Kronish, Jeanine P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA \$317,925 2001 Wiener-Kronish, Jeanine P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA \$331,225 2000 WIENER-KRONISH, JEANINE P UNIVERSITY OF CALIFORNIA SAN FRANCISCO SAN FRANCISCO, CA 	

2 Increasing virulence of non-listed agent

Autographa californica multiple nucleopolyhedrovirus

Taxonomy: Family *Baculoviridae*, Genus *Nucleopolyhedrovirus*, Species *Autographa californica* *multiple nucleopolyhedrovirus*, Virus: *Autographa californica* multiple nucleopolyhedrovirus.

Publications:

1. **Regev, A., H. Rivkin, B. Inceoglu, E. Gershburg, B. D. Hammock, M. Gurevitz, and N. Chejanovsky.** 2003. Further enhancement of baculovirus insecticidal efficacy with scorpion toxins that interact cooperatively. *FEBS Lett* **537**:106-10.
This paper describes the insertion of scorpion toxins into an insect virus, and the resulting increase in insecticidal efficacy of the virus.

3 Increasing transmissibility or environmental stability of non-listed agent

Not screened.

4 Powder or aerosol production of non-listed agent/5 Powder or aerosol dispersal of non-listed agent

Not screened.

6 *De novo* synthesis of non-listed agent

Enterobacteria phage ϕ X174

1. **Smith, H. O., C. A. Hutchison, 3rd, C. Pfannkoch, and J. C. Venter.** 2003. Generating a synthetic genome by whole genome assembly: phiX174 bacteriophage from synthetic oligonucleotides. *Proc Natl Acad Sci U S A* **100**:15440-5.
This paper reports the synthesis of the full genome of the phage from synthetic oligonucleotides, and the rescue of complete phage particles after transfection of the genome into bacteria.

7 Genome transfer, genome replacement, or cellular reconstitution of non-listed agent

None identified.

MODERATELY DANGEROUS ACTIVITIES (MDA)

1 Increasing virulence of listed agent or related agent

Influenza B virus

Taxonomy: Family *Orthomyxoviridae*, Genus *Influenzavirus B*, Species *Influenza B virus*, Virus:

Influenza B virus.

Publications:

1. **McCullers, J. A., E. Hoffmann, V. C. Huber, and A. D. Nickerson.** 2005. A single amino acid change in the C-terminal domain of the matrix protein M1 of influenza B virus confers mouse adaptation and virulence. *Virology* **336**:318-26.
This paper describes the adaptation of influenza B virus to mice, and reports the identification of the amino acid residue that is responsible for increased virulence in mice.

Newcastle disease virus

Publications:

1. **Shengqing, Y., N. Kishida, H. Ito, H. Kida, K. Otsuki, Y. Kawaoka, and T. Ito.** 2002. Generation of velogenic Newcastle disease viruses from a nonpathogenic waterfowl isolate by passaging in chickens. *Virology* **301**:206-11.
This paper reports the virulence increase of a strain of the virus after repeated passaging in chickens.

Pichinde virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species *Pichinde virus*, Virus: Pichinde virus.

Publications:

1. **Zhang, L., K. A. Marriott, D. G. Harnish, and J. F. Aronson.** 2001. Reassortant analysis of guinea pig virulence of pichinde virus variants. *Virology* **290**:30-8.

This paper describes the generation of reassortant Pichinde viruses by switching individual gene segments of different isolates.

2 Insertion of host genes into listed agent or related agent

Publications: None reported.

3 Increasing transmissibility or environmental stability of listed agent or related agent

Publications: None reported.

4 Powder or aerosol production of listed agent or related agent/5 Powder or aerosol dispersal of listed agent or related agent

Alcelaphine herpesvirus 1,2

Publications:

1. **Li, H., N. S. Taus, G. S. Lewis, O. Kim, D. L. Traul, and T. B. Crawford.** 2004. Shedding of ovine herpesvirus 2 in sheep nasal secretions: the predominant mode for transmission. *J Clin Microbiol* **42**:5558-64.
This paper reports the detection of ovine herpesvirus 2 in nasal secretions of infected sheep at various time points of infection; and demonstrates that aerosolized nasal secretions are infectious.
2. **Taus, N. S., D. L. Traul, J. L. Oaks, T. B. Crawford, G. S. Lewis, and H. Li.** 2005. Experimental infection of sheep with ovine herpesvirus 2 via aerosolization of nasal secretions. *J Gen Virol* **86**:575-9.
This paper reports on the aerosolization of nasal secretions of infected sheep.

Andes virus

Taxonomy: Family *Bunyaviridae*, Genus *Hantavirus*, Species: *Andes virus*, Virus: Andes virus.

Publications:

1. **McElroy, A. K., M. Bray, D. S. Reed, and C. S. Schmaljohn.** 2002. Andes virus infection of cynomolgus macaques. *J Infect Dis* **186**:1706-12.
This paper describes the challenge of cynomolgus macaques with aerosolized Andes virus.

Bacillus anthracis

1. **Pitt, M. L., S. F. Little, B. E. Ivins, P. Fellows, J. Barth, J. Hewetson, P. Gibbs, M. Dertzbaugh, and A. M. Friedlander.** 2001. In vitro correlate of immunity in a rabbit model of inhalational anthrax. *Vaccine* **19**:4768-73.
This paper reports the identification of serum factors conferring immunity to the bacillus.
2. **Weis, C. P., A. J. Intrepido, A. K. Miller, P. G. Cowin, M. A. Durno, J. S. Gebhardt, and R. Bull.** 2002. Secondary aerosolization of viable *Bacillus anthracis* spores in a contaminated US Senate Office. *Jama* **288**:2853-8.

- This paper reports the sampling of the bacillus from surfaces and the aerosolization of these samples to estimate secondary aerosolization under natural conditions.
3. **McBride, M. T., D. Masquelier, B. J. Hindson, A. J. Makarewicz, S. Brown, K. Burris, T. Metz, R. G. Langlois, K. W. Tsang, R. Bryan, D. A. Anderson, K. S. Venkateswaran, F. P. Milanovich, and B. W. Colston, Jr.** 2003. Autonomous detection of aerosolized *Bacillus anthracis* and *Yersinia pestis*. *Anal Chem* **75**:5293-9.
This paper reports a method for detection of aerosolized bacillus/yersinia.
 4. **Vasconcelos, D., R. Barnewall, M. Babin, R. Hunt, J. Estep, C. Nielsen, R. Carnes, and J. Carney.** 2003. Pathology of inhalation anthrax in cynomolgus monkeys (*Macaca fascicularis*). *Lab Invest* **83**:1201-9.
This paper reports the pathology of inhalational anthrax in a monkey model.
 5. **Hermanson, G., V. Whitlow, S. Parker, K. Tonsky, D. Rusalov, M. Ferrari, P. Lalor, M. Komai, R. Mere, M. Bell, K. Brenneman, A. Mateczun, T. Evans, D. Kaslow, D. Galloway, and P. Hobart.** 2004. A cationic lipid-formulated plasmid DNA vaccine confers sustained antibody-mediated protection against aerosolized anthrax spores. *Proc Natl Acad Sci U S A* **101**:13601-6.
This paper reports the evaluation of a vaccine candidate for the prevention of aerosolized infection with the bacillus.
 6. **Mohamed, N., M. Clagett, J. Li, S. Jones, S. Pincus, G. D'Alia, L. Nardone, M. Babin, G. Spitalny, and L. Casey.** 2005. A high-affinity monoclonal antibody to anthrax protective antigen passively protects rabbits before and after aerosolized *Bacillus anthracis* spore challenge. *Infect Immun* **73**:795-802.
This paper reports the efficacy of a vaccine candidate in aerosol studies.
 7. **Hindson, B. J., M. T. McBride, A. J. Makarewicz, B. D. Henderer, U. S. Setlur, S. M. Smith, D. M. Gutierrez, T. R. Metz, S. L. Nasarabadi, K. S. Venkateswaran, S. W. Farrow, B. W. Colston, Jr., and J. M. Dzenitis.** 2005. Autonomous detection of aerosolized biological agents by multiplexed immunoassay with polymerase chain reaction confirmation. *Anal Chem* **77**:284-9.
This paper reports the development of a detection system.

Bacillus atrophaeus

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Bacilli*, Order *Bacillales*, Family

Bacillaceae.

Publications:

1. **Fergenson, D. P., M. E. Pitesky, H. J. Tobias, P. T. Steele, G. A. Czerwiec, S. C. Russell, C. B. Lebrilla, J. M. Horn, K. R. Coffee, A. Srivastava, S. P. Pillai, M. T. Shih, H. L. Hall, A. J. Ramponi, J. T. Chang, R. G. Langlois, P. L. Estacio, R. T.**

Hadley, M. Frank, and E. E. Gard. 2004. Reagentless detection and classification of individual bioaerosol particles in seconds. *Anal Chem* **76**:373-8.

This paper describes a mass spectrometry-based analytical technique for the real-time characterization of individual airborne cells using individual spores of *B. thuringiensis* and *B. atrophaeus*.

Bacillus globigii

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Bacilli*, Order *Bacillales*, Family

Bacillaceae.

Publications:

1. **Clark Burton, N., A. Adhikari, S. A. Grinshpun, R. Hornung, and T. Reponen.** 2005. The effect of filter material on bioaerosol collection of *Bacillus subtilis* spores used as a *Bacillus anthracis* simulant. *J Environ Monit* **7**:475-80.
This paper reports characteristics of filter material used in detection systems for bacilli.
2. **Hindson, B. J., M. T. McBride, A. J. Makarewicz, B. D. Henderer, U. S. Setlur, S. M. Smith, D. M. Gutierrez, T. R. Metz, S. L. Nasarabadi, K. S. Venkateswaran, S. W. Farrow, B. W. Colston, Jr., and J. M. Dzenitis.** 2005. Autonomous detection of aerosolized biological agents by multiplexed immunoassay with polymerase chain reaction confirmation. *Anal Chem* **77**:284-9.
This paper reports the development of a detection system.

Bacillus thuringiensis

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Bacilli*, Order *Bacillales*, Family

Bacillaceae.

Publications:

1. **Fergenson, D. P., M. E. Pitesky, H. J. Tobias, P. T. Steele, G. A. Czerwieniec, S. C. Russell, C. B. Lebrilla, J. M. Horn, K. R. Coffee, A. Srivastava, S. P. Pillai, M. T. Shih, H. L. Hall, A. J. Ramponi, J. T. Chang, R. G. Langlois, P. L. Estacio, R. T. Hadley, M. Frank, and E. E. Gard.** 2004. Reagentless detection and classification of individual bioaerosol particles in seconds. *Anal Chem* **76**:373-8.
This paper describes a mass spectrometry-based analytical technique for the real-time characterization of individual airborne cells using individual spores of *B. thuringiensis* and *B. atrophaeus*.

Brucella melitensis

1. **Mense, M. G., R. H. Borschel, C. L. Wilhelmsen, M. L. Pitt, and D. L. Hoover.** 2004. Pathologic changes associated with brucellosis experimentally induced by aerosol exposure in rhesus macaques (*Macaca mulatta*). *Am J Vet Res* **65**:644-52.
This paper reports the pathology of monkeys exposed to aerosolized brucellae.

Burkholderia mallei

Publications:

1. **Ulrich, R. L., K. Amemiya, D. M. Waag, C. J. Roy, and D. DeShazer.** 2005. Aerogenic vaccination with a *Burkholderia mallei* auxotroph protects against aerosol-initiated glanders in mice. *Vaccine* **23**:1986-92.
This paper reports the aerosol vaccination and aerosol challenge of mice with the bacterium.

Burkholderia pseudomallei

Publications:

1. **Jeddeloh, J. A., D. L. Fritz, D. M. Waag, J. M. Hartings, and G. P. Andrews.** 2003. Biodefense-driven murine model of pneumonic melioidosis. *Infect Immun* **71**:584-7.
This paper reports the development of a mouse model of *Burkholderia pseudomallei* infection by aerosol.

Classical swine fever virus

Publications:

1. **Gonzalez, C., C. Pijoan, A. Ciprian, P. Correa, and S. Mendoza.** 2001. The effect of vaccination with the PAV-250 strain classical swine fever (CSF) virus on the airborne transmission of CSF virus. *J Vet Med Sci* **63**:991-6.
This paper describes the vaccination of pigs with the virus and the study of aerosol transmission from infected to non-infected pigs, and the vaccination of pigs and the testing of the efficacy of the vaccine after aerosol challenge.

Cowpox virus

Taxonomy: Family *Poxviridae*, Subfamily: *Chordopoxvirinae*, Genus *Orthopoxvirus*, Species *Cowpox virus*, Virus: Cowpox virus.

Publications:

1. **Bray, M., M. Martinez, D. F. Smee, D. Kefauver, E. Thompson, and J. W. Huggins.** 2000. Cidofovir protects mice against lethal aerosol or intranasal cowpox virus challenge. *J Infect Dis* **181**:10-9.
This paper reports the successful protection of mice against cowpox infection by aerosol using an antiviral.
2. **Martinez, M. J., M. P. Bray, and J. W. Huggins.** 2000. A mouse model of aerosol-transmitted orthopoxviral disease: morphology of experimental aerosol-transmitted orthopoxviral disease in a cowpox virus-BALB/c mouse system. *Arch Pathol Lab Med* **124**:362-77.
This paper describes a mouse model for aerosolized cowpox virus infection.
3. **Bray, M., M. Martinez, D. Kefauver, M. West, and C. Roy.** 2002. Treatment of aerosolized cowpox virus infection in mice with aerosolized cidofovir. *Antiviral Res* **54**:129-42.
This paper reports the successful treatment of mice infected with cowpox virus by aerosol.

Coxiella burnetii

Publications:

1. **Waag, D. M., M. J. England, R. F. Tammariello, W. R. Byrne, P. Gibbs, C. M. Banfield, and M. L. Pitt.** 2002. Comparative efficacy and immunogenicity of Q fever chloroform:methanol residue (CMR) and phase I cellular (Q-Vax) vaccines in cynomolgus monkeys challenged by aerosol. *Vaccine* **20**:2623-34.
This paper reports the evaluation of a vaccine against aerosol infection with the bacterium.

Human respiratory syncytial virus

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Pneumovirinae*, Genus *Pneumovirus*, Species *Human respiratory syncytial virus*, Virus: Human respiratory syncytial virus.

Publications:

1. **Tumas, D. B., B. Chan, W. Werther, T. Wrin, J. Vennari, N. Desjardin, R. L. Shields, and P. Jardieu.** 2001. Anti-IgE efficacy in murine asthma models is dependent on the method of allergen sensitization. *J Allergy Clin Immunol* **107**:1025-33.
This paper evaluates whether the mode of allergen sensitization influences the role of IgE in allergen-induced pulmonary eosinophilic inflammation, using HRSV as a control.

Human Rhinovirus

Taxonomy: Family *Picornaviridae*, Genus *Enterovirus*, Species *Rhinovirus*, Virus: Human rhinovirus.

Publications:

1. **Myatt, T. A., S. L. Johnston, S. Rudnick, and D. K. Milton.** 2003. Airborne rhinovirus detection and effect of ultraviolet irradiation on detection by a semi-nested RT-PCR assay. *BMC Public Health* **3**:5.
This paper describes the aerosolization of a rhinovirus in a small aerosol chamber, using different concentrations, to determine the effect of UV irradiation on detection of rhinoviral aerosols.

Measles virus

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*, Genus *Morbillivirus*, Species *Measles virus*, Virus: Measles virus.

Publications:

1. **Sepulveda-Amor, J., J. L. Valdespino-Gomez, L. Garcia-Garcia Mde, J. Bennett, R. Islas-Romero, G. Echaniz-Aviles, and J. F. de Castro.** 2002. A randomized trial demonstrating successful boosting responses following simultaneous aerosols of measles and rubella (MR) vaccines in school age children. *Vaccine* **20**:2790-5.
This paper reports the evaluation of an aerosolized vaccine candidate.

Monkeypox virus

Publications:

1. **Zaucha, G. M., P. B. Jahrling, T. W. Geisbert, J. R. Swarengen, and L. Hensley.** 2001. The pathology of experimental aerosolized monkeypox virus infection in cynomolgus monkeys (*Macaca fascicularis*). *Lab Invest* **81**:1581-1600. This paper reports the exposure of monkeys to a fine-particle aerosol (lethal dose) of *Monkeypox virus*, and the following characterization of the pathology of monkeypox by conducting necropsies of the deceased animals.

Mycoplasma gallisepticum

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Mollicutes*, Order *Mycoplasmatales*,

Family *Mycoplasmataceae*.

Publications:

1. **Branton, S. L., W. B. Roush, B. D. Lott, J. D. Evans, W. A. Dozier, 3rd, S. D. Collier, S. M. Bearson, B. L. Bearson, and G. T. Pharr.** 2005. A self-propelled, constant-speed spray vaccinator for commercial layer chickens. *Avian Dis* **49**:147-51. This paper reports the construction of a battery-powered, self-propelled, constant-speed vaccinator for the vaccination against *Mycoplasma gallisepticum*.

Mycoplasma synoviae

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Mollicutes*, Order *Mycoplasmatales*,

Family *Mycoplasmataceae*.

Publications:

1. **Kleven, S. H., G. N. Rowland, and M. C. Kumar.** 2001. Poor serologic response to upper respiratory infection with *Mycoplasma synoviae* in turkeys. *Avian Dis* **45**:719-23. This paper reports the immunological response of turkeys to aerosol challenge with the bacterium.

Rubella virus

Taxonomy: Family *Togaviridae*, Genus *Rubivirus*, Species *Rubella virus*, Virus: Rubella virus.

Publications:

1. **Sepulveda-Amor, J., J. L. Valdespino-Gomez, L. Garcia-Garcia Mde, J. Bennett, R. Islas-Romero, G. Echaniz-Aviles, and J. F. de Castro.** 2002. A randomized trial demonstrating successful boosting responses following simultaneous aerosols of measles and rubella (MR) vaccines in school age children. *Vaccine* **20**:2790-5.
This paper reports the evaluation of an aerosolized vaccine candidate.

Variola virus

Publications:

1. **Jahrling, P. B., L. E. Hensley, M. J. Martinez, J. W. Leduc, K. H. Rubins, D. A. Relman, and J. W. Huggins.** 2004. Exploring the potential of variola virus infection of cynomolgus macaques as a model for human smallpox. *Proc Natl Acad Sci U S A* **101**:15196-200.
This paper describes the development of a monkey model for smallpox. Cynomolgus macaques were exposed to several variola strains through aerosol and/or i.v. routes. Two strains, Harper and India 7124, produced uniform acute lethality when inoculated i.v. in high doses. Lower doses resulted in less fulminant, systemic disease and lower mortality. The pathology of the infected monkeys is described.

Venezuelan equine encephalitis virus

Publications:

1. **Shoemaker, M. O., R. Tammariello, B. Crise, S. S. Bouhaouala, G. B. Knudson, W. E. Jackson, 3rd, G. V. Ludwig, and J. F. Smith.** 2001. Combined effects of Venezuelan equine encephalitis IIIA virus and gamma irradiation in mice. *Mil Med* **166**:88-9.
This paper reports the combined effects of of injury from exposure to ionizing radiation and aerosol infection of mice with the virus.
2. **Reed, D. S., C. M. Lind, M. G. Lackemeyer, L. J. Sullivan, W. D. Pratt, and M. D. Parker.** 2005. Genetically engineered, live, attenuated vaccines protect nonhuman primates against aerosol challenge with a virulent IE strain of Venezuelan equine encephalitis virus. *Vaccine* **23**:3139-47.
This paper reports the efficacy of a vaccine candidate in primates challenged with the virus by aerosol.

Yersinia pestis

1. **McBride, M. T., D. Masquelier, B. J. Hindson, A. J. Makarewicz, S. Brown, K. Burris, T. Metz, R. G. Langlois, K. W. Tsang, R. Bryan, D. A. Anderson, K. S. Venkateswaran, F. P. Milanovich, and B. W. Colston, Jr.** 2003. Autonomous detection of aerosolized Bacillus anthracis and Yersinia pestis. *Anal Chem* **75**:5293-9.
This paper reports a method for detection of aerosolized bacillus/yersinia.
2. **Worsham, P. L., and C. Roy.** 2003. Pestoides F, a Yersinia pestis strain lacking plasminogen activator, is virulent by the aerosol route. *Adv Exp Med Biol* **529**:129-31.
This paper reports a mutant of the bacterium that is transmissible by aerosol.
3. **Hindson, B. J., M. T. McBride, A. J. Makarewicz, B. D. Henderer, U. S. Setlur, S. M. Smith, D. M. Gutierrez, T. R. Metz, S. L. Nasarabadi, K. S. Venkateswaran, S. W. Farrow, B. W. Colston, Jr., and J. M. Dzenitis.** 2005. Autonomous detection of aerosolized biological agents by multiplexed immunoassay with polymerase chain reaction confirmation. *Anal Chem* **77**:284-9.
This paper reports the development of a detection system.

6 *De novo* synthesis of listed agent of related agent

Poliovirus

Taxonomy: Family *Picornaviridae*, Genus *Enterovirus*, Species *Poliovirus*, Virus: Human

poliovirus 1,2,3.

Publications:

1. **Cello, J., A. V. Paul, and E. Wimmer.** 2002. Chemical synthesis of poliovirus cDNA: generation of infectious virus in the absence of natural template. *Science* **297**:1016-8. This paper reports the synthesis of the full genome of the virus from synthetic oligonucleotides, and the rescue of complete virus particles after mixing the genome with whole-cell lysates.

7 Construction of antibiotic- or vaccine-resistant related agent

Bacillus subtilis

Taxonomy: Domain *Bacteria*, Phylum *Firmicutes*, Class *Bacilli*, Order *Bacillales*, Family

Bacillaceae.

Publications:

1. **Novikova, S. I., A. M. Bushueva, L. A. Trachuk, G. E. Konstantinova, A. V. Serkina, C. Hoischen, J. Gumpert, G. G. Chestukhina, A. Mankin, and A. B. Shevelev.** 2000. Introduction of a mini-gene encoding a five-amino acid peptide confers erythromycin resistance on *Bacillus subtilis* and provides temporary erythromycin protection in *Proteus mirabilis*. *FEMS Microbiol Lett* **182**:213-8.
This paper reports on how to introduce erythromycin resistance into *Bacillus subtilis*.

8 Genome transfer, genome replacement, or cellular reconstitution of listed agent or related agent

Publications: None identified.

EXTREMELY DANGEROUS ACTIVITIES (EDA)

1 Work with eradicated agent

“1918 Influenza A virus” (Derivatives of the “1918 Influenza A virus”, and chimeric influenza viruses with at least one gene from the “1918 Influenza A virus”)

Taxonomy: Family *Orthomyxoviridae*, Genus *Influenzavirus A*, Species *Influenza A virus*, Virus: “1918 Influenza virus”.

Publications:

1. **Basler, C. F., A. H. Reid, J. K. Dybing, T. A. Janczewski, T. G. Fanning, H. Zheng, M. Salvatore, M. L. Perdue, D. E. Swayne, A. Garcia-Sastre, P. Palese, and J. K. Taubenberger.** 2001. Sequence of the 1918 pandemic influenza virus nonstructural gene (NS) segment and characterization of recombinant viruses bearing the 1918 NS genes. *Proc Natl Acad Sci U S A* **98**:2746-51.
This paper reports the determination of the nonstructural (NS) segment of a 1918 Influenza A virus, and its introduction into a mouse-adapted Influenza A/WSN/33 (H1N1) virus, which was shown to attenuate the virus.
2. **Tumpey, T. M., A. Garcia-Sastre, A. Mikulasova, J. K. Taubenberger, D. E. Swayne, P. Palese, and C. F. Basler.** 2002. Existing antivirals are effective against influenza viruses with genes from the 1918 pandemic virus. *Proc Natl Acad Sci U S A* **99**:13849-54.
This paper reports the generation of recombinant influenza viruses bearing the “1918 Influenza A virus” HA, NA, or M segments. Recombinant viruses possessing both the 1918 HA and 1918 NA were virulent in mice. The recombinant viruses were tested for their sensitivity to antiinfluenza virus drugs *in vitro* and *in vivo*. Zanamivir, oseltamivir, amantadine, and rimantadine were shown to be effective antivirals.
3. **Kash, J. C., C. F. Basler, A. Garcia-Sastre, V. Carter, R. Billharz, D. E. Swayne, R. M. Przygodzki, J. K. Taubenberger, M. G. Katze, and T. M. Tumpey.** 2004. Global host immune response: pathogenesis and transcriptional profiling of type A influenza viruses expressing the hemagglutinin and neuraminidase genes from the 1918 pandemic virus. *J Virol* **78**:9499-511.
This paper reports the use of recombinant influenza viruses bearing the “1918 Influenza A virus” HA and NA segments in a mouse model to elucidate the role of the encoded proteins in pathogenesis.
4. **Kobasa, D., A. Takada, K. Shinya, M. Hatta, P. Halfmann, S. Theriault, H. Suzuki, H. Nishimura, K. Mitamura, N. Sugaya, T. Usui, T. Murata, Y. Maeda, S.**

Watanabe, M. Suresh, T. Suzuki, Y. Suzuki, H. Feldmann, and Y. Kawaoka. 2004. Enhanced virulence of influenza A viruses with the haemagglutinin of the 1918 pandemic virus. *Nature* **431**:703-7.

This paper reports the generation of recombinant influenza viruses containing the HA and NA genes of the “1918 Influenza A virus”, and the demonstration that HA confers enhanced pathogenicity in mice to recent human viruses that are otherwise non-pathogenic in this host.

5. **Tumpey, T. M., A. Garcia-Sastre, J. K. Taubenberger, P. Palese, D. E. Swayne, and C. F. Basler.** 2004. Pathogenicity and immunogenicity of influenza viruses with genes from the 1918 pandemic virus. *Proc Natl Acad Sci U S A* **101**:3166-71.

This paper reports the generation of recombinant influenzaviruses carrying two to five genes of the “1918 Influenza A virus”; the demonstration that these viruses are highly virulent in mice; and that vaccination against these viruses is possible.

NIH Grants:

1	100	1R01AI050619-01	TAUBENBERGER, JEFFERY	<u>Complete Characterization of the 1918 Influenza Virus</u>
		Total: \$785,400	\$196,350 2005 Taubenberger, Jeffery K AMERICAN REGISTRY OF PATHOLOGY, INC. WASHINGTON DC, DC \$196,350 2004 Taubenberger, Jeffery K AMERICAN REGISTRY OF PATHOLOGY, INC. WASHINGTON DC, DC \$196,350 2003 Taubenberger, Jeffery K AMERICAN REGISTRY OF PATHOLOGY, INC. WASHINGTON, DC \$196,350 2002 Taubenberger, Jeffery K AMERICAN REGISTRY OF PATHOLOGY, INC. WASHINGTON, DC	
2	19	1P01AI058113-01	GARCIA-SASTRE, ADOLFO	<u>MOLECULAR AND BIOLOGICAL CHARACTERIZATION OF SPANISH FLU</u>
		Total: \$2,757,597	\$2,757,597 2004 Garciasastre, Adolfo MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY	

Variola virus

Taxonomy: Family *Poxviridae*, Subfamily: *Chordopoxvirinae*, Genus *Orthopoxvirus*, Species *Variola virus*, Virus: Variola virus.

Publications:

1. **Shchelkunov, S. N., A. V. Totmenin, V. N. Loparev, P. F. Safronov, V. V. Gutorov, V. E. Chizhikov, J. C. Knight, J. M. Parsons, R. F. Massung, and J. J. Esposito.** 2000. Alastrim smallpox variola minor virus genome DNA sequences. *Virology* **266**:361-86. This paper describes the cloning and sequencing of individual genomic fragments of a strain of Alastrim-causing *Variola virus*, and the final determination of the almost complete sequence.
2. **Loparev, V. N., R. F. Massung, J. J. Esposito, and H. Meyer.** 2001. Detection and differentiation of old world orthopoxviruses: restriction fragment length polymorphism of the crmB gene region. *J Clin Microbiol* **39**:94-100. This paper describes the development of a restriction fragment length polymorphism assay to differentiate various poxviruses including *Camelpoxvirus*, *Monkeypox virus*, and *Variola virus*.
3. **Baker, R. O., M. Bray, and J. W. Huggins.** 2003. Potential antiviral therapeutics for smallpox, monkeypox and other orthopoxvirus infections. *Antiviral Res* **57**:13-23. This paper describes the evaluation of 24 different potential antivirals for their activity against *Variola virus* (35 strains), *Monkeypox virus*, and *Camelpox virus*. Several active compounds were isolated.
4. **Chu, C. K., Y. H. Jin, R. O. Baker, and J. Huggins.** 2003. Antiviral activity of cyclopentenyl nucleosides against orthopox viruses (Smallpox, monkeypox and cowpox). *Bioorg Med Chem Lett* **13**:9-12. This paper describes the synthesis and testing of novel antivirals for antiviral activity against *Variola virus* and *Monkeypox virus*. Several active compounds are described.
5. **Jin, Y. H., P. Liu, J. Wang, U. Das, R. Baker, J. Huggins, and C. K. Chu.** 2003. Practical synthesis of D- and l-2-cyclopentenone and their utility for the synthesis of carbocyclic antiviral nucleosides against orthopox viruses (smallpox, monkeypox, and cowpox virus). *J Org Chem* **68**:9012-8. This paper describes the synthesis and testing of novel antivirals for antiviral activity against *Variola virus* and *Monkeypox virus*. Several active compounds are described.
6. **Laassri, M., V. Chizhikov, M. Mikheev, S. Shchelkunov, and K. Chumakov.** 2003. Detection and discrimination of orthopoxviruses using microarrays of immobilized oligonucleotides. *J Virol Methods* **112**:67-78. This paper describes the creation of a novel diagnostic microarray system that can identify and differentiate *Variola virus* and *Monkeypox virus*.
7. **Sofi Ibrahim, M., D. A. Kulesh, S. S. Saleh, I. K. Damon, J. J. Esposito, A. L. Schmaljohn, and P. B. Jahrling.** 2003. Real-time PCR assay to detect smallpox virus. *J Clin Microbiol* **41**:3835-9. This paper describes the development of a real-time 5' nuclease PCR assay (also known as the TaqMan assay) for the rapid diagnosis of *Variola virus*. 48 different strains of *Variola virus* were used. Controls included *Camelpox virus*, and *Monkeypox virus*.
8. **Jahrling, P. B., L. E. Hensley, M. J. Martinez, J. W. Leduc, K. H. Rubins, D. A. Relman, and J. W. Huggins.** 2004. Exploring the potential of variola virus infection of cynomolgus macaques as a model for human smallpox. *Proc Natl Acad Sci U S A* **101**:15196-200.

This paper describes the development of a monkey model for smallpox. *Cynomolgus* macaques were exposed to several variola strains through aerosol and/or i.v. routes. Two strains, Harper and India 7124, produced uniform acute lethality when inoculated i.v. in high doses. Lower doses resulted in less fulminant, systemic disease and lower mortality. The pathology of the infected monkeys is described.

9. **Olson, V. A., T. Laue, M. T. Laker, I. V. Babkin, C. Drosten, S. N. Shchelkunov, M. Niedrig, I. K. Damon, and H. Meyer.** 2004. Real-time PCR system for detection of orthopoxviruses and simultaneous identification of smallpox virus. *J Clin Microbiol* **42**:1940-6.

This paper describes the development of a real-time PCR system for various orthopoxviruses including *Variola virus*, *Monkeypox virus*, *Camelpox virus*, and *Cowpox virus*. Several active compounds were isolated.

10. **Rubins, K. H., L. E. Hensley, P. B. Jahrling, A. R. Whitney, T. W. Geisbert, J. W. Huggins, A. Owen, J. W. Leduc, P. O. Brown, and D. A. Relman.** 2004. The host response to smallpox: analysis of the gene expression program in peripheral blood cells in a nonhuman primate model. *Proc Natl Acad Sci U S A* **101**:15190-5.

This paper describes the molecular and cellular features of hemorrhagic smallpox in *Cynomolgus* macaques, using cDNA microarrays to analyze host gene expression patterns in sequential blood samples from infected animals.

NIH Grants: None identified.

2 Work with agent requiring Biosafety Level-4

Côte d'Ivoire ebolavirus

Taxonomy: Order *Mononegavirales*, Family *Filoviridae*, Genus *Ebolavirus*, Species: *Côte d'Ivoire ebolavirus*, Virus: Côte d'Ivoire ebolavirus

Publications: None identified.

NIH Grants: None identified.

Crimean-Congo hemorrhagic fever virus

Taxonomy: Family *Bunyaviridae*, Genus *Nairovirus*, Species: *Crimean-Congo hemorrhagic fever virus*, Species *Crimean-Congo hemorrhagic fever virus*, Virus: Crimean-Congo hemorrhagic fever virus, Hazara virus, Kodzha virus, Khasan virus.

Publications:

1. **Sanchez, A. J., M. J. Vincent, and S. T. Nichol.** 2002. Characterization of the glycoproteins of Crimean-Congo hemorrhagic fever virus. *J Virol* **76**:7263-75.
This paper describes the cloning, sequencing, and characterization of the CCHFV M RNA segment, and the analysis of the derived proteins.
2. **Yashina, L., I. Petrova, S. Seregin, O. Vyshemirskii, D. Lvov, V. Aristova, J. Kuhn, S. Morzunov, V. Gutorov, I. Kuzina, G. Tyunnikov, S. Netesov, and V. Petrov.** 2003. Genetic variability of Crimean-Congo haemorrhagic fever virus in Russia and Central Asia. *J Gen Virol* **84**:1199-206.
This paper describes the phylogenetic characterization of S RNA segment fragments of CCHFV isolates from Kazakhstan and Uzbekistan.
3. **Yashina, L., O. Vyshemirskii, S. Seregin, I. Petrova, E. Samokhvalov, D. Lvov, V. Gutorov, I. Kuzina, G. Tyunnikov, Y. W. Tang, S. Netesov, and V. Petrov.** 2003. Genetic analysis of Crimean-Congo hemorrhagic fever virus in Russia. *J Clin Microbiol* **41**:860-2.
This paper describes the phylogenetic characterization of M RNA segment fragments of CCHFV isolates from Russia.
4. **Honig, J. E., J. C. Osborne, and S. T. Nichol.** 2004. Crimean-Congo hemorrhagic fever virus genome L RNA segment and encoded protein. *Virology* **321**:29-35.

- This paper describes the CCHFV L gene and its expression product.
5. **Paragas, J., C. A. Whitehouse, T. P. Endy, and M. Bray.** 2004. A simple assay for determining antiviral activity against Crimean-Congo hemorrhagic fever virus. *Antiviral Res* **62**:21-5.
This paper describes a screening method for discovering new antiviral compounds directed against CCHFV using SW-13 cells and an in vitro neutral red uptake assay.
 6. **Bertolotti-Ciarlet, A., J. Smith, K. Strecker, J. Paragas, L. A. Altamura, J. M. McFalls, N. Frias-Staheli, A. Garcia-Sastre, C. S. Schmaljohn, and R. W. Doms.** 2005. Cellular localization and antigenic characterization of crimean-congo hemorrhagic fever virus glycoproteins. *J Virol* **79**:6152-61.
This paper reports the processing and intracellular localization of the CCHFV glycoproteins as well as their neutralization and protection determinants.

NIH Grants:

1	5	1R21AI063308-01	DOMS, ROBERT	<u>Crimean congo hemorrhagic fever virus glycoproteins</u>
Total: \$311,902		\$311,902 2005 Doms, Robert W UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA		

Guanarito virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species *Guanarito virus*, Virus: Guanarito virus, INH-95551 virus.

Publications:

1. **Weaver, S. C., R. A. Salas, N. de Manzione, C. F. Fulhorst, G. Duno, A. Utrera, J. N. Mills, T. G. Ksiazek, D. Tovar, and R. B. Tesh.** 2000. Guanarito virus (Arenaviridae) isolates from endemic and outlying localities in Venezuela: sequence comparisons among and within strains isolated from Venezuelan hemorrhagic fever patients and rodents. *Virology* **266**:189-95.
This paper describes the isolation of GTOV from Venezuelan rodents and humans and their phylogenetic characterization.
2. **Archer, A. M., and R. Rico-Hesse.** 2002. High genetic divergence and recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarito, Junín, Lassa fever, Machupo, and Sabiá viruses, and their evolutionary and functional relationships.

3. **Spiropoulou, C. F., S. Kunz, P. E. Rollin, K. P. Campbell, and M. B. Oldstone. 2002.** New World arenavirus clade C, but not clade A and B viruses, utilizes alpha-dystroglycan as its major receptor. *J Virol* **76**:5140-6.
This paper comes to the conclusion that Flexal, Guanarito, Machupo, and Sabiá viruses do not use the Lassa fever virus receptor alpha-Dystroglycan.

NIH Grants:

1	36	1R21AI053428-01	FULHORST, CHARLES	<u>Rapid, accurate diagnostics for arenaviral infections</u>
Total: \$447,000		\$223,500 2003 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$223,500 2002 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX		

Hendra virus (animal experiments, “large” quantities).

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily: *Paramyxovirinae*,

Genus *Henipavirus*, Species *Hendra virus*, Virus: Hendra virus.

Publications: None identified.

NIH Grants: None identified.

Junín virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species *Junín virus*, Virus: Junín virus,

MC2 virus, XJ virus.

Publications:

1. **Garcia, J. B., S. P. Morzunov, S. Levis, J. Rowe, G. Calderon, D. Enria, M. Sabattini, M. J. Buchmeier, M. D. Bowen, and S. C. St Jeor.** 2000. Genetic diversity of the Junin virus in Argentina: geographic and temporal patterns. *Virology* **272**:127-36.
This paper describes phylogenetic analysis of various Junin virus isolates.
2. **Archer, A. M., and R. Rico-Hesse.** 2002. High genetic divergence and recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarito, Junin, Lassa fever, Machupo, and Sabia viruses, and their evolutionary and functional relationships.
3. **York, J., V. Romanowski, M. Lu, and J. H. Nunberg.** 2004. The signal peptide of the Junin arenavirus envelope glycoprotein is myristoylated and forms an essential subunit of the mature G1-G2 complex. *J Virol* **78**:10783-92.
This paper reports the assembly and function of the Junin virus envelope glycoproteins and suggests that the signal peptide of the arenavirus GP-C protein may have unusual properties.

NIH Grants:

1	100	1R21AI059355-01	NUNBERG, JACK	<u>Structure-function of Junin virus envelope glycoproteins</u>
Total: \$491,313			\$246,313 2005 Nunberg, Jack H UNIVERSITY OF MONTANA MISSOULA, MT \$245,000 2004 Nunberg, Jack H UNIVERSITY OF MONTANA MISSOULA, MT	
2	36	1R21AI053428-01	FULHORST, CHARLES	<u>Rapid, accurate diagnostics for arenaviral infections</u>
Total: \$447,000			\$223,500 2003 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$223,500 2002 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX	
3	18	1R21AI055720-01	CANNON, PAULA	<u>ENTRY PATHWAY OF NEW WORLD CLADE B ARENAVIRUSES</u>
Total: \$446,400			<ul style="list-style-type: none"> • \$223,200 2004 Cannon, Paula M CHILDREN'S HOSPITAL LOS ANGELES LOS ANGELES, CA • \$223,200 2003 Cannon, Paula M CHILDREN'S HOSPITAL LOS ANGELES LOS ANGELES, CA 	

Kyasanur Forest disease virus

Taxonomy: Family *Flaviviridae*, Genus *Flavivirus*, Species: *Kyasanur Forest disease virus*,

Virus: Kyasanur Forest disease virus, Alkhumra virus (formerly knowns as Alkhurma virus or Fakeeh virus).

Publications: None identified.

NIH Grants: None identified.

Lake Victoria marburgvirus

Taxonomy: Order *Mononegavirales*, Family *Filoviridae*, Genus *Marburgvirus*, Species *Lake*

Victoria marburgvirus, Virus: Lake Victoria marburgvirus

Publications:

1. **Geisbert, T. W., L. E. Hensley, T. R. Gibb, K. E. Steele, N. K. Jaax, and P. B. Jahrling.** 2000. Apoptosis induced in vitro and in vivo during infection by Ebola and Marburg viruses. *Lab Invest* **80**:171-86.
This paper reports the detection of apoptotic processes in tissues of nonhuman primates infected with Zaire ebolavirus and Lake Victoria marburgvirus
2. **Chan, S. Y., C. J. Empig, F. J. Welte, R. F. Speck, A. Schmaljohn, J. F. Kreisberg, and M. A. Goldsmith.** 2001. Folate receptor-alpha is a cofactor for cellular entry by Marburg and Ebola viruses. *Cell* **106**:117-26.
This paper describes the identification of a surface molecule as a potential receptor for both Zaire ebolavirus and Lake Victoria marburgvirus.
3. **Gibb, T. R., D. A. Norwood, Jr., N. Woollen, and E. A. Henchal.** 2001. Development and evaluation of a fluorogenic 5'-nuclease assay to identify Marburg virus. *Mol Cell Probes* **15**:259-66.
This paper describes the development of a diagnostic assay for the identification of Lake Victoria marburgvirus
4. **Hevey, M., D. Negley, L. VanderZanden, R. F. Tammariello, J. Geisbert, C. Schmaljohn, J. F. Smith, P. B. Jahrling, and A. L. Schmaljohn.** 2001. Marburg virus vaccines: comparing classical and new approaches. *Vaccine* **20**:586-93.
This paper describes the outcome of different vaccination strategies for the prevention of marburgvirus disease
5. **Bavari, S., C. M. Bosio, E. Wiegand, G. Ruthel, A. B. Will, T. W. Geisbert, M. Hevey, C. Schmaljohn, A. Schmaljohn, and M. J. Aman.** 2002. Lipid raft

microdomains: a gateway for compartmentalized trafficking of Ebola and Marburg viruses. *J Exp Med* **195**:593-602.

This paper reports that both Lake Victoria marburgvirus and Zaire ebolavirus exit cells via lipid rafts.

6. **Kachko, A. V., A. V. Sorokin, E. F. Belanov, A. V. Ivanova, A. A. Bukreyev, P. Collins, and S. V. Netesov.** 2002. The study of transcription and replication of the Marburg virus using a minireplicon system constructed on the basis of viral genome. *Dokl Biochem Biophys* **383**:108-12.

This paper reports the establishment of a minireplicon system for the study of replication and transcription of Lake Victoria marburgvirus

7. **Bosio, C. M., M. J. Aman, C. Grogan, R. Hogan, G. Ruthel, D. Negley, M. Mohamadzadeh, S. Bavari, and A. Schmaljohn.** 2003. Ebola and Marburg viruses replicate in monocyte-derived dendritic cells without inducing the production of cytokines and full maturation. *J Infect Dis* **188**:1630-8.

This paper describes the successful infection of dendritic cells with Lake Victoria marburgvirus and Zaire ebolavirus; and shows that infection of these cells leads to irregular maturation with defunct cytokine responses.

8. **Hevey, M., D. Negley, and A. Schmaljohn.** 2003. Characterization of monoclonal antibodies to Marburg virus (strain Musoke) glycoprotein and identification of two protective epitopes. *Virology* **314**:350-7.

This paper characterizes two novel antibodies that react with the Lake Victoria marburgvirus glycoprotein.

9. **Warfield, K. L., D. L. Swenson, D. L. Negley, A. L. Schmaljohn, M. J. Aman, and S. Bavari.** 2004. Marburg virus-like particles protect guinea pigs from lethal Marburg virus infection. *Vaccine* **22**:3495-502.

This paper reports that Lake Victoria marburgvirus-like particles can protect against infection with virus.

10. **Swenson, D. L., K. L. Warfield, D. L. Negley, A. Schmaljohn, M. J. Aman, and S. Bavari.** 2005. Virus-like particles exhibit potential as a pan-filovirus vaccine for both Ebola and Marburg viral infections. *Vaccine* **23**:3033-42.

This paper reports that filovirus-like particles can protect against both Lake Victoria marburgvirus and Zaire ebolavirus.

NIH Grants:

1	80	1U01AI053876-01	SMITH, JONATHAN	<u>Alphavirus Replicon Vaccines against Marburg Virus</u>
Total: \$5,882,478			<ul style="list-style-type: none"> \$1,843,827 2004 Smith, Jonathan ICORIA, INC. RESEARCH TRIANGLE PARK, NC \$2,906,025 2003 Smith, Jonathan ALPHAVAX HUMAN VACCINES, INC. RESEARCH TRIANGLE PARK, NC \$1,132,626 2002 Smith, Jonathan F ALPHAVAX HUMAN VACCINES, 	

			INC. RESEARCH TRIANGLE PARK, NC	
2	79	1Z01AI000834-06	GARBOCZI, DAVID	<u>Expression And Crystallization Of Membrane Proteins</u>
3	47	1U54AI057168-010002	BRODER, CHRISTOPHER	<u>Hemorrhagic Fever</u>
Total: \$22,072,698 *			<ul style="list-style-type: none"> \$8,961,586 2005 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$9,124,674 2004 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD \$3,986,438 2003 Levine, Myron Max UNIVERSITY OF MARYLAND BALT PROF SCHOOL BALTIMORE, MD 	
4	47	1Z01AI000834-05	GARBOCZI, DAVID	<u>Expression And Crystallization Of Membrane Proteins</u>
5	47	1R21AI054495-01	HOPE, THOMAS	<u>Cell Biology of Filovirus Entry</u>
Total: \$545,546			<ul style="list-style-type: none"> \$272,773 2004 Hope, Thomas J UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$272,773 2003 Hope, Thomas J UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
6	47	1R21AI053302-01	MORROW, CASEY	<u>Disruption of Conserved RNA Stem-Loops in Filovirus RNA</u>
Total: \$430,500			<ul style="list-style-type: none"> \$215,250 2003 Morrow, Casey D UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$215,250 2002 Morrow, Casey D UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
7	40	1R43AI052917-01	OLIVO, PAUL	<u>Indicator cells for antiviral screening for filoviruses</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2002 Olivo, Paul D VIRRX, INC. ST. LOUIS, MO 	
8	33	1Z01AI000834-04	GARBOCZI, DAVID	<u>Expression And Crystallization Of Membrane Proteins</u>
9	32	1R21AI056214-01	KATZE, MICHAEL	<u>Proteomic Analysis of the Innate Antiviral Response</u>
Total: \$516,278			<p>\$251,689 2004 Katze, Michael G UNIVERSITY OF WASHINGTON SEATTLE, WA</p> <p>\$264,589 2003 Katze, Michael G UNIVERSITY OF WASHINGTON SEATTLE, WA</p>	
10	32	1U19AI056540-010002	NAIR, VASU	<u>Nucleoside Therapeutics Against Pox and Filo Viruses</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	

				<ul style="list-style-type: none"> • \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL • \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL
11	32	2R44AI052917-02	OLIVO, PAUL	<u>Indicator cells for antiviral screening for filoviruses</u>
Total: \$725,891			\$368,309 2005 Olivo, Paul D ORION GENOMICS, LLC ST. LOUIS, MO \$357,582 2004 Olivo, Paul D JACOBS FACILITIES, INC. ST LOUIS, MO	
12	32	1U19AI056540-010001	SCHNELLER, STEWART	<u>Methyltransferase Inhibitors as Pox and Filo Antivirals</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> • \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL • \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL • \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	
13	32	1Z01BM002007-01	WILSON, CAROLYN	<u>Critical Amino Acid Residues on Filovirus Glycoproteins</u>
14	27	1R21AI059270-01	PATHAK, ASHISH	<u>New Adjuvant Technologies for a Marburg Virus Vaccine</u>
Total: \$840,676			<ul style="list-style-type: none"> • \$419,310 2005 Pathak, Ashish K SOUTHERN RESEARCH INSTITUTE BIRMINGHAM, AL • \$421,366 2004 Pathak, Ashish K SOUTHERN RESEARCH INSTITUTE BIRMINGHAM, AL 	
15	16	1R01AI048053-01	BURTON, DENNIS	<u>THE ANTIVIRAL ACTIVITY OF ANTIBODIES TO A FILOVIRUS</u>
Total: \$1,520,348			<ul style="list-style-type: none"> • \$310,275 2004 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$310,275 2003 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA • \$279,248 2002 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA • \$310,275 2001 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA • \$310,275 2000 BURTON, DENNIS R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
16	16	1U54AI057153-010007	CHEN, LIAOHAI	<u>Early Detection of Hemorrhagic Fevers-Career Development</u>
Total: \$20,734,800 *			<ul style="list-style-type: none"> • \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL • \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO 	

			CHICAGO, IL	
17	16	1U19AI056540-010003	CHU, DAVID	<u>Carbocyclic Nucleosides for Emerging Viral Diseases</u>
Total: \$3,041,586 *			<p>\$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL</p> <p>\$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL</p> <p>\$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL</p>	
18	16	1R43AI056525-01	COLLETT, MARC	<u>Antiviral Drugs Against Hemorrhagic Fever Viruses</u>
Total: \$909,502			<ul style="list-style-type: none"> \$909,502 2003 Collett, Marc S VIROPHARMA, INC. EXTON, PA 	
19	16	1Z01BP005021-01	DUNCAN, ROBERT	<u>Pathogen Chip for Detection of Bioterrorism Agents in BI</u>
20	16	1U01AI054374-01	HENRICKSON, KELLY	<u>Multiplex PCR Detection of CDC 'A' Bioterrorism Agents</u>
Total: \$1,346,667			<ul style="list-style-type: none"> \$496,873 2005 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$391,730 2004 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI \$458,064 2003 Henrickson, Kelly J MEDICAL COLLEGE OF WISCONSIN MILWAUKEE, WI 	
21	7	1U19AI056540-01	SCHNELLER, STEWART	<u>Therapeutics for Pox, Filo and Other Viral Pathogens</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	

Lassa virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species: *Lassa virus*, Virus: *Lassa virus*, GA391 virus, LP virus, Josiah virus.

Publications:

1. **Bausch, D. G., P. E. Rollin, A. H. Demby, M. Coulibaly, J. Kanu, A. S. Conteh, K. D. Wagoner, L. K. McMullan, M. D. Bowen, C. J. Peters, and T. G. Ksiazek.** 2000. Diagnosis and clinical virology of Lassa fever as evaluated by enzyme-linked immunosorbent assay, indirect fluorescent-antibody test, and virus isolation. *J Clin Microbiol* **38**:2670-7.
This paper describes the comparison of ELISA and IFA with virus isolation or reverse transcription-PCR (RT-PCR) to determine the best method for the diagnosis of Lassa virus infection.
2. **Bowen, M. D., P. E. Rollin, T. G. Ksiazek, H. L. Hustad, D. G. Bausch, A. H. Demby, M. D. Bajani, C. J. Peters, and S. T. Nichol.** 2000. Genetic diversity among Lassa virus strains. *J Virol* **74**:6992-7004.
This paper describes the amplification and cloning of the Lassa S segment RNA and the elaboration of a lassa phylogenetic tree based on the sequences of the NP and glycoprotein genes.
3. **Fisher-Hoch, S. P., L. Hutwagner, B. Brown, and J. B. McCormick.** 2000. Effective vaccine for lassa fever. *J Virol* **74**:6777-83.
This paper describes the more or less successful vaccination of macaques with vaccinia virus-expressed Lassa structural proteins.
4. **Pushko, P., J. Geisbert, M. Parker, P. Jahrling, and J. Smith.** 2001. Individual and bivalent vaccines based on alphavirus replicons protect guinea pigs against infection with Lassa and Ebola viruses. *J Virol* **75**:11677-85.
This paper describes the evaluation of individual vaccines for Lassa virus and bivalent vaccines for Lassa and Zaire ebolavirus that are based on an RNA replicon vector derived from an attenuated strain of Venezuelan equine encephalitis virus.
5. **Archer, A. M., and R. Rico-Hesse.** 2002. High genetic divergence and recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarito, Junín, Lassa fever, Machupo, and Sabiá viruses, and their evolutionary and functional relationships.
6. **Mahanty, S., K. Hutchinson, S. Agarwal, M. McRae, P. E. Rollin, and B. Pulendran.** 2003. Cutting edge: impairment of dendritic cells and adaptive immunity by Ebola and Lassa viruses. *J Immunol* **170**:2797-801.
This paper describes that Zaire ebolavirus and Lassa fever virus infect human monocyte-derived dendritic cells and impair their function.
7. **Kunz, S., J. M. Rojek, M. Perez, C. F. Spiropoulou, and M. B. Oldstone.** 2005. Characterization of the interaction of Lassa fever virus with its cellular receptor alpha-dystroglycan. *J Virol* **79**:5979-87.
This paper defines the molecular interaction of Lassa virus with its receptor.

NIH Grants:

1	36	1R21AI053428-01	FULHORST, CHARLES	<u>Rapid, accurate diagnostics for arenaviral infections</u>
Total: \$447,000			<p>\$223,500 2003 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX</p> <p>\$223,500 2002 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX</p>	
1	100	1R03AI053160-01	BASLER, CHRISTOPHER	<u>Lassa and Nipah Virus Interferon-Antagonists</u>
Total: \$169,500			<p>\$84,750 2003 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY</p> <p>\$84,750 2002 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY</p>	
2	100	1R01AI050840-01	BUCHMEIER, MICHAEL	<u>Vaccination for LASSA FEVER</u>
Total: \$2,102,214			<ul style="list-style-type: none"> \$594,797 2005 Buchmeier, Michael J SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$579,359 2004 Buchmeier, Michael J SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$586,673 2003 Buchmeier, Michael J SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$341,385 2002 Buchmeier, Michael J SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
3	100	1R21AI055625-01	KAWAOKA, YOSHIHIRO	<u>Molecular Pathogenesis of Lassa virus infection</u>
Total: \$582,000			<p>\$291,000 2004 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI</p> <p>\$291,000 2003 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI</p>	
4	100	1R01AI052367-01A1	LUKASHEVICH, IGOR	<u>MOP/LAS chimeric vaccine against Lassa fever</u>
Total: \$812,907			<ul style="list-style-type: none"> \$381,418 2005 Lukashovich, Igor S UNIVERSITY OF MD BIOTECHNOLOGY INSTITUTE BALTIMORE, MD \$431,489 2004 Lukashovich, Igor S UNIVERSITY OF MD BIOTECHNOLOGY INSTITUTE BALTIMORE, MD 	
5	100	1R21AI052367-01	LUKASHEVICH, IGOR	<u>Mopeia/Lassa Virus Reassortants as Lassa Fever Vaccines</u>
Total: \$399,055			<ul style="list-style-type: none"> \$399,055 2002 Lukashovich, Igor S UNIVERSITY OF MD BIOTECHNOLOGY INSTITUTE BALTIMORE, MD 	
6	78	1R21AI059247-01	SALVATO, MARIA	<u>Dendritic Cell Targeting of Lassa Fever Vaccine</u>
Total: \$222,750			<ul style="list-style-type: none"> \$222,750 2004 Salvato, Maria S UNIVERSITY OF MD BIOTECHNOLOGY 	

			INSTITUTE BALTIMORE, MD	
7	78	1U01AI056412-01	THORPE, PHILIP	<u>Novel Anti-Viral Agents for Treating Lassa Fever</u>
Total: \$933,954			<ul style="list-style-type: none"> \$357,889 2005 Thorpe, Philip E UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$379,657 2004 Thorpe, Philip E UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX \$196,408 2003 Thorpe, Philip E UNIVERSITY OF TEXAS SW MED CTR/DALLAS DALLAS, TX 	
8	62	1R21AI053619-01	SALVATO, MARIA	<u>Early Response to Hemorrhagic Fever-Causing Arenaviruses</u>
Total: \$409,125			<ul style="list-style-type: none"> \$198,500 2003 Salvato, Maria S UNIVERSITY OF MD BIOTECHNOLOGY INSTITUTE BALTIMORE, MD \$210,625 2002 Salvato, Maria S UNIVERSITY OF MD BIOTECHNOLOGY INSTITUTE BALTIMORE, MD 	
9	47	1R01AI055540-01A1	OLDSTONE, MICHAEL	<u>Therapeutics to Prevent/Treat Lassa Fever Virus</u>
Total: \$782,084			<ul style="list-style-type: none"> \$469,250 2005 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$312,834 2004 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA 	
10	47	1R21AI055540-01	OLDSTONE, MICHAEL	<u>Therapeutics to Prevent/Treat Lassa Fever Virus</u>
Total: \$469,250			<ul style="list-style-type: none"> \$469,250 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA 	
11	31	1R21AI053514-01	COMPANS, RICHARD	<u>Chimeric VLP Vaccines for Viral Hemorrhagic Fever</u>
Total: \$456,000			<ul style="list-style-type: none"> \$228,000 2003 Compans, Richard W EMORY UNIVERSITY ATLANTA, GA \$228,000 2002 Compans, Richard W EMORY UNIVERSITY ATLANTA, GA 	
12	16	1R01AI045927-01A1	OLDSTONE, MICHAEL	<u>ARENAVIRUS RECEPTOR-- STRUCTURE/FUNCTION STUDIES</u>
Total: \$1,551,375			<ul style="list-style-type: none"> \$310,275 2004 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$310,275 2003 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$310,275 2002 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$310,275 2001 Oldstone, Michael B SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$310,275 2000 OLDSTONE, MICHAEL B SCRIPPS RESEARCH INSTITUTE 	

	SAN DIEGO, CA
--	---------------

Machupo virus

Taxonomy: Family *Arenaviridae*, Genus *Arenavirus*, Species: *Machupo virus*, Virus:: Machupo virus, AA288-77 virus

Publications:

1. **Archer, A. M., and R. Rico-Hesse.** 2002. High genetic divergence and recombination in Arenaviruses from the Americas. *Virology* **304**:274-81.
This paper describes the sequencing and characterization of the S RNA segments of Flexal, Guanarito, Junín, Lassa fever, Machupo, and Sabiá viruses, and their evolutionary and functional relationships.
2. **Spiropoulou, C. F., S. Kunz, P. E. Rollin, K. P. Campbell, and M. B. Oldstone.** 2002. New World arenavirus clade C, but not clade A and B viruses, utilizes alpha-dystroglycan as its major receptor. *J Virol* **76**:5140-6.
This paper comes to the conclusion that Flexal, Guanarito, Machupo, and Sabiá viruses do not use the Lassa fever virus receptor α -Dystroglycan.

NIH Grants:

1	36	1R21AI053428-01	FULHORST, CHARLES	<u>Rapid, accurate diagnostics for arenaviral infections</u>
Total: \$447,000		\$223,500 2003 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX \$223,500 2002 Fulhorst, Charles F UNIVERSITY OF TEXAS MEDICAL BR GALVESTON GALVESTON, TX		

Nipah virus (animal experiments, “large” quantities).

Taxonomy: Order *Mononegavirales*, Family *Paramyxoviridae*, Subfamily *Paramyxovirinae*,

Genus *Henipavirus*, Virus: Nipah virus

Publications: None identified.

NIH Grants:

1	99	1R21AI059051-01	LEE, BENHUR	<u>A reverse genetic system for the study of Nipah Virus</u>
Total: \$609,028			<ul style="list-style-type: none"> • \$305,485 2005 Lee, Benhur UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA • \$303,543 2004 Lee, Benhur UNIVERSITY OF CALIFORNIA LOS ANGELES LOS ANGELES, CA 	
2	66	1K08AI060629-01	TORRES-VELEZ, FERNANDO	<u>Pathogenesis of Nipah Virus Infection in Guinea Pigs</u>
Total: \$187,345			<ul style="list-style-type: none"> • \$94,897 2005 Torresvelez, Fernando J UNIVERSITY OF GEORGIA ATHENS, GA • \$92,448 2004 Torresvelez, Fernando J UNIVERSITY OF GEORGIA ATHENS, GA 	

Omsk hemorrhagic fever virus

Taxonomy: Family *Flaviviridae*, Genus *Flavivirus*, Species *Omsk hemorrhagic fever virus*,

Virus: Omsk hemorrhagic fever virus

Publications:

1. **Lin, D., L. Li, D. Dick, R. E. Shope, H. Feldmann, A. D. Barrett, and M. R. Holbrook.** 2003. Analysis of the complete genome of the tick-borne flavivirus Omsk hemorrhagic fever virus. *Virology* **313**:81-90.
This paper reports the complete sequence of the OHFV genome.
2. **Li, L., P. E. Rollin, S. T. Nichol, R. E. Shope, A. D. Barrett, and M. R. Holbrook.** 2004. Molecular determinants of antigenicity of two subtypes of the tick-borne flavivirus Omsk haemorrhagic fever virus. *J Gen Virol* **85**:1619-24.
This paper compares the amino acid sequences of the surface proteins of two strains of OHFV and determines their antigenic differences.
3. **Holbrook, M. R., J. F. Aronson, G. A. Campbell, S. Jones, H. Feldmann, and A. D. Barrett.** 2005. An animal model for the tickborne flavivirus-Omsk hemorrhagic fever virus. *J Infect Dis* **191**:100-8.
This paper reports the establishment of a mouse model of OFHV.

NIH Grants: None identified.

Reston ebolavirus

Taxonomy: Order *Mononegavirales*, Family *Filoviridae*, Genus *Ebolavirus*, Species *Reston ebolavirus*, Virus: Reston ebolavirus

Publications:

1. **Hutchinson, K. L., F. Villinger, M. E. Miranda, T. G. Ksiazek, C. J. Peters, and P. E. Rollin.** 2001. Multiplex analysis of cytokines in the blood of cynomolgus macaques naturally infected with Ebola virus (Reston serotype). *J Med Virol* **65**:561-6.
This paper describes the cytokine response of monkeys infected with REBOV.

NIH Grants: None identified.

Sudan ebolavirus

Taxonomy: Order *Mononegavirales*, Family *Filoviridae*, Genus *Ebolavirus*, Species *Sudan ebolavirus*, Virus: Sudan ebolavirus

Publications:

1. **Gibb, T. R., D. A. Norwood, Jr., N. Woollen, and E. A. Henchal.** 2001. Development and evaluation of a fluorogenic 5' nuclease assay to detect and differentiate between Ebola virus subtypes Zaire and Sudan. *J Clin Microbiol* **39**:4125-30.
This paper describes the development of a diagnostic assay for the identification of Sudan and Zaire ebolaviruses
2. **Sanchez, A., M. Lukwiya, D. Bausch, S. Mahanty, A. J. Sanchez, K. D. Wagoner, and P. E. Rollin.** 2004. Analysis of human peripheral blood samples from fatal and nonfatal cases of Ebola (Sudan) hemorrhagic fever: cellular responses, virus load, and nitric oxide levels. *J Virol* **78**:10370-7.
This paper reports on the patho-clinical changes in sera from naturally SEBOV-infected humans.
3. **Towner, J. S., P. E. Rollin, D. G. Bausch, A. Sanchez, S. M. Crary, M. Vincent, W. F. Lee, C. F. Spiropoulou, T. G. Ksiazek, M. Lukwiya, F. Kaducu, R. Downing, and S. T. Nichol.** 2004. Rapid diagnosis of Ebola hemorrhagic fever by reverse transcription-PCR in an outbreak setting and assessment of patient viral load as a predictor of outcome. *J Virol* **78**:4330-41.

This paper reports the evaluation of a PCR-based diagnostic assay during a natural outbreak of Sudan ebolavirus.

NIH Grants: None identified.

Tick-borne encephalitis virus (Far Eastern subtype, formerly known as Russian spring-summer encephalitis virus; Western European subtype, formerly known as Central European encephalitis virus)

Taxonomy: Family *Flaviviridae*, Genus *Flavivirus*, Species: *Tick-borne encephalitis virus*, Virus: Absettarov, Hanzalova, Hypr, Kumlinge, Neudoerfl virus, Sofjin virus.

Publications:

1. **Pletnev, A. G., G. G. Karganova, T. I. Dzhivanyan, V. A. Lashkevich, and M. Bray.** 2000. Chimeric Langat/Dengue viruses protect mice from heterologous challenge with the highly virulent strains of tick-borne encephalitis virus. *Virology* **274**:26-31.
This paper reports the creation of recombinant dengue viruses encoding Langat virus preM and E proteins. In mice, these chimeric viruses protected against challenge with tick-borne encephalitis virus.
2. **Pletnev, A. G., M. Bray, K. A. Hanley, J. Speicher, and R. Elkins.** 2001. Tick-borne Langat/mosquito-borne dengue flavivirus chimera, a candidate live attenuated vaccine for protection against disease caused by members of the tick-borne encephalitis virus complex: evaluation in rhesus monkeys and in mosquitoes. *J Virol* **75**:8259-67.

NIH Grants: None identified.

Variola virus

See EDA/1 “Work with eradicated agent”

Zaire ebolavirus

Taxonomy: Order *Mononegavirales*, Family *Filoviridae*, Genus *Ebolavirus*, Species *Zaire*

ebolavirus, Virus: Zaire ebolavirus

Publications:

1. **Bray, M., J. Driscoll, and J. W. Huggins.** 2000. Treatment of lethal Ebola virus infection in mice with a single dose of an S-adenosyl-L-homocysteine hydrolase inhibitor. *Antiviral Res* **45**:135-47.
This paper reports the successful treatment of mice infected with mouse-adapted Zaire ebolavirus.
2. **Geisbert, T. W., L. E. Hensley, T. R. Gibb, K. E. Steele, N. K. Jaax, and P. B. Jahrling.** 2000. Apoptosis induced in vitro and in vivo during infection by Ebola and Marburg viruses. *Lab Invest* **80**:171-86.
This paper reports the detection of apoptotic processes in tissues of nonhuman primates infected with Zaire ebolavirus and Lake Victoria marburgvirus.
3. **Pushko, P., M. Bray, G. V. Ludwig, M. Parker, A. Schmaljohn, A. Sanchez, P. B. Jahrling, and J. F. Smith.** 2000. Recombinant RNA replicons derived from attenuated Venezuelan equine encephalitis virus protect guinea pigs and mice from Ebola hemorrhagic fever virus. *Vaccine* **19**:142-53.
This paper reports a successful vaccination of guinea pigs against Zaire ebolavirus.
4. **Sullivan, N. J., A. Sanchez, P. E. Rollin, Z. Y. Yang, and G. J. Nabel.** 2000. Development of a preventive vaccine for Ebola virus infection in primates. *Nature* **408**:605-9.
This paper reports successful vaccination of nonhuman primates against Zaire ebolavirus.
5. **Wilson, J. A., M. Hevey, R. Bakken, S. Guest, M. Bray, A. L. Schmaljohn, and M. K. Hart.** 2000. Epitopes involved in antibody-mediated protection from Ebola virus. *Science* **287**:1664-6.
This paper reports the development of monoclonal antibodies to Zaire ebolavirus proteins, and their protective effects in animal models.
6. **Bray, M.** 2001. The role of the Type I interferon response in the resistance of mice to filovirus infection. *J Gen Virol* **82**:1365-73.
This paper describes the type I interferon response in mice infected with a Zaire ebolavirus.
7. **Bray, M., S. Hatfill, L. Hensley, and J. W. Huggins.** 2001. Haematological, biochemical and coagulation changes in mice, guinea-pigs and monkeys infected with a mouse-adapted variant of Ebola Zaire virus. *J Comp Pathol* **125**:243-53.
This paper describes the pathology of different animals infected with a mouse-adapted Zaire ebolavirus.
8. **Chan, S. Y., C. J. Empig, F. J. Welte, R. F. Speck, A. Schmaljohn, J. F. Kreisberg, and M. A. Goldsmith.** 2001. Folate receptor-alpha is a cofactor for cellular entry by Marburg and Ebola viruses. *Cell* **106**:117-26.

- This paper describes the identification of a surface molecule as a potential receptor for both Zaire ebolavirus and Lake Victoria marburgvirus.
9. **Gibb, T. R., M. Bray, T. W. Geisbert, K. E. Steele, W. M. Kell, K. J. Davis, and N. K. Jaax.** 2001. Pathogenesis of experimental Ebola Zaire virus infection in BALB/c mice. *J Comp Pathol* **125**:233-42.
This paper describes the pathology of Zaire ebolavirus in mice.
 10. **Gibb, T. R., D. A. Norwood, Jr., N. Woollen, and E. A. Henchal.** 2001. Development and evaluation of a fluorogenic 5' nuclease assay to detect and differentiate between Ebola virus subtypes Zaire and Sudan. *J Clin Microbiol* **39**:4125-30.
This paper describes the development of a diagnostic assay for the identification of Sudan and Zaire ebolaviruses
 11. **Gupta, M., S. Mahanty, R. Ahmed, and P. E. Rollin.** 2001. Monocyte-derived human macrophages and peripheral blood mononuclear cells infected with ebola virus secrete MIP-1alpha and TNF-alpha and inhibit poly-IC-induced IFN-alpha in vitro. *Virology* **284**:20-5.
This paper describes the cytokine responses of mononuclear cells after exposure to Zaire ebolavirus.
 12. **Gupta, M., S. Mahanty, M. Bray, R. Ahmed, and P. E. Rollin.** 2001. Passive transfer of antibodies protects immunocompetent and immunodeficient mice against lethal Ebola virus infection without complete inhibition of viral replication. *J Virol* **75**:4649-54.
This paper reports that the immunization of mice with antibodies against Zaire ebolavirus can protect these animals from infection with this virus.
 13. **Pushko, P., J. Geisbert, M. Parker, P. Jahrling, and J. Smith.** 2001. Individual and bivalent vaccines based on alphavirus replicons protect guinea pigs against infection with Lassa and Ebola viruses. *J Virol* **75**:11677-85.
This paper describes the evaluation of individual vaccines for Lassa virus and bivalent vaccines for Lassa and Zaire ebolavirus that are based on an RNA replicon vector derived from an attenuated strain of Venezuelan equine encephalitis virus.
 14. **Steele, K., B. Crise, A. Kuehne, and W. Kell.** 2001. Ebola virus glycoprotein demonstrates differential cellular localization in infected cell types of nonhuman primates and guinea pigs. *Arch Pathol Lab Med* **125**:625-30.
This paper describes the localization of GP and VP40 antigen in ZEBOV-infected guinea pigs and nonhuman primates using immunohistochemistry.
 15. **Steele, K. E., K. Stabler, and L. VanderZanden.** 2001. Cutaneous DNA vaccination against Ebola virus by particle bombardment: histopathology and alteration of CD3-positive dendritic epidermal cells. *Vet Pathol* **38**:203-15.
This paper describes the histological changes of guinea pigs and mice after DNA vaccination against ZEBOV.
 16. **Wilson, J. A., M. Bray, R. Bakken, and M. K. Hart.** 2001. Vaccine potential of Ebola virus VP24, VP30, VP35, and VP40 proteins. *Virology* **286**:384-90.
This paper evaluates the use of different ZEBOV proteins for vaccine development.
 17. **Wilson, J. A., and M. K. Hart.** 2001. Protection from Ebola virus mediated by cytotoxic T lymphocytes specific for the viral nucleoprotein. *J Virol* **75**:2660-4.

- This paper reports that C57BL/6 mice vaccinated with Venezuelan equine encephalitis virus replicons encoding the ZEBOV nucleoprotein survived lethal challenge with ZEBOV.
18. **Bavari, S., C. M. Bosio, E. Wiegand, G. Ruthel, A. B. Will, T. W. Geisbert, M. Hevey, C. Schmaljohn, A. Schmaljohn, and M. J. Aman.** 2002. Lipid raft microdomains: a gateway for compartmentalized trafficking of Ebola and Marburg viruses. *J Exp Med* **195**:593-602.
This paper reports that both Lake Victoria marburgvirus and Zaire ebolavirus exit cells via lipid rafts.
 19. **Bray, M., J. L. Raymond, T. Geisbert, and R. O. Baker.** 2002. 3-deazaneplanocin A induces massively increased interferon-alpha production in Ebola virus-infected mice. *Antiviral Res* **55**:151-9.
This paper reports the detection of interferon in ZEBOV-infected mice treated with an antiviral.
 20. **Geisbert, T. W., L. E. Hensley, J. B. Geisbert, and P. B. Jahrling.** 2002. Evidence against an important role for infectivity-enhancing antibodies in Ebola virus infections. *Virology* **293**:15-9.
This paper reports that another publisher experiment could not be repeated.
 21. **Geisbert, T. W., P. Pushko, K. Anderson, J. Smith, K. J. Davis, and P. B. Jahrling.** 2002. Evaluation in nonhuman primates of vaccines against Ebola virus. *Emerg Infect Dis* **8**:503-7.
This paper compares different vaccination approaches for the prevention of ZEBOV infection.
 22. **Gibb, T. R., D. A. Norwood, Jr., N. Woollen, and E. A. Henchal.** 2002. Viral replication and host gene expression in alveolar macrophages infected with Ebola virus (Zaire strain). *Clin Diagn Lab Immunol* **9**:19-27.
This paper reports the successful infection of macrophages with ZEBOV and the induced gene expression
 23. **Hensley, L. E., H. A. Young, P. B. Jahrling, and T. W. Geisbert.** 2002. Proinflammatory response during Ebola virus infection of primate models: possible involvement of the tumor necrosis factor receptor superfamily. *Immunol Lett* **80**:169-79.
This paper reports the cytokine responses of primates infected with ZEBOV.
 24. **Neumann, G., H. Feldmann, S. Watanabe, I. Lukashevich, and Y. Kawaoka.** 2002. Reverse genetics demonstrates that proteolytic processing of the Ebola virus glycoprotein is not essential for replication in cell culture. *J Virol* **76**:406-10.
This paper describes the establishment of a recombinant ZEBOV based on cDNA.
 25. **Parren, P. W., T. W. Geisbert, T. Maruyama, P. B. Jahrling, and D. R. Burton.** 2002. Pre- and postexposure prophylaxis of Ebola virus infection in an animal model by passive transfer of a neutralizing human antibody. *J Virol* **76**:6408-12.
This paper describes an approach to prevent Zaire ebolavirus disease using neutralizing antibodies.
 26. **Rao, M., M. Bray, C. R. Alving, P. Jahrling, and G. R. Matyas.** 2002. Induction of immune responses in mice and monkeys to Ebola virus after immunization with liposome-

- encapsulated irradiated Ebola virus: protection in mice requires CD4(+) T cells. *J Virol* **76**:9176-85.
This paper describes the immune response of mice to a novel vaccine candidate.
27. **Barrientos, L. G., B. R. O'Keefe, M. Bray, A. Sanchez, A. M. Gronenborn, and M. R. Boyd.** 2003. Cyanovirin-N binds to the viral surface glycoprotein, GP1,2 and inhibits infectivity of Ebola virus. *Antiviral Res* **58**:47-56.
This paper reports the discovery of a new-ZEBOV substance.
28. **Basler, C. F., A. Mikulasova, L. Martinez-Sobrido, J. Paragas, E. Muhlberger, M. Bray, H. D. Klenk, P. Palese, and A. Garcia-Sastre.** 2003. The Ebola virus VP35 protein inhibits activation of interferon regulatory factor 3. *J Virol* **77**:7945-56.
This paper reports that the ZEBOV protein VP35 has anti-interferon properties.
29. **Bosio, C. M., M. J. Aman, C. Grogan, R. Hogan, G. Ruthel, D. Negley, M. Mohamadzadeh, S. Bavari, and A. Schmaljohn.** 2003. Ebola and Marburg viruses replicate in monocyte-derived dendritic cells without inducing the production of cytokines and full maturation. *J Infect Dis* **188**:1630-8.
This paper describes the successful infection of dendritic cells with Lake Victoria marburgvirus and Zaire ebolavirus; and shows that infection of these cells leads to irregular maturation with defunct cytokine responses.
30. **Chepurinov, A. A., L. F. Bakulina, A. A. Dadaeva, E. N. Ustinova, T. S. Chepurnova, and J. R. Baker, Jr.** 2003. Inactivation of Ebola virus with a surfactant nanoemulsion. *Acta Trop* **87**:315-20.
This paper describes the anti-ZEBOV activity of a chemical.
31. **Crary, S. M., J. S. Towner, J. E. Honig, T. R. Shoemaker, and S. T. Nichol.** 2003. Analysis of the role of predicted RNA secondary structures in Ebola virus replication. *Virology* **306**:210-8.
This paper describes the effects of mutations in the untranslated regions of ZEBOV on replications and transcription.
32. **Geisbert, T. W., L. E. Hensley, P. B. Jahrling, T. Larsen, J. B. Geisbert, J. Paragas, H. A. Young, T. M. Fredeking, W. E. Rote, and G. P. Vlasuk.** 2003. Treatment of Ebola virus infection with a recombinant inhibitor of factor VIIa/tissue factor: a study in rhesus monkeys. *Lancet* **362**:1953-8.
This paper reports the successful treatment of ZEBOV-infected rhesus monkeys with an inhibitor of tissue factor.
33. **Geisbert, T. W., L. E. Hensley, T. Larsen, H. A. Young, D. S. Reed, J. B. Geisbert, D. P. Scott, E. Kagan, P. B. Jahrling, and K. J. Davis.** 2003. Pathogenesis of Ebola hemorrhagic fever in cynomolgus macaques: evidence that dendritic cells are early and sustained targets of infection. *Am J Pathol* **163**:2347-70.
This paper describes the pathology of ZEBOV-infected macaques; and demonstrates that dendritic cells are among the earliest cellular targets of the virus.
34. **Geisbert, T. W., H. A. Young, P. B. Jahrling, K. J. Davis, E. Kagan, and L. E. Hensley.** 2003. Mechanisms underlying coagulation abnormalities in ebola hemorrhagic fever: overexpression of tissue factor in primate monocytes/macrophages is a key event. *J Infect Dis* **188**:1618-29.

- This paper describes the pathology of ZEBOV-infected macaques; and demonstrates that macrophages are among the earliest cellular targets of the virus.
35. **Geisbert, T. W., H. A. Young, P. B. Jahrling, K. J. Davis, T. Larsen, E. Kagan, and L. E. Hensley.** 2003. Pathogenesis of Ebola hemorrhagic fever in primate models: evidence that hemorrhage is not a direct effect of virus-induced cytolysis of endothelial cells. *Am J Pathol* **163**:2371-82.
- This paper describes the pathology of ZEBOV-infected macaques; and demonstrates that hemorrhagic manifestations of the disease occur before the vascular endothelium is destroyed by the virus.
36. **Han, Z., H. Boshra, J. O. Sunyer, S. H. Zwiers, J. Paragas, and R. N. Harty.** 2003. Biochemical and functional characterization of the Ebola virus VP24 protein: implications for a role in virus assembly and budding. *J Virol* **77**:1793-800.
- This paper reports that ZEBOV VP24 is a matrix protein and plays important roles in virus budding and assembly.
37. **Licata, J. M., M. Simpson-Holley, N. T. Wright, Z. Han, J. Paragas, and R. N. Harty.** 2003. Overlapping motifs (PTAP and PPEY) within the Ebola virus VP40 protein function independently as late budding domains: involvement of host proteins TSG101 and VPS-4. *J Virol* **77**:1812-9.
- This paper demonstrated that two overlapping sequences of the ZEBOV VP40 protein can function independently while having the same overall function in virus budding.
38. **Mahanty, S., M. Gupta, J. Paragas, M. Bray, R. Ahmed, and P. E. Rollin.** 2003. Protection from lethal infection is determined by innate immune responses in a mouse model of Ebola virus infection. *Virology* **312**:415-24.
- This paper demonstrates that mice survival in ZEBOV infection is dependent on the innate immune system.
39. **Mahanty, S., K. Hutchinson, S. Agarwal, M. McRae, P. E. Rollin, and B. Pulendran.** 2003. Cutting edge: impairment of dendritic cells and adaptive immunity by Ebola and Lassa viruses. *J Immunol* **170**:2797-801.
- This paper describes that Zaire ebolavirus and Lassa fever virus infect human monocyte-derived dendritic cells and impair their function.
40. **Mellquist-Riemenschneider, J. L., A. R. Garrison, J. B. Geisbert, K. U. Saikh, K. D. Heidebrink, P. B. Jahrling, R. G. Ulrich, and C. S. Schmaljohn.** 2003. Comparison of the protective efficacy of DNA and baculovirus-derived protein vaccines for EBOLA virus in guinea pigs. *Virus Res* **92**:187-93.
- This paper reports the comparison of different vaccine approaches for the prevention of Zaire ebolavirus.
41. **Panchal, R. G., G. Ruthel, T. A. Kenny, G. H. Kallstrom, D. Lane, S. S. Badie, L. Li, S. Bavari, and M. J. Aman.** 2003. In vivo oligomerization and raft localization of Ebola virus protein VP40 during vesicular budding. *Proc Natl Acad Sci U S A* **100**:15936-41.
- This paper further describes the interaction of ZEBOV VP40 with lipid rafts and its role in virus budding.
42. **Riemenschneider, J., A. Garrison, J. Geisbert, P. Jahrling, M. Hevey, D. Negley, A. Schmaljohn, J. Lee, M. K. Hart, L. Vanderzanden, D. Custer, M. Bray, A. Ruff, B. Ivins, A. Bassett, C. Rossi, and C. Schmaljohn.** 2003. Comparison of individual and

combination DNA vaccines for B. anthracis, Ebola virus, Marburg virus and Venezuelan equine encephalitis virus. *Vaccine* **21**:4071-80.

This paper reports the comparison of different vaccine approaches for the prevention of Zaire ebolavirus.

43. **Simmons, G., J. D. Reeves, C. C. Grogan, L. H. Vandenberghe, F. Baribaud, J. C. Whitbeck, E. Burke, M. J. Buchmeier, E. J. Soilleux, J. L. Riley, R. W. Doms, P. Bates, and S. Pohlmann.** 2003. DC-SIGN and DC-SIGNR bind ebola glycoproteins and enhance infection of macrophages and endothelial cells. *Virology* **305**:115-23.
This paper reports that certain surface lectins are ZEBOV attachment factors.
44. **Takada, A., H. Feldmann, T. G. Ksiazek, and Y. Kawaoka.** 2003. Antibody-dependent enhancement of Ebola virus infection. *J Virol* **77**:7539-44.
This paper reports that certain natural antibodies to ZEBOV can enhance, rather than abolish infection.
45. **Takada, A., H. Feldmann, U. Stroehrer, M. Bray, S. Watanabe, H. Ito, M. McGregor, and Y. Kawaoka.** 2003. Identification of protective epitopes on ebola virus glycoprotein at the single amino acid level by using recombinant vesicular stomatitis viruses. *J Virol* **77**:1069-74.
This paper reports protective epitopes of ZEBOV GP.
46. **Warfield, K. L., C. M. Bosio, B. C. Welcher, E. M. Deal, M. Mohamadzadeh, A. Schmaljohn, M. J. Aman, and S. Bavari.** 2003. Ebola virus-like particles protect from lethal Ebola virus infection. *Proc Natl Acad Sci U S A* **100**:15889-94.
This paper reports that ZEBOV-like particles can be used as a vaccine.
47. **Bosio, C. M., B. D. Moore, K. L. Warfield, G. Ruthel, M. Mohamadzadeh, M. J. Aman, and S. Bavari.** 2004. Ebola and Marburg virus-like particles activate human myeloid dendritic cells. *Virology* **326**:280-7.
This paper reports that both Lake Victoria marburgvirus and Zaire ebolavirus can activate dendritic cells.
48. **Gupta, M., S. Mahanty, P. Greer, J. S. Towner, W. J. Shieh, S. R. Zaki, R. Ahmed, and P. E. Rollin.** 2004. Persistent infection with ebola virus under conditions of partial immunity. *J Virol* **78**:958-67.
This paper reports the persistent infection with ZEBOV of immunocompromised mice.
49. **Reed, D. S., L. E. Hensley, J. B. Geisbert, P. B. Jahrling, and T. W. Geisbert.** 2004. Depletion of peripheral blood T lymphocytes and NK cells during the course of ebola hemorrhagic Fever in cynomolgus macaques. *Viral Immunol* **17**:390-400.
This paper reports that subfraction of T lymphocytes that gets depleted in the course of ZEBOV infection in macaques.
50. **Theriault, S., A. Groseth, G. Neumann, Y. Kawaoka, and H. Feldmann.** 2004. Rescue of Ebola virus from cDNA using heterologous support proteins. *Virus Res* **106**:43-50.
This paper demonstrates that transcription/replication of ZEBOV are neither strictly species-specific nor genus-specific.
51. **Warfield, K. L., J. G. Perkins, D. L. Swenson, E. M. Deal, C. M. Bosio, M. J. Aman, W. M. Yokoyama, H. A. Young, and S. Bavari.** 2004. Role of natural killer cells in innate protection against lethal ebola virus infection. *J Exp Med* **200**:169-79.
This paper sheds light on the role of natural killer cells during ZEBOV infection.

52. **Chandran, K., N. J. Sullivan, U. Felbor, S. P. Whelan, and J. M. Cunningham.** 2005. Endosomal proteolysis of the ebola virus glycoprotein is necessary for infection. *Science* **308**:1643-5.
This paper identifies intracellular proteases that are necessary for successful ZEBOV cell-entry.
53. **Gupta, M., P. Greer, S. Mahanty, W. J. Shieh, S. R. Zaki, R. Ahmed, and P. E. Rollin.** 2005. CD8-mediated protection against Ebola virus infection is perforin dependent. *J Immunol* **174**:4198-202.
This paper identified perforin as an important factor in the immune response during ZEBOV infection.
54. **Kallstrom, G., K. L. Warfield, D. L. Swenson, S. Mort, R. G. Panchal, G. Ruthel, S. Bavari, and M. J. Aman.** 2005. Analysis of Ebola virus and VLP release using an immunocapture assay. *J Virol Methods* **127**:1-9.
This paper reports the use of an analysis system for ZEBOV budding.
55. **Ruthel, G., G. L. Demmin, G. Kallstrom, M. P. Javid, S. S. Badie, A. B. Will, T. Nelle, R. Schokman, T. L. Nguyen, J. H. Carra, S. Bavari, and M. J. Aman.** 2005. Association of ebola virus matrix protein VP40 with microtubules. *J Virol* **79**:4709-19.
This paper reports on the interaction of ZEBOV VP40 protein with cellular microtubules.
56. **Swenson, D. L., K. L. Warfield, D. L. Negley, A. Schmaljohn, M. J. Aman, and S. Bavari.** 2005. Virus-like particles exhibit potential as a pan-filovirus vaccine for both Ebola and Marburg viral infections. *Vaccine* **23**:3033-42.
This paper reports that filovirus-like particles can protect against both Lake Victoria marburgvirus and Zaire ebolavirus.
57. **Towner, J. S., J. Paragas, J. E. Dover, M. Gupta, C. S. Goldsmith, J. W. Huggins, and S. T. Nichol.** 2005. Generation of eGFP expressing recombinant Zaire ebolavirus for analysis of early pathogenesis events and high-throughput antiviral drug screening. *Virology* **332**:20-7.
This paper reports the creation of a recombinant ZEBOV encoding a marker gene using cDNA.

NIH Grants:

1	100	1R21AI053571-01	BASLER, CHRISTOPHER	<u>EBOLA VIRUS INTERFERON- ANTAGONISTS AND VIRULENCE</u>
Total: \$456,375			<ul style="list-style-type: none"> \$219,500 2003 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY \$236,875 2002 Basler, Christopher F MOUNT SINAI SCHOOL OF MEDICINE OF NYU NEW YORK, NY 	

2	100	1R15AI058950-01	CRARY, SHARON	<u>Initiation of Nucleocapsid Assembly in Ebola virus</u>
Total: \$179,400			<ul style="list-style-type: none"> \$179,400 2004 Crary, Sharon M DE PAUW UNIVERSITY GREENCASTLE, IN 	
3	100	1R21AI053392-01	HARTY, RONALD	<u>Analysis of the Ebola Virus VP24 Channel Protein</u>
Total: \$475,500			<ul style="list-style-type: none"> \$237,750 2003 Harty, Ronald N UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA \$237,750 2002 Harty, Ronald N UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA 	
4	100	1R21AI059277-01	HARTY, RONALD	<u>Ebola Virus VP40-Host Interactions In Vivo</u>
Total: \$619,960			<ul style="list-style-type: none"> \$317,000 2005 Harty, Ronald N UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA \$302,960 2004 Harty, Ronald N UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA 	
5	100	1R21AI053386-01A1	HE, BIN	<u>Ebola VP35 mediated viral mechanisms</u>
Total: \$600,372			<ul style="list-style-type: none"> \$303,259 2004 He, Bin UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$297,113 2003 He, Bin UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
6	100	1R01AI055519-01	KAWAOKA, YOSHIHIRO	<u>Molecular Basis for Ebola Virus Pathogenicity</u>
Total: \$846,630			<ul style="list-style-type: none"> \$345,442 2005 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$335,381 2004 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI \$165,807 2003 Kawaoka, Yoshihiro UNIVERSITY OF WISCONSIN MADISON MADISON, WI 	
7	100	1R21AI053579-01A1	KHROMYKH, ALEXANDER	<u>Development of Kunjin replicon-based Ebola vaccine</u>
Total: \$432,000			<ul style="list-style-type: none"> \$216,000 2004 Khromykh, Alexander A QUEENSLAND, UNIVERSITY OF QUEENSLAND AUSTRALIA - BRISBANE \$216,000 2003 Khromykh, Alexander A QUEENSLAND, UNIVERSITY OF QUEENSLAND AUSTRALIA - BRISBANE 	

8	100	1R21AI053423-01	SAPHIRE, ERICA	<u>Structural Studies of Ebola Viral Pathogenesis</u>
Total: \$555,600			<ul style="list-style-type: none"> \$277,800 2003 Saphire, Erica O SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$277,800 2002 Saphire, Erica O SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
9	100	1R21AI053653-01	SHEN, HAO	<u>Modulation of T cell Responses by Ebola Glycoprotein</u>
Total: \$475,500			<ul style="list-style-type: none"> \$237,750 2003 Shen, Hao UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA \$237,750 2002 Shen, Hao UNIVERSITY OF PENNSYLVANIA PHILADELPHIA, PA 	
10	100	1R21AI055925-01	WHITE, JUDITH	<u>Fusion Mechanism of the Ebola Virus Glycoprotein</u>
Total: \$595,000			<ul style="list-style-type: none"> \$304,000 2004 White, Judith M UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA \$291,000 2003 White, Judith M UNIVERSITY OF VIRGINIA CHARLOTTESVILLE CHARLOTTESVILLE, VA 	
11	99	1U54AI057153-010005	KAWAOKA, YOSHIHIRO	<u>Prevention and Control of Ebola Virus Infection</u>
Total: \$20,734,800 *			<ul style="list-style-type: none"> \$8,532,653 2005 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL \$8,543,253 2004 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL \$3,658,894 2003 Schneewind, Olaf UNIVERSITY OF CHICAGO CHICAGO, IL 	
12	85	1R21AI053302-01	MORROW, CASEY	<u>Disruption of Conserved RNA Stem-Loops in Filovirus RNA</u>
Total: \$430,500			<ul style="list-style-type: none"> \$215,250 2003 Morrow, Casey D UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL \$215,250 2002 Morrow, Casey D UNIVERSITY OF ALABAMA AT BIRMINGHAM BIRMINGHAM, AL 	
13	71	1U54AI057159-010006	FINBERG, ROBERT	<u>Innate Immunity Hemorrhagic Fever Viruses</u>
Total: \$26,169,985 *			<ul style="list-style-type: none"> \$10,173,756 2005 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA \$11,843,830 2004 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA 	

				<ul style="list-style-type: none"> \$4,152,399 2003 Kasper, Dennis L HARVARD UNIVERSITY (MEDICAL SCHOOL) BOSTON, MA
14	71	1R01AI054626-01	GARRY, ROBERT	<u>Rapid screen for Ebola virus membrane interactions/drugs</u>
Total: \$779,625				<ul style="list-style-type: none"> \$259,875 2005 Garry, Robert F TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$259,875 2004 Garry, Robert F TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA \$259,875 2003 Garry, Robert F TULANE UNIVERSITY OF LOUISIANA NEW ORLEANS, LA
15	71	1Z01AI005053-01	GOMEZ, PHILLIP	<u>Development And Production Of A Multicomponent Ebola rAd</u>
16	71	1Z01AI005053-02	GOMEZ, PHILLIP	<u>Development & Production Of Multicomponent Ebola Vaccine</u>
17	71	1Z01AI005054-01	GOMEZ, PHILLIP	<u>Development And Production Of An Ebola DNA Plasmid Vacci</u>
18	71	1Z01AI005054-02	GOMEZ, PHILLIP	<u>Development And Production Of An Ebola DNA Vaccine</u>
19	71	1Z01AI005038-01	GRAHAM, BARNEY	<u>Evaluating a Multicomponent Ebola Vaccine In Adult Volun</u>
20	71	1Z01AI005049-01	GRAHAM, BARNEY	<u>A Phase I Clinical Trial to Evaluate a Multiple Strain E</u>
21	57	1U01AI061253-01	ARNTZEN, CHARLES	<u>Development of a vaccine for Ebola virus in plant system</u>
Total: \$576,398				<ul style="list-style-type: none"> \$576,398 2005 Arntzen, Charles J ARIZONA STATE UNIVERSITY TEMPE, AZ
22	57	1Z01AI005049-02	GRAHAM, BARNEY	<u>Evaluation Of A Multicomponent Ebola Vaccine In Adults</u>
23	57	1Z01AI005004-01	NABEL, GARY	<u>Ebola Vaccine Development</u>
24	57	1Z01AI005004-02	NABEL, GARY	<u>Ebola Vaccine Development</u>

25	57	1Z01AI005004-03	NABEL, GARY	<u>Ebola Vaccine Development</u>
26	57	1Z01AI005007-01	NABEL, GARY	<u>Ebola Virology</u>
27	57	1Z01AI005007-02	NABEL, GARY	<u>Ebola Virology</u>
28	57	1R01AI066502-01	OLIVO, PAUL	<u>Therapeutics for Ebola virus</u>
Total: \$1,350,000			<ul style="list-style-type: none"> \$1,350,000 2005 Olivo, Paul D ORION GENOMICS, LLC ST. LOUIS, MO 	
29	42	1R01AI048053-01	BURTON, DENNIS	<u>THE ANTIVIRAL ACTIVITY OF ANTIBODIES TO A FILOVIRUS</u>
Total: \$1,520,348			<ul style="list-style-type: none"> \$310,275 2004 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$310,275 2003 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE LA JOLLA, CA \$279,248 2002 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$310,275 2001 Burton, Dennis R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA \$310,275 2000 BURTON, DENNIS R SCRIPPS RESEARCH INSTITUTE SAN DIEGO, CA 	
30	42	1R21AI054495-01	HOPE, THOMAS	<u>Cell Biology of Filovirus Entry</u>
Total: \$545,546			<ul style="list-style-type: none"> \$272,773 2004 Hope, Thomas J UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL \$272,773 2003 Hope, Thomas J UNIVERSITY OF ILLINOIS AT CHICAGO CHICAGO, IL 	
31	42	1R21AI055592-01	KAGAN, ELLIOTT	<u>Biodefense Against an Aerosolized Ebola Threat</u>
Total: \$598,800			<ul style="list-style-type: none"> \$299,400 2004 Kagan, Elliott HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD \$299,400 2003 Kagan, Elliott HENRY M. JACKSON FDN FOR THE ADV MIL/MED ROCKVILLE, MD 	
32	42	1Z01BP004021-01	KAPLAN, GERARDO	<u>Development of Biologics against Ebola virus</u>
33	42	1R21AI053539-01	KARP, CHRISTOPHER	<u>Ebola Virus: Immunopathogenesis and Therapy</u>
Total: \$444,000			<ul style="list-style-type: none"> \$222,000 2003 Karp, Christopher L CHILDREN'S HOSPITAL MED CTR (CINCINNATI) CINCINNATI, OH \$222,000 2002 Karp, Christopher L CHILDREN'S HOSPITAL MED CTR (CINCINNATI) CINCINNATI, OH 	
34	42	1Z01AI005007-03	NABEL, GARY	<u>Ebola Virology</u>

35	42	1Z01AI005070-01	NABEL, GARY	<u>Mechanisms in Ebola Glycoprotein Induced Cytotoxicity</u>
36	42	1R43AI052917-01	OLIVO, PAUL	<u>Indicator cells for antiviral screening for filoviruses</u>
Total: \$100,000			<ul style="list-style-type: none"> \$100,000 2002 Olivo, Paul D VIRRX, INC. ST. LOUIS, MO 	
37	28	1U19AI056540-010002	NAIR, VASU	<u>Nucleoside Therapeutics Against Pox and Filo Viruses</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	
38	28	2R44AI052917-02	OLIVO, PAUL	<u>Indicator cells for antiviral screening for filoviruses</u>
Total: \$725,891			<ul style="list-style-type: none"> \$368,309 2005 Olivo, Paul D ORION GENOMICS, LLC ST. LOUIS, MO \$357,582 2004 Olivo, Paul D JACOBS FACILITIES, INC. ST LOUIS, MO 	
39	28	1U19AI056540-01	SCHNELLER, STEWART	<u>Therapeutics for Pox, Filo and Other Viral Pathogens</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	
40	28	1U19AI056540-010001	SCHNELLER, STEWART	<u>Methyltransferase Inhibitors as Pox and Filo Antivirals</u>
Total: \$3,041,586 *			<ul style="list-style-type: none"> \$1,226,999 2005 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$1,192,986 2004 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL \$621,601 2003 Schneller, Stewart W AUBURN UNIVERSITY AT AUBURN AUBURN UNIVERSITY, AL 	
41	28	1Z01BM002007-01	WILSON, CAROLYN	<u>Critical Amino Acid Residues on Filovirus Glycoproteins</u>
42	14	2P41RR004050-160052	AMAN, M	<u>TRACKING OF E BOLA VIRUS ASSEMBLY IN LIVE CELLS</u>
Total: \$12,853,059			<ul style="list-style-type: none"> \$2,160,714 2005 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA \$2,726,690 2004 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA 	

			<ul style="list-style-type: none"> • \$2,083,473 2003 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO LA JOLLA, CA • \$2,145,033 2002 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA • \$64,643 2001 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA • \$383,218 2001 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA • \$1,546,132 2001 Ellisman, Mark H UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA • \$1,743,156 2000 ELLISMAN, MARK H. UNIVERSITY OF CALIFORNIA SAN DIEGO SAN DIEGO, CA
43	14	1R01HL075363-01	MCCRAY, PAUL <u>Filovirus enveloped FIV:virus-epithelia interactions-CF</u>
Total: \$737,500			<ul style="list-style-type: none"> • \$368,750 2005 Mccray, Paul B UNIVERSITY OF IOWA IOWA CITY, IA • \$368,750 2004 Mccray, Paul B UNIVERSITY OF IOWA IOWA CITY, IA

3 *De novo* synthesis of eradicated agent/agent requiring Biosafety Level-4

Publications: None identified.

4 Expanding host range of disease agent to new host (in humans, other animals and plants) or changing the tissue range of listed agent

Plum pox virus

Publications:

1. **Pilar, S., B. Salvador, C. Simón-Mateo, K. D. Kasschau, J. C. Carrington, and J. A. García.** 2002. Host-Specific Involvement of the HC Protein in the Long-Distance Movement of Potyviruses. *J Virol* **76**:1922-31.
This paper reports the manipulation of PPV by complementing it with movement proteins from a tobacco virus. This complementation resulted in a systemic PPV infection of a tobacco plant, which usually does not support PPV spread.

5 Construction of antibiotic- or vaccine-resistant listed agent

Bacillus anthracis

1. **Price, L. B., A. Vogler, T. Pearson, J. D. Busch, J. M. Schupp, and P. Keim.** 2003. In vitro selection and characterization of *Bacillus anthracis* mutants with high-level resistance to ciprofloxacin. *Antimicrob Agents Chemother* **47**:2362-5.
This paper reports the creation/isolation of strains of the bacillus that are highly resistant to ciprofloxacin.

Coccidioides immitis

Publications:

1. **Abuodeh, R. O., M. J. Orbach, M. A. Mandel, A. Das, and J. N. Galgiani.** 2000. Genetic transformation of *Coccidioides immitis* facilitated by *Agrobacterium tumefaciens*. *J Infect Dis* **181**:2106-10.
This paper describes the genetic transformation of the fungus with the help of the bacterium *Agrobacterium tumefaciens*, which was used to transfer a gene cassette encoding hygromycin phosphotransferase (hph). The transformed fungus turned out to be 60 to >500-fold more resistant to hygromycin than the untransformed control.

Coxiella burnetii

Publications:

1. **Suhan, M. L., and H. A. Thompson.** 2000. Expression of beta-lactamase in *Coxiella burnetii* transformants. *FEMS Microbiol Lett* **184**:303-6.
This paper describes the creation of ampicillin-resistant *Coxiella burnetii*.

Camelpoxvirus

Taxonomy: Family *Poxviridae*, Subfamily: *Chordopoxvirinae*, Genus *Orthopoxvirus*, Species

Camelpox virus, Virus: Camelpox virus.

Publications:

1. **Smee, D. F., R. W. Sidwell, D. Kefauver, M. Bray, and J. W. Huggins.** 2002. Characterization of Wild-Type and Cidofovir-Resistant Strains of Camelpox, Cowpox, Monkeypox, and Vaccinia Viruses. *Antimicrob Agents Chemother* **46**:1329-35. This paper describes the creation of Cidofovir-resistant Camelpox and Monkeypox virus strains in cell cultures and defines their (decreased) virulence in mouse models.

Francisella tularensis

Publications:

1. **Lauriano, C. M., J. R. Barker, F. E. Nano, B. P. Arulanandam, and K. E. Klose.** 2003. Allelic exchange in *Francisella tularensis* using PCR products. *FEMS Microbiol Lett* **229**:195-202. This paper describes a technique for allelic exchange in the bacterium utilizing PCR products. Linear PCR fragments containing gene deletions with an erythromycin resistance cassette insertion were transformed into the bacterium, resulting in erythromycin-resistant progeny. This technique was used to insert mutations into the genome of the bacterium
2. **Kawula, T. H., J. D. Hall, J. R. Fuller, and R. R. Craven.** 2004. Use of transposon-transposase complexes to create stable insertion mutant strains of *Francisella tularensis* LVS. *Appl Environ Microbiol* **70**:6901-4. This paper describes the use of transposome complexes to create insertion mutations in the chromosome of the bacterium employing kanamycin resistance markers.

Monkeypox virus

Publications:

1. **Smee, D. F., R. W. Sidwell, D. Kefauver, M. Bray, and J. W. Huggins.** 2002. Characterization of Wild-Type and Cidofovir-Resistant Strains of Camelpox, Cowpox, Monkeypox, and Vaccinia Viruses. *Antimicrob Agents Chemother* **46**:1329-35. This paper describes the creation of Cidofovir-resistant Camelpox and Monkeypox virus strains in cell cultures and defines their (decreased) virulence in mouse models.

Rickettsia prowazekii

Publications:

1. **Rachek, L. I., A. Hines, A. M. Tucker, H. H. Winkler, and D. O. Wood.** 2000. Transformation of *Rickettsia prowazekii* to erythromycin resistance encoded by the *Escherichia coli* *ereB* gene. *J Bacteriol* **182**:3289-91.
This paper reports the introduction of an erythromycin-resistance gene into the bacterium.
2. **Qin, A., A. M. Tucker, A. Hines, and D. O. Wood.** 2004. Transposon mutagenesis of the obligate intracellular pathogen *Rickettsia prowazekii*. *Appl Environ Microbiol* **70**:2816-22.
This paper reports the introduction of a rifampicin-resistance gene into the bacterium.

QUANTITATIVE ASSESSMENT

I. US research institutes that would have been affected by the proposed oversight system had it existed between the years of 2000 and 2005:

1. **Abbott Laboratories, Abbott Park, Illinois**
 - PDA/1 *Bacillus anthracis* 2003
 - PDA/1 *Rickettsia prowazekii* 2000
 - PDA/1 *Rickettsia rickettsii* 2000
 - PDA/1 *Yersinia pestis* 2003
2. **Acambis Inc., Cambridge, Massachusetts**
 - PDA/1 Japanese encephalitis virus 2002, 2004
3. **Advanced Biosystems, Inc., Manassas, Virginia**
 - PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005
4. **Agency for Toxic Substances and Disease Registry, Atlanta, Georgia**
 - PDA/1 *Bacillus anthracis* 2002
5. **Albany Medical College, Albany, New York**
 - PDA/1 *Francisella tularensis* 2005
6. **Allergan Inc., Irvine, California**
 - PDA/1 *Clostridium botulinum* 2003
7. **AlphaVax, Inc., Research Triangle Park, North Carolina**
 - EDA/2 Crimean-Congo hemorrhagic fever virus 2005
 - PDA/1 Venezuelan equine encephalitis virus 2001, 2003
8. **Antibody Systems, Hurst, Texas**
 - EDA/2 Zaire ebolavirus 2003
9. **Argonne National Laboratory, Argonne, Illinois**
 - PDA/1 *Bacillus anthracis* 2001, 2004
10. **Armed Forces Institute of Pathology, Washington, D.C.**
 - EDA/1 “1918 Influenza virus” 2001, 2002, 2004
 - PDA/1 *Bacillus anthracis* 2002
 - PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003
 - PDA/1 *Francisella tularensis* 2002, 2003
 - PDA/1 Monkeypox virus 2002
 - PDA/1 *Yersinia pestis* 2001
11. **Armed Forces Radiobiology Research Institute, Bethesda, Maryland**
 - PDA/1 *Bacillus anthracis* 2001, 2002
 - MDA/4/5 Venezuelan equine encephalitis virus 2001
12. **Auburn University, Auburn, Alabama**
 - PDA/1 *Bacillus anthracis* 2004
13. **Battelle, Columbus, Ohio**

- MDA/4/5 *Bacillus anthracis* 2003, 2005
- PDA/1 *Bacillus anthracis* 2003, 2004
- PDA/1 *Francisella tularensis* 2000
- 14. Bayer Corporation, Clayton, North Carolina**
- PDA/1 Venezuelan equine encephalitis virus 2001
- 15. Bayer Corporation, Emeryville, California**
- PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
- PDA/1 *Mycoplasma mycoides mycoides* 2004
- 16. Baylor College of Medicine, Houston, Texas**
- PDA/1 *Bacillus anthracis* 2003, 2004
- PDA/1 Venezuelan equine encephalitis virus 2001
- 17. BD Technologies, Research Triangle Park, North Carolina**
- PDA/1 *Bacillus anthracis* 2005
- 18. Beam Tech, Inc., San Antonio, Texas**
- PDA/1 *Bacillus anthracis* 2002
- 19. BioSense Consulting, Columbus, Ohio**
- PDA/1 *Francisella tularensis* 2000
- 20. BCR Diagnostics, Inc., Jamestown, Rhode Island**
- PDA/1 *Bacillus anthracis* 2004
- 21. Brigham Young University, Provo, Utah**
- PDA/1 *Bacillus anthracis* 2002, 2003
- 22. Brookhaven National Laboratory, Upton, New York**
- PDA/1 *Yersinia pestis* 2005
- 23. Brooks Air Force Base, San Antonio, Texas**
- PDA/1 *Bacillus anthracis* 2000, 2002
- PDA/1 *Francisella tularensis* 2004
- PDA/1 Influenza A virus 2002, 2003
- PDA/1 *Yersinia pestis* 2003
- 24. Brown University, Providence, Rhode Island**
- PDA/1 *Bacillus anthracis* 2004
- 25. California Animal Health and Food Safety Laboratory, Davis, California**
- PDA/1 Newcastle disease virus 2005
- 26. California Department of Health Services, Berkeley, California**
- PDA/1 *Francisella tularensis* 2001
- PDA/1 *Yersinia pestis* 2000, 2001
- 27. California Department of Health Services, Richmond, California**
- PDA/1 *Brucella melitensis* 2004
- PDA/1 *Clostridium botulinum* 2004
- 28. California Institute for Medical Research, San Jose, California**
- PDA/1 *Coccidioides immitis* 2000, 2002
- PDA/1 *Coccidioides posadasii* 2000
- 29. California Institute of Technology, Pasadena, California**
- PDA/1 Venezuelan equine encephalitis virus 2001
- 30. Case Western Reserve University, Cleveland, Ohio**

- PDA/1 Newcastle disease virus 2002
- 31. Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland**
- PDA/1 *Bacillus anthracis* 2004, 2005
- PDA/1 *Brucella melitensis* 2001
- PDA/1 Influenza A virus 2004
- 32. Center for Biologics Evaluation and Research, Food and Drug Administration, Kensington, Maryland**
- PDA/1 *Bacillus anthracis* 2004
- 33. Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland**
- EDA/1 Variola virus 2003
- PDA/1 *Francisella tularensis* 2000, 2001, 2002, 2003, 2004
- PDA/1 Monkeypox virus 2003
- 34. Centers for Disease Control and Prevention, Atlanta, Georgia**
- EDA/1 Variola virus 2000, 2001, 2003, 2004
- EDA/2 Crimean-Congo hemorrhagic fever virus 2002, 2004
- EDA/2 Guanarito virus 2000, 2002
- EDA/2 Junín virus 2000
- EDA/2 Lake Victoria marburgvirus 2000
- EDA/2 Lassa virus 2000, 2003, 2005
- EDA/2 Machupo virus 2002
- EDA/2 Omsk hemorrhagic fever virus 2004
- EDA/2 Sudan ebolavirus 2004
- EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005
- PDA/1 *Brucella melitensis* 2004
- PDA/1 *Burkholderia mallei* 2002, 2005
- PDA/1 *Burkholderia pseudomallei* 2002, 2005
- PDA/1 Camelpox virus 2001, 2003, 2004
- PDA/1 *Coccidioides immitis* 2000
- PDA/1 *Coxiella burnetii* 2003, 2004
- PDA/1 Flexal virus 2002
- PDA/1 *Francisella tularensis* 2002
- PDA/1 Hendra virus 2002
- PDA/1 Influenza A virus 2000, 2001, 2003
- PDA/1 Monkeypox virus 2001, 2002, 2003, 204
- PDA/1 Nipah virus 2000, 2001, 2002, 2004
- PDA/1 *Rickettsia prowazekii* 2000
- PDA/1 *Rickettsia rickettsii* 2000, 2003
- PDA/1 Rift Valley fever virus 2002, 2003
- PDA/1 Sabiá virus 2002
- PDA/1 *Yersinia pestis* 2003
- 35. Centers for Disease Control and Prevention, Fort Collins, Colorado**

- PDA/1 Eastern equine encephalitis virus 2001, 2003
- PDA/1 *Francisella tularensis* 2003, 2004, 2005
- PDA/1 Japanese encephalitis virus 2000, 2001, 2003
- PDA/1 Nipah virus
- PDA/1 Venezuelan equine encephalitis virus 2000
- PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2005
- 36. Centers for Disease Control and Prevention, Cincinnati, Ohio**
 - MDA/4/5 *Bacillus globigii* 2005
- 37. Centers for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, Colorado**
 - PDA/1 Influenza A virus 2002, 2003
- 38. Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland**
 - PDA/1 *Bacillus anthracis* 2003, 2004
 - PDA/1 *Clostridium botulinum* 2005
- 39. Charles River SPAFAS, Inc., Storrs, Connecticut**
 - PDA/1 Newcastle disease virus 2002
- 40. Children's Hospital, Los Angeles, California**
 - EDA/2 Junin virus 2003, 2004
- 41. Children's Hospital of Philadelphia, Philadelphia, Pennsylvania**
 - PDA/1 Human enterovirus B 2000
- 42. Chiron, Emeryville, California**
 - PDA/1 Venezuelan equine encephalitis virus 2003
 - PDA/1 *Bacillus anthracis* 2005
- 43. CIPHERGEN Biosystems, Fremont, California**
 - PDA/1 *Yersinia pestis* 2001
- 44. CJ America, Ridgefield Park, New Jersey**
 - PDA/1 Japanese encephalitis virus 2001
- 45. ClinCyte, LLC, San Diego, California**
 - PDA/1 *Brucella melitensis* 2000
- 46. Clinical Research Management, Frederick, Maryland**
 - EDA/2 Lake Victoria marburgvirus 2004
 - EDA/2 Zaire ebolavirus 2003, 2004
 - PDA/1 Rift Valley Fever virus 2003, 2005
- 47. Clinical Research Management, North Royalton, Ohio**
 - PDA/1 *Bacillus anthracis* 2002, 2003, 2004
 - PDA/1 *Yersinia pestis* 2002, 2003
- 48. Clonetech, Inc., Palo Alto, California**
 - PDA/1 Japanese encephalitis virus 2000
- 49. Colorado State University, Fort Collins, Colorado**
 - PDA/1 Alcelaphine herpesvirus 1,2 2001
 - PDA/1 Venezuelan equine encephalitis virus 2001
 - PDA/1 *Yersinia pestis* 2001, 2005
- 50. Conceptual MindWorks, Inc., San Antonio, Texas**

- PDA/1 *Bacillus anthracis* 2000, 2002
- 51. Cook County Hospital, Chicago, Illinois**
- PDA/1 Newcastle disease virus 2001
- 52. Cornell University, New York, New York**
- EDA/2 Junín virus 2004
- PDA/1 *Bacillus anthracis* 2003, 2004, 2005
- 53. Corvas International, San Diego, California**
- EDA/2 Zaire ebolavirus 2003
- 54. Critical Response Engineering, Inc., Alexandria, Virginia**
- PDA/1 *Bacillus anthracis* 2003
- 55. Dana Farber Cancer Institute, Massachusetts**
- PDA/1 Human enterovirus B 2000
- 56. Dartmouth Medical School, Lebanon, New Hampshire**
- PDA/1 Human enterovirus B 2000
- 57. Department of Health, New York City, New York**
- PDA/1 *Bacillus anthracis* 2003
- 58. Department of Health and Senior Services, Trenton, New Jersey**
- PDA/1 *Bacillus anthracis* 2003
- 59. Drexel University, Philadelphia, Pennsylvania**
- PDA/1 *Bacillus anthracis* 2003, 2004
- 60. Duke University, Durham, North Carolina**
- PDA/1 *Bacillus anthracis* 2000, 2002
- 61. East Carolina University, Greenville, North Carolina**
- PDA/1 *Brucella melitensis* 2003, 2004
- PDA/1 Influenza A virus 2003
- 62. Elusys Therapeutics Inc., Pine Brook, New Jersey**
- MDA/4/5 *Bacillus anthracis* 2005
- 63. Emory University, Atlanta, Georgia**
- EDA/2 Lassa virus 2002, 2003
- EDA/2 Reston ebolavirus 2001
- EDA/2 Zaire ebolavirus 2001, 2004
- MDA/4/5 Measles virus 2002
- MDA/4/5 Rubella virus 2002
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 Influenza A virus 2003
- PDA/1 *Yersinia pestis* 2003
- 64. FBI Academy, Quantico, Virginia**
- PDA/1 *Bacillus anthracis* 2004
- 65. Florida A&M University, Tallahassee, Florida**
- PDA/1 *Xylella fastidiosa* 2002
- 66. Florida Department of Health, State Public Health Laboratory-Miami, Miami, Florida**
- MDA/4/5 *Bacillus atrophaeus* 2004
- MDA/4/5 *Bacillus thuringiensis* 2004

67. **Focus Technologies, Cypress, California**
 - PDA/1 *Bacillus anthracis* 2003
68. **Focus Technologies, Herndon, Virginia**
 - PDA/1 *Bacillus anthracis* 2003
69. **Fraunhofer USA Center for Molecular Biotechnology, Newark, Delaware**
 - PDA/1 *Bacillus anthracis* 2005
70. **Functional Genetics, Inc., Rockville, Maryland**
 - EDA/2 Zaire ebolavirus 2003
71. **GeneWorks, Inc., Ann Arbor, Michigan, USA**
 - PDA/1 *Bacillus anthracis* 2004
72. **Genentech, Inc, South San Francisco, California**
 - MDA/4/5 Human respiratory syncytial virus 2001
73. **Geo-Centers, Inc., Lanham, Maryland**
 - PDA/1 *Bacillus anthracis* 2001, 2004
74. **Geo-Centers, Newtown, Massachusetts**
 - PDA/1 *Bacillus anthracis* 2004
75. **George Mason University, Fairfax, Virginia**
 - PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005
76. **George Washington University, Washington, D.C.**
 - PDA/1 *Bacillus anthracis* 2003, 2004
77. **Georgia Institute of Technology, Atlanta, Georgia**
 - PDA/1 Cercopithecine herpesvirus 1 2003
78. **Georgia Southern University, Statesboro, Georgia**
 - PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
 - PDA/1 *Mycoplasma mycoides mycoides* 2004
79. **Georgia State University, Atlanta, Georgia**
 - PDA/1 Cercopithecine herpesvirus 1 2002, 2003
 - PDA/1 *Clostridium botulinum* 2004
80. **Gladstone Institute of Virology and Immunology, San Francisco, California**
 - EDA/2 Lake Victoria marburgvirus 2001
 - EDA/2 Zaire ebolavirus 2001
81. **Harvard Medical School, Boston, Massachusetts**
 - EDA/2 Zaire ebolavirus 2005
 - PDA/1 *Bacillus anthracis* 2000, 2002, 2003
 - PDA/1 *Coxiella burnetii* 2002
 - PDA/1 Influenza A virus 2004
 - PDA/1 *Yersinia pestis* 2005
82. **Harvard School of Public Health, Boston, Massachusetts**
 - MDA/4/5 Human Rhinovirus 2003
83. **Heska Corporation, Fort Collins, Colorado**
 - PDA/1 *Yersinia pestis* 2003, 2004
84. **Human Genome Sciences, Inc., Rockville, Maryland**
 - PDA/1 Newcastle disease virus 2001
85. **Illinois Institute of Technology, Chicago, Illinois**

- PDA/1 *Bacillus anthracis* 2003
- 86. Innovative Biotechnologies International, Inc., Grand Island, New York**
- PDA/1 *Bacillus anthracis* 2004
- 87. Institute for Biological Energy Alternatives, Manassas, Virginia**
- PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
- PDA/1 *Mycoplasma mycoides mycoides* 2004
- 88. Institute for Biological Energy Alternatives, Rockville, Maryland**
- PDA/6 Enterobacteria phage ϕ X174 2003
- 89. Institute for Genomic Research, Rockville, Maryland**
- PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005
- PDA/1 *Burkholderia mallei* 2004
- PDA/1 *Burkholderia pseudomallei* 2004
- PDA/1 *Coxiella burnetii* 2003
- 90. Indiana University, Indianapolis, Indiana**
- PDA/1 Japanese encephalitis virus 2002
- 91. Integrated Genomics, Inc., Chicago, Illinois**
- PDA/1 *Brucella melitensis* 2002
- 92. Intervet, Inc., Dallas Center, Iowa**
- PDA/1 *Brucella melitensis* 2000
- 93. IOMAI, Gaithersburg, Maryland**
- PDA/1 *Bacillus anthracis* 2004
- 94. Iowa State University, Ames, Iowa**
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 *Brucella melitensis* 2000, 2001
- PDA/1 Foot and mouth disease virus 2004
- PDA/1 Newcastle disease virus 2000
- 95. The IT Corporation, Washington, D.C.**
- PDA/1 *Bacillus anthracis* 2002
- 96. James Madison University, Harrisonburg, Virginia**
- PDA/1 *Yersinia pestis* 2005
- 97. Jefferson Medical College, Philadelphia, Pennsylvania**
- PDA/1 *Clostridium botulinum* 2004
- 98. Johns Hopkins University, Baltimore, Maryland**
- EDA/5 *Bacillus anthracis* 2003, 2004
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 Newcastle disease virus 2001, 2002, 2003
- 99. Kansas State University, Manhattan, Kansas**
- PDA/1 *Xanthomonas oryzae* 2004
- 100. Kaweah Delta District Hospital, Visalia, California**
- PDA/1 *Coccidioides immitis* 2002, 2003
- 101. Lackland Air Force Base, San Antonio, Texas**
- MDA/4/5 *Coxiella burnetii* 2002
- 102. Lawrence Berkeley National Laboratory, Berkeley, California**
- PDA/1 *Bacillus anthracis* 2003

- 103. Lawrence Livermore National Laboratory, Livermore, California**
- MDA/4/5 *Bacillus anthracis* 2003, 2005
 - MDA/4/5 *Bacillus atrophaeus* 2004
 - MDA/4/5 *Bacillus globigii* 2005
 - MDA/4/5 *Bacillus thuringiensis* 2004
 - MDA/4/5 *Yersinia pestis* 2003, 2005
 - PDA/1 *Bacillus anthracis* 2002, 2003
 - PDA/1 *Francisella tularensis* 2005
 - PDA/1 *Yersinia pestis* 2001, 2002, 2003, 2004, 2005
- 104. Litton/TASC, San Antonio, Texas**
- PDA/1 *Bacillus anthracis* 2002
- 105. Los Alamos National Laboratory, Los Alamos, New Mexico**
- PDA/1 *Bacillus anthracis* 2000, 2002, 2003, 2004, 2005
 - PDA/1 Newcastle disease virus 2004
 - PDA/1 *Yersinia pestis* 2000
- 106. Louisiana State University, Baton Rouge, Louisiana**
- PDA/1 *Bacillus anthracis* 2000, 2001, 2002
 - PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003
 - PDA/1 Newcastle disease virus 2004
 - PDA/1 *Rickettsia prowazekii* 2000
- 107. Loyola University, Maywood, Illinois**
- PDA/1 *Bacillus anthracis* 2003, 2004
- 108. Lovelace Respiratory Research Institute, Albuquerque, New Mexico**
- PDA/1 *Bacillus anthracis* 2005
- 109. Massachusetts Institute of Technology, Cambridge, Massachusetts**
- PDA/1 *Brucella melitensis* 2000, 2004
 - PDA/1 *Yersinia pestis* 2003
- 110. Massachusetts Institute of Technology, Lexington, Massachusetts**
- PDA/1 *Yersinia pestis* 2003
- 111. Mayo Clinic Foundation, Rochester, Minnesota**
- PDA/1 *Bacillus anthracis* 2002
 - PDA/1 Bovine spongiform encephalopathy prion 2002
 - PDA/1 Monkeypox virus 2002
- 112. Medical College of Ohio, Toledo, Ohio**
- PDA/1 *Coccidioides immitis* 2000, 2001, 2002
 - PDA/1 *Coccidioides posadasii* 2000, 2003
- 113. Medical College of Wisconsin, Milwaukee, Wisconsin**
- PDA/1 *Francisella tularensis* 2004
- 114. Merial-Select, Inc., Gainesville, Georgia**
- PDA/1 Influenza A virus 2000
- 115. MetriGenix, Inc., Gaithersburg, Maryland**
- PDA/1 Influenza A virus 2004
- 116. Michigan State University, East Lansing, Michigan**
- PDA/1 *Yersinia pestis* 2000, 2002, 2004

117. **Mississippi State University, Mississippi State, Mississippi**
 - MDA/4/5 *Mycoplasma gallisepticum* 2005
118. **Montana Department of Fish, Wildlife and Parks, Bozeman, Montana**
 - PDA/1 *Brucella melitensis* 2001
119. **Montana State University, Bozeman, Montana**
 - PDA/1 *Bacillus anthracis* 2002, 2003
120. **Morgan State University, Baltimore, Maryland**
 - PDA/1 *Bacillus anthracis* 2003
121. **Mount Sinai School of Medicine, New York, New York**
 - EDA/1 “1918 Influenza virus” 2001, 2002, 2004
 - EDA/2 Lassa virus 2002, 2003
 - EDA/2 Zaire ebolavirus 2003
 - PDA/1 *Bacillus anthracis* 2001
 - PDA/1 Influenza A virus 2003
 - PDA/1 Newcastle disease virus 2001, 2003, 2004, 2005
 - PDA/1 *Yersinia pestis* 2001
122. **National Cancer Institute, Frederick, Maryland**
 - EDA/2 Zaire ebolavirus 2002, 2003, 2005
 - PDA/1 *Bacillus anthracis* 2001, 2005
 - PDA/1 Hendra virus 2005
 - PDA/1 Nipah virus 2005
 - PDA/1 *Yersinia pestis* 2005
123. **National Cancer Institute, Bethesda, Maryland**
 - EDA/2 Zaire ebolavirus 2000
124. **National Institutes of Health, Hamilton, Montana**
 - PDA/1 *Coxiella burnetii* 2004
 - PDA/1 *Rickettsia prowazekii* 2000
 - PDA/1 *Rickettsia rickettsii* 2000
 - PDA/1 *Yersinia pestis* 2000, 2002, 2004, 2005
125. **National Institutes of Health, Bethesda, Maryland**
 - EDA/2 Crimean-Congo hemorrhagic fever virus 2004
 - EDA/2 Lake Victoriamarburgvirus 2002
 - EDA/2 Tick-borne encephalitis virus 2000
 - EDA/2 Zaire ebolavirus 2000, 2003, 2005
 - MDA/6 Langat virus 2000, 2001
 - PDA/1 *Bacillus anthracis* 2000, 2001, 2002, 2003, 2004
 - PDA/1 *Brucella melitensis* 2001
 - PDA/1 Monkeypox virus 2001, 2002
 - PDA/1 Newcastle disease virus 2000, 2004
126. **National Institutes of Health, Gaithersburg, Maryland**
 - PDA/1 *Rickettsia prowazekii* 2003, 2004
127. **Naval Medical Research Center Detachment, NAMRID, Peru**
 - PDA/1 Venezuelan equine encephalitis virus 2000, 2004
128. **Naval Medical Research Institute, Bethesda, Maryland**

- PDA/1 *Francisella tularensis* 2000
- PDA/1 *Rickettsia rickettsii* 2001
- 129. Naval Medical Research Center, Rockville, Maryland**
- PDA/1 *Bacillus anthracis* 2004, 2005
- 130. Naval Medical Research Center, Silver Spring, Maryland**
- MDA/4/5 *Bacillus anthracis* 2002, 2004
- PDA/1 *Bacillus anthracis* 2004, 2005
- PDA/1 *Clostridium botulinum* 2005
- PDA/1 *Francisella tularensis* 2002
- PDA/1 *Rickettsia prowazekii* 2003, 2004
- 131. Naval Research Laboratory, Center for Bio/Molecular Science and Engineering, Washington, D. C.**
- PDA/1 *Bacillus anthracis* 2002
- PDA/1 *Francisella tularensis* 2000
- 132. Naval Surface Warfare Center, Dahlgren, Virginia**
- PDA/1 *Bacillus anthracis* 2005
- 133. New Mexico State University, Las Cruces, New Mexico**
- PDA/1 *Bacillus anthracis* 2004
- 134. New York State Department of Health, Albany, New York**
- PDA/1 *Coccidioides immitis* 2000
- 135. New York University, New York, New York**
- PDA/1 *Bacillus anthracis* 2003, 2004
- PDA/1 *Yersinia pestis* 2002
- 136. North Carolina State University, Raleigh, North Carolina**
- PDA/1 Newcastle disease virus 2000
- PDA/1 *Rickettsia rickettsii* 2003
- 137. North-Western University, Chicago, Illinois**
- PDA/1 *Rickettsia rickettsii* 2004
- 138. Northern Arizona University, Flagstaff, Arizona**
- EDA/5 *Bacillus anthracis* 2003
- PDA/1 *Bacillus anthracis* 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 *Francisella tularensis* 2001, 2004
- PDA/1 *Yersinia pestis* 2000, 2001, 2004, 2005
- 139. Northwestern University, Evanston, Illinois**
- PDA/1 *Bacillus anthracis* 2001
- 140. Novozymes Biotech Inc., Davis, California**
- PDA/1 *Bacillus anthracis* 2002, 2003
- 141. Oak Ridge National Laboratory, Oak Ridge, Tennessee**
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 Foot and mouth disease virus 2005
- PDA/1 *Yersinia pestis* 2004
- 142. Oklahoma State Department of Health, Oklahoma City, Oklahoma**
- PDA/1 *Francisella tularensis* 2001
- 143. Oakland Research Institute, Oakland, California**

- PDA/1 *Bacillus anthracis* 2004, 2005
- 144. Ohio State University, Columbus, Ohio**
- MDA/4/5 *Bacillus anthracis* 2004
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 Newcastle disease virus 2001, 2002
- 145. Ohio State University, Wooster, Ohio**
- PDA/1 Newcastle disease virus 2002
- 146. Ohio University, Athens, Ohio**
- PDA/1 Venezuelan equine encephalitis virus 2004
- 147. Oklahoma State University, Stillwater, Oklahoma**
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 Cercopithecine herpesvirus 1 2002, 2003, 2005
- 148. Oregon State University, Corvallis, Oregon**
- EDA/4 Plum pox virus 2002
- 149. Orion Genomics, St. Louis, Missouri**
- PDA/1 *Burkholderia mallei* 2005
- 150. Orovax Inc., Cambridge, Massachusetts**
- PDA/1 Japanese encephalitis virus 2000, 2001
- 151. Pfizer, Lincoln, Nebraska**
- PDA/1 Foot and mouth disease virus 2004
- 152. Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York**
- PDA/1 African swine fever virus 2000, 2001, 2002, 2004, 2005
- PDA/1 Camelpox virus 2002
- PDA/1 Classical swine fever virus 2003, 2005
- PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 Goatpox virus 2002
- PDA/1 Japanese encephalitis virus 2000, 2001, 2003
- PDA/1 Lumpy skin disease virus 2001, 2003
- PDA/1 Sheeppox virus 2002
- 153. Potomac Hospital, Woodbridge, Virginia**
- PDA/1 *Bacillus anthracis* 2005
- 154. Procter and Gamble, St. Bernard, Ohio**
- PDA/1 *Bacillus anthracis* 2004, 2005
- 155. Public Health Research Institute, Newark, New Jersey**
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 *Yersinia pestis* 2004
- 156. Pukkerbush Veterinary Clinic, Bristolville, Ohio**
- PDA/1 *Brucella melitensis* 2001
- 157. Purdue University, West Lafayette, Indiana**
- PDA/1 *Bacillus anthracis* 2004, 2005
- PDA/1 Foot and mouth disease virus 2003
- 158. Roche Molecular Systems, Alameda, California**
- PDA/1 *Coccidioides immitis* 2000

- PDA/1 *Coccidioides posadasii* 2000
- 159. Rockefeller University, New York, New York**
- PDA/1 *Bacillus anthracis* 2002
- PDA/1 *Coxiella burnetii* 2000
- PDA/1 Japanese encephalitis virus 2003
- 160. Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois**
- PDA/1 Newcastle disease virus 2001
- 161. Rutgers - The State University of New Jersey, New Brunswick, New Jersey**
- PDA/1 *Clostridium botulinum* 2000, 2002
- 162. University Schering-Plough Research Institute, Kenilworth, New Jersey**
- PDA/1 *Coccidioides immitis* 2002
- 163. Schott Glass Technologies Inc., Duryea, Pennsylvania**
- PDA/1 *Bacillus anthracis* 2002
- 164. Scripps Research Institute, La Jolla, California**
- EDA/2 Guaranito virus 2000, 2002
- EDA/2 Junín virus 2000
- EDA/2 Lassa virus 2000, 2001, 2002, 2003, 2004, 2005
- EDA/2 Machupo virus 2002
- EDA/2 Zaire ebolavirus 2002, 2003
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 Bovine spongiform encephalopathy prion 2002
- PDA/1 Flexal virus 2002
- PDA/1 Sabiá virus 2002
- PDA/1 *Yersinia pestis* 2004
- 165. Sierra Biomedical Inc., Sparks, Nevada**
- PDA/1 Japanese encephalitis virus 2000, 2002
- 166. Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia**
- EDA/1 “1918 Influenza virus” 2001, 2002, 2004
- PDA/1 Influenza A virus 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 Newcastle disease virus 2000, 2001, 2002, 2003, 2004, 2005
- 167. Southwest Foundation for Biomedical Research, San Antonio, Texas**
- EDA/2 Guaranito virus 2002
- EDA/2 Junín virus 2002
- EDA/2 Lassa fever virus 2002
- EDA/2 Machupo virus 2002
- PDA/1 Flexal virus 2002
- PDA/1 Sabiá virus 2002)
- 168. Southern Research Institute, Frederick, Maryland**
- PDA/1 *Bacillus anthracis* 2004
- 169. SRI International, Menlo Park, California**
- PDA/1 *Francisella tularensis* 2005
- 170. St. Jude Children's Research Hospital, Memphis, Tennessee**
- MDA/1 Influenza B virus 2005

- PDA/1 *Bacillus anthracis* 2004
- PDA/1 Influenza A virus 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 Newcastle disease virus 2000, 2002
- 171. St. Louis University, St. Louis, Missouri**
- PDA/1 Japanese encephalitis virus 2001
- PDA/1 Newcastle disease virus 2003
- 172. Stanford University, Stanford, California**
- EDA/1 Variola virus 2004
- PDA/1 *Coccidioides immitis* 2000, 2002, 2003
- PDA/1 *Coccidioides posadasii* 2000
- PDA/1 Newcastle disease virus 2000
- PDA/1 *Yersinia pestis* 2002, 2004
- 173. State University of New York at Stony Brook, Stony Brook, New York**
- MDA/6 Poliovirus 2002
- PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
- PDA/1 *Mycoplasma mycoides mycoides* 2004
- PDA/1 *Yersinia pestis* 2003, 2004
- 174. Stony Brook University, Stony Brook, New York**
- PDA/1 *Francisella tularensis* 2003, 2004, 2005
- PDA/1 *Yersinia pestis* 2005
- 175. Tetracore Inc., Gaithersburg, Maryland**
- PDA/1 African swine fever virus 2005
- PDA/1 Classical swine fever virus 2003, 2005
- PDA/1 Foot and mouth disease virus 2002
- 176. Texas A&M University, College Station, Texas**
- PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2004
- PDA/1 *Coxiella burnetii* 2001, 2002, 2003, 2004, 2005
- 177. Texas A&M University, Houston, Texas**
- PDA/1 *Bacillus anthracis* 2004
- 178. Texas Veterinary Medical Diagnostic Laboratory, Gonzalez, Texas**
- PDA/1 Influenza A virus 2004
- 179. Buck Institute for Age Research, Novato, California**
- PDA/1 *Francisella tularensis* 2004
- 180. Thermo Finnigan, San Jose, California**
- PDA/1 *Rickettsia prowazekii* 2004
- 181. Towson University, Towson, Maryland**
- PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
- PDA/1 *Mycoplasma mycoides mycoides* 2004
- 182. Translational Genomics Research Institute Phoenix, Arizona**
- PDA/1 *Bacillus anthracis* 2005
- 183. Tulane Regional Primate Center, Covington, Louisiana**
- PDA/1 Japanese encephalitis virus 2000
- 184. Tulane University, New Orleans, Louisiana**
- EDA/2 Lake Victoria marburgvirus 2003

- EDA/2 Zaire ebolavirus 2003
- PDA/1 Influenza A virus 2001
- 185. Tuskegee University, Tuskegee, Alabama**
- PDA/1 Influenza A virus 2004
- 186. Uniformed Services University of the Health Sciences, Bethesda, Maryland**
- EDA/2 Zaire ebolavirus 2003
- PDA/1 Hendra virus 2005
- PDA/1 Nipah virus 2005
- PDA/1 Venezuelan equine encephalitis virus 2000, 2003
- 187. United Biomedical, Inc., Hauppauge, New York**
- PDA/1 Foot and mouth disease virus 2001, 2002
- 188. United Cancer Research Institute, Alexandria, Virginia**
- PDA/1 Newcastle disease virus 2004
- 189. United Postal Service, Washington, D. C.
- PDA/1 *Bacillus anthracis* 2002
- 190. United States Air Force Academy, Colorado Springs, Colorado**
- PDA/1 *Yersinia pestis* 2003
- 191. United States Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland**
- MDA/4/5 *Bacillus anthracis* 2002
- 192. United States Army Center for Health Promotion and Prevention Medicine-Pacific, Camp Zama, Japan**
- PDA/1 Eastern equine encephalitis virus 2004
- 193. United States Army Dugway Proving Grounds, Dugway, Utah**
- MDA/4/5 *Bacillus anthracis* 2003, 2005
- MDA/4/5 *Bacillus globigii* 2005
- MDA/4/5 *Yersinia pestis* 2005
- 194. United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland**
- EDA/1 Variola virus 2003, 2004
- EDA/2 Crimean-Congo hemorrhagic fever virus 2004
- EDA/2 Lake Victoria marburgvirus 2000, 2001, 2002, 2003
- EDA/2 Lassa virus 2001
- EDA/2 Reston ebolavirus 2001
- EDA/2 Tick-borne encephalitis virus 2000, 2001
- EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004, 2005
- EDA/5 Camelpox virus 2002
- EDA/5 Monkeypox virus 2001, 2002
- MDA/4/5 Andes virus 2002
- MDA/4/5 *Bacillus anthracis* 2001
- MDA/4/5 *Brucella melitensis* 2004
- MDA/4/5 *Burkholderia mallei* 2005
- MDA/4/5 *Burkholderia pseudomallei* 2003
- MDA/4/5 Cowpox virus 2000, 2002

- MDA/4/5 *Coxiella burnetii* 2002
- MDA/4/5 Monkeypox virus 2001
- MDA/4/5 Venezuelan equine encephalitis virus 2001, 2005
- MDA/4/5 *Yersinia pestis* 2003
- PDA/1 *Bacillus anthracis* 2001, 2002, 2003, 2004, 2005
- PDA/1 *Burkholderia mallei* 2000, 2001, 2002, 2003, 2004, 2005
- PDA/1 *Burkholderia pseudomallei* 2001, 2004
- PDA/1 Camel pox virus 2001, 2002, 2003
- PDA/1 *Coxiella burnetii* 2000
- PDA/1 Eastern equine encephalitis virus 2000, 2002, 2003, 2005
- PDA/1 *Francisella tularensis* 2000
- PDA/1 Monkeypox virus 2001, 2002, 2003
- PDA/1 Rift Valley Fever virus 2003, 2005
- PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004
- PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004, 2005
- 195. United States Department of Agriculture, Bozeman, Montana**
- PDA/1 *Brucella melitensis* 2001
- 196. United States Department of Agriculture, Agricultural Research Service, Ames, Iowa**
- MDA/4/5 *Mycoplasma gallisepticum* 2005
- PDA/1 *Bacillus anthracis* 2001, 2002, 2003
- PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003, 2004
- PDA/1 *Burkholderia mallei* 2000
- PDA/1 Influenza A virus 2002, 2003
- PDA/1 Newcastle disease virus 2004
- PDA/1 Venezuelan equine encephalitis virus 2003
- 197. United States Department of Agriculture, Agricultural Research Service, Athens, Georgia**
- PDA/1 Newcastle disease virus 2000
- 198. United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland**
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 *Brucella melitensis* 2001
- PDA/1 *Francisella tularensis* 2000
- PDA/1 *Mycoplasma capricolum capripneumoniae* 2004
- PDA/1 *Mycoplasma mycoides mycoides* 2004
- PDA/1 Newcastle disease virus 2005
- PDA/1 *Rickettsia prowazekii* 2002
- PDA/1 Plum pox virus 2001
- PDA/1 *Xylella fastidiosa* 2002
- 199. United States Department of Agriculture, Agricultural Research Service, College Station, Texas**
- PDA/1 Newcastle disease virus 2002

200. **United States Department of Agriculture, Agricultural Research Service, Fort Detrick, Frederick, Maryland**
- PDA/1 Plum pox virus 2001
201. **United States Department of Agriculture, Agricultural Research Service, Kearneysville, West Virginia**
- PDA/1 Plum pox virus 2001
202. **United States Department of Agriculture, Agricultural Research Service, Laramie, Wyoming**
- PDA/1 Alcelaphine herpesvirus 1,2 2001
203. **United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi**
- MDA/4/5 *Mycoplasma gallisepticum* 2005
204. **United States Department of Agriculture, Agricultural Research Service, Pullman, Washington**
- PDA/1 Alcelaphine herpesvirus 1,2 2000, 2001, 2002, 2003
- PDA/1 Bovine spongiform encephalopathy prion 2001
- MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005
205. **United States Department of Agriculture, Agricultural Research Service, Washington, D.C.**
- PDA/1 *Bacillus anthracis* 2003
206. **United States Department of Agriculture, Agricultural Research Service, Wyndmoor, Pennsylvania**
- PDA/1 *Bacillus anthracis* 2005
207. **United States Department of Agriculture, Animal and Plant Health Inspection Service, Riverdale, Maryland**
- PDA/1 *Brucella melitensis* 2001
- PDA/1 Influenza A virus 2002, 2003
208. **United States Department of Agriculture, Animal and Plant Health Inspection Service, Robbinsville, New Jersey**
- PDA/1 Influenza A virus 2002, 2003
- PDA/1 Bluetongue virus 2000, 2001
209. **United States Department of Agriculture Center for Animal Disease Information and Analysis, Fort Collins, Colorado**
- PDA/1 Venezuelan equine encephalitis virus 2001
210. **United States Department of Agriculture, Southeast Poultry Research Laboratory, Athens, Georgia**
- PDA/1 Bluetongue virus 2000
211. **United States Department of Commerce, Seattle, Washington**
- PDA/1 *Clostridium botulinum* 2002, 2004
212. **United States Department of the Interior, Bozeman, Montana**
- PDA/1 *Brucella melitensis* 2001
213. **United States Environmental Protection Agency, Cincinnati, Ohio**
- PDA/1 *Bacillus anthracis* 2005

- 214. United States Environmental Protection Agency National Enforcement Investigations Center, Denver, Colorado**
 - MDA/4/5 *Bacillus anthracis* 2002
- 215. United States Environmental Protection Agency Region 5, Westlake, Ohio**
 - MDA/4/5 *Bacillus anthracis* 2002
- 216. United States Food and Drug Administration, Atlanta, Georgia**
 - PDA/1 *Clostridium botulinum* 2002, 2003
- 217. United States Food and Drug Administration, Summit-Argo, Illinois**
 - PDA/1 *Clostridium botulinum* 2000, 2003, 2005
- 218. United States Geological Survey, Fort Collins, Colorado**
 - PDA/1 *Yersinia pestis* 2001
- 219. United States Geological Survey, Madison, Wisconsin**
 - PDA/1 *Yersinia pestis* 2003, 2004
- 220. United States Naval Medical Research Center Detachment, Lima, Peru**
 - PDA/1 Eastern equine encephalitis virus 2004
- 221. United States Public Health Service Center, Denver, Colorado**
 - MDA/4/5 *Bacillus anthracis* 2002
- 222. United States Department of Agriculture, Agricultural Research Service, Dubois, Idaho**
 - PDA/1 Alcelaphine herpesvirus 1,2 2004, 2005
- 223. University of Alabama at Birmingham, Birmingham, Alabama**
 - PDA/1 *Bacillus anthracis* 2001, 2003, 2004
 - PDA/1 *Yersinia pestis* 2004
- 224. University of Arizona, Tucson, Arizona**
 - EDA/5 *Coccidioides immitis* 2000
 - PDA/1 *Bacillus anthracis* 2003
 - PDA/1 *Coccidioides immitis* 2000, 2002
 - PDA/1 *Coccidioides posadasii* 2000, 2003, 2005
- 225. University of California Berkeley, California**
 - PDA/1 *Coccidioides immitis* 2000, 2003
 - PDA/1 *Coccidioides posadasii* 2000, 2003
 - PDA/1 *Rickettsia rickettsii* 2004
- 226. University of California Davis, Davis, California**
 - MDA/4/5 *Bacillus anthracis* 2004
 - MDA/4/5 *Bacillus thuringiensis* 2004
 - PDA/1 Bluetongue virus 2000
 - PDA/1 *Brucella melitensis* 2003
 - PDA/1 Cercopithecine herpesvirus 1 2003
 - PDA/1 *Coccidioides immitis* 2000, 2002, 2003
 - PDA/1 *Coccidioides posadasii* 2000
 - PDA/1 Influenza A virus 2004
 - PDA/1 Japanese encephalitis virus 2001
 - PDA/1 *Mycoplasma mycoides mycoides* 2005
 - PDA/1 Newcastle disease virus 2003, 2004

- PDA/1 Peste-des-petits-ruminants virus 2003
- PDA/1 Rinderpest virus 2002, 2003
- PDA/1 Venezuelan equine encephalitis virus 2004
- PDA/2 *Autographa californica* multiple nucleopolyhedrovirus 2003
- 227. University of California, Los Angeles, California**
- EDA/2 Nipah virus 2004, 2005
- EDA/3 Nipah virus 2004, 2005
- PDA/1 *Francisella tularensis* 2003
- 228. University of California, San Diego, California**
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 *Coccidioides immitis* 2000
- 229. University of California, San Francisco, California**
- EDA/2 Lake Victoria marburgvirus 2001
- EDA/2 Zaire ebolavirus 2001
- PDA/1 Bovine spongiform encephalopathy prion 2002, 2005
- PDA/1 *Coxiella burnetii* 2003
- PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2004
- PDA/1 *Francisella tularensis* 2004
- PDA/1 Newcastle disease virus 2004
- PDA/1 *Yersinia pestis* 2004
- 230. University of California at Santa Barbara, Santa Barbara, California**
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 Newcastle disease virus 2001
- 231. University of Cincinnati, Cincinnati, Ohio**
- PDA/1 *Francisella tularensis* 2004
- 232. University of Connecticut, Storrs, Connecticut**
- PDA/1 African swine fever virus 2005
- PDA/1 *Bacillus anthracis* 2005
- PDA/1 Classical swine fever virus 2005
- PDA/1 Foot and mouth disease virus 2005
- PDA/1 Newcastle disease virus 2001, 2002
- 233. University of Delaware, Newark, Delaware**
- PDA/1 Newcastle disease virus 2003
- 234. University of Florida, Gainesville, Florida**
- PDA/1 *Ehrlichia ruminantium* 2000, 2001, 2002
- PDA/1 *Xylella fastidiosa* 2003
- 235. University of Georgia, Athens, Georgia**
- EDA/1 Variola virus 2003
- EDA/2 Nipah virus 2004, 2005
- MDA/4/5 *Mycoplasma synoviae* 2001
- PDA/1 *Brucella melitensis* 2004
- PDA/1 *Clostridium botulinum* 2003
- PDA/1 Foot and mouth disease virus 2000
- PDA/1 Influenza A virus 2004

- PDA/1 Monkeypox virus 2003
- PDA/1 Newcastle disease virus 2003
- 236. University of Georgia, Griffin, Georgia**
- PDA/1 *Bacillus anthracis* 2004, 2005
- PDA/1 *Xylella fastidiosa* 2002
- 237. University of Illinois at Chicago, Chicago, Illinois**
- EDA/2 Zaire ebolavirus 2003, 2004
- MDA/7 *Bacillus subtilis* 2000
- PDA/1 *Bacillus anthracis* 2005
- 238. University of Illinois at Urbana-Champaign, Urbana, Illinois**
- PDA/1 *Yersinia pestis* 2002
- 239. University of Iowa, Iowa City, Iowa**
- EDA/2 Guanarito virus 2000, 2002
- EDA/2 Machupo virus 2002
- PDA/1 Flexal virus 2002
- PDA/1 *Francisella tularensis* 2004
- PDA/1 Sabiá virus 2002
- 240. University of Kentucky, Lexington, Kentucky**
- PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004, 2005
- 241. University of Louisville, Louisville, Kentucky**
- PDA/1 *Bacillus anthracis* 2004
- 242. University of Maryland, Baltimore, Maryland**
- EDA/2 Lassa virus 2002, 2003, 2004, 2005
- PDA/1 *Bacillus anthracis* 2003, 2004, 2005
- PDA/1 *Rickettsia prowazekii* 2002, 2003
- PDA/1 *Rickettsia rickettsii* 2000, 2001, 2002, 2003, 2004, 2005
- 243. University of Maryland, College Park, Maryland**
- PDA/1 Eastern equine encephalitis virus 2000, 2001
- PDA/1 Newcastle disease virus 2001, 2003, 2004
- PDA/1 *Yersinia pestis* 2001
- 244. University of Massachusetts, Amherst, Massachusetts**
- PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003
- PDA/1 *Clostridium botulinum* 2000
- 245. University of Massachusetts, Worcester, Massachusetts**
- PDA/1 *Bacillus anthracis* 2003
- PDA/1 *Coxiella burnetii* 2004
- PDA/1 Japanese encephalitis virus 2000
- PDA/1 Newcastle disease virus 2002
- PDA/1 *Yersinia pestis* 2001, 2004
- 246. University of Massachusetts Dartmouth, North Dartmouth, Massachusetts**
- PDA/1 *Clostridium botulinum* 2001, 2003, 2004
- 247. University of Medicine and Dentistry of New Jersey, Newark, New Jersey**
- PDA/1 *Bacillus anthracis* 2004
- PDA/1 *Yersinia pestis* 2004

248. **University of Medicine and Dentistry of New Jersey, Piscataway, New Jersey**
- PDA/1 Newcastle disease virus 2002
249. **University of Miami, Miami, Florida**
- PDA/1 *Yersinia pestis* 2000, 2002, 2003, 2004, 2005
250. **University of Michigan, Ann Arbor, Michigan**
- EDA/2 Zaire ebolavirus 2003
- PDA/1 *Bacillus anthracis* 2000, 2002, 2003, 2004, 2005
- PDA/1 *Yersinia pestis* 2002
251. **University of Minnesota, Minneapolis, Minnesota**
- PDA/1 *Bacillus anthracis* 2004, 2005
252. **University of Minnesota, St. Paul, Minnesota**
- EDA/5 *Coccidoides immitis* 2000
- MDA/4/5 Classical swine fever virus 2001
- PDA/1 *Ehrlichia ruminantium* 2000
- PDA/1 *Rickettsia rickettsii* 2004
- PDA/1 Newcastle disease virus 2002, 2004, 2005
253. **University of Mississippi, Jackson, Mississippi**
- PDA/1 *Bacillus anthracis* 2004
254. **University of Missouri, Columbia, Missouri**
- PDA/1 Newcastle disease virus 2000
- PDA/1 *Rickettsia rickettsii* 2001
255. **University of Missouri, Kansas City, Missouri**
- PDA/1 *Brucella melitensis* 2003
256. **University of Missouri-St. Louis, St. Louis, Missouri**
- PDA/1 Newcastle disease virus 2002
257. **University of Montana, Missoula, Montana**
- EDA/2 Junin virus 2004, 2005
258. **University of Nebraska, Lincoln, Nebraska**
- PDA/1 *Francisella tularensis* 2004
- PDA/1 *Xylella fastidiosa* 2002
259. **University of Nebraska, Omaha, Nebraska**
- PDA/1 *Francisella tularensis* 2004
260. **University of Nevada at Reno, Reno, Nevada**
- EDA/2 Crimean-Congo hemorrhagic fever virus 2003
- EDA/2 Junin virus 2000
- PDA/1 *Bacillus anthracis* 2004
261. **University of New Mexico, Albuquerque, New Mexico**
- PDA/1 *Bacillus anthracis* 2004, 2005
262. **University of North Carolina at Chapel Hill, Chapel Hill, North Carolina**
- EDA/5 *Francisella tularensis* 2004
- PDA/1 Influenza A virus 2000
- PDA/1 *Rickettsia prowazekii* 2000
- PDA/1 *Rickettsia rickettsii* 2000
- PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2003

263. **University of North Dakota, Grand Forks, North Dakota**
 - PDA/1 *Yersinia pestis* 2001, 2002
264. **University of Northern Iowa, Cedar Falls, Iowa**
 - PDA/1 *Bacillus anthracis* 2003
265. **University of Pennsylvania, Philadelphia, Pennsylvania**
 - EDA/2 Crimean-Congo hemorrhagic fever virus 2005
 - EDA/2 Zaire ebolavirus 2003
266. **University of Pittsburgh, Pittsburgh, Pennsylvania**
 - PDA/1 *Bacillus anthracis* 2003, 2004
267. **University of Rochester, Rochester, New York**
 - PDA/1 *Rickettsia rickettsii* 2000, 2002, 2003, 2004
268. **University of Scranton, Scranton, Pennsylvania**
 - PDA/1 *Bacillus anthracis* 2001, 2002, 2003, 2004
 - PDA/1 *Brucella melitensis* 2001, 2002
269. **University of South Alabama, Mobile, Alabama**
 - EDA/5 *Rickettsia prowazekii* 2000, 2004
 - PDA/1 *Rickettsia prowazekii* 2003
270. **University of South Carolina, Columbia South Carolina**
 - PDA/1 *Bacillus anthracis* 2004
271. **University of South Florida, Tampa, Florida**
 - PDA/1 *Bacillus anthracis* 2003, 2004
 - PDA/1 *Rickettsia rickettsii* 2001
272. **University of Southern California, Los Angeles, California**
 - PDA/1 Newcastle disease virus 2004
273. **University of Tennessee, Memphis, Tennessee**
 - PDA/1 *Bacillus anthracis* 2004
274. **University of Texas, Austin, Texas**
 - PDA/1 *Yersinia pestis* 2003, 2004
275. **University of Texas, Dallas, Texas**
 - PDA/1 *Bacillus anthracis* 2002
276. **University of Texas Medical Branch, Galveston, Texas**
 - EDA/2 Guaranito virus 2000, 2002, 2003
 - EDA/2 Junín virus 2002, 2003
 - EDA/2 Lassa virus 2002, 2003
 - EDA/2 Machupo virus 2002, 2003
 - EDA/2 Omsk hemorrhagic fever virus 2003, 2004, 2005
 - MDA/1 Pichinde virus 2001
 - PDA/1 *Coccidioides immitis* 2000
 - PDA/1 Eastern equine encephalitis virus 2004
 - PDA/1 Japanese encephalitis virus 2000, 2002, 2003
 - PDA/1 *Rickettsia prowazekii* 2000, 2001
 - PDA/1 *Rickettsia rickettsii* 2005
 - PDA/1 Rift Valley Fever virus 2003, 2005
 - PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004, 2005

- 277. University of Texas, Houston, Texas**
- PDA/1 *Bacillus anthracis* 2000, 2002, 2004, 2005
- 278. University of Texas San Antonio, San Antonio, Texas**
- EDA/2 Guaranito virus 2002
 - EDA/2 Junín virus 2002
 - EDA/2 Lassa fever virus 2002
 - EDA/2 Machupo virus 2002
 - EDA/5 *Francisella tularensis* 2003
 - PDA/1 *Bacillus anthracis* 2000
 - PDA/1 *Coccidioides immitis* 2001, 2002, 2003
 - PDA/1 *Coccidioides posadasii* 2003
 - PDA/1 Flexal virus 2002
 - PDA/1 *Francisella tularensis* 2004
 - PDA/1 Human enterovirus B 2000
 - PDA/1 Sabiá virus 2002
 - PDA/1 *Yersinia pestis* 2000
- 279. University of Texas SW Med Ctr., Dallas, Texas**
- EDA/2 Lassa virus 2003, 2004, 2005
 - PDA/1 *Coccidioides immitis* 2003
- 280. University of Virginia, Charlottesville, Virginia**
- PDA/1 *Bacillus anthracis* 2003
 - PDA/1 Foot and mouth disease virus 2002
 - PDA/1 Japanese encephalitis virus 2001
- 281. University of Washington, Seattle, Washington**
- EDA/1 “1918 Influenza A virus” 2004
 - PDA/1 *Bacillus anthracis* 2002, 2004
 - PDA/1 *Francisella tularensis* 2004
 - PDA/1 *Yersinia pestis* 2004
- 282. University of Wisconsin, Madison, Wisconsin**
- EDA/1 “1918 Influenza A virus” 2004
 - EDA/2 Lassa virus 2003, 2004
 - EDA/2 Zaire ebolavirus 2002, 2003, 2004
 - MDA/1 Newcastle disease virus 2002
 - PDA/1 *Bacillus anthracis* 2004
 - PDA/1 *Brucella melitensis* 2000, 2002, 2003, 2004, 2005
 - PDA/1 *Clostridium botulinum* 2000, 2001, 2003, 2004, 2005
 - PDA/1 Influenza A virus 2005
 - PDA/1 *Yersinia pestis* 2002
- 283. University of Wyoming, Laramie, Wyoming**
- PDA/1 *Brucella melitensis* 2000, 2002
 - PDA/1 *Coxiella burnetii* 2002, 2003
 - PDA/1 *Rickettsia prowazekii* 2000
 - PDA/1 *Rickettsia rickettsii* 2000, 2003
 - PDA/1 *Yersinia pestis* 2005

284. **United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland**
- PDA/1 *Bacillus anthracis* 2000, 2004
 - PDA/1 *Burkholderia mallei* 2005
 - PDA/1 *Francisella tularensis* 2003
 - PDA/1 *Yersinia pestis* 2000
285. **USA Cancer Research Institute, College of Medicine, University of South Alabama, Mobile, Alabama**
- EDA/2 Zaire ebolavirus 2003
286. **Utah State University, Logan, Utah**
- EDA/5 Camelpox virus 2002
 - EDA/5 Monkeypox virus 2002
 - PDA/1 *Brucella melitensis* 2002
287. **V. I. Technologies, Inc., Watertown, Massachusetts**
- PDA/1 Foot and mouth disease virus 2002
288. **Van Andel Research Institute, Grand Rapids, Missouri**
- PDA/1 *Bacillus anthracis* 2001, 2003
289. **Vanderbilt University Medical Center, Nashville, Tennessee**
- EDA/2 Crimean-Congo hemorrhagic fever virus 2003
290. **Veridian, Inc., San Antonio, Texas**
- PDA/1 *Bacillus anthracis* 2000, 2002
291. **Vaxin Inc., Birmingham, Alabama**
- PDA/1 *Bacillus anthracis* 2004
292. **Veterans Affairs Medical Center, Houston, Texas**
- PDA/1 *Francisella tularensis* 2000
293. **Vical Inc., San Diego, California**
- MDA/4/5 *Bacillus anthracis* 2004
294. **Virginia Polytechnic Institute and State University, Blacksburg, Virginia**
- PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003
 - PDA/1 *Clostridium botulinum* 2000
295. **Vital Probes Inc., Mayfield, Philadelphia**
- PDA/1 *Bacillus anthracis* 2003
296. **Vitruvius Biosciences, The Woodlands, Texas**
- PDA/1 *Bacillus anthracis* 2004
297. **Wadsworth Center, Albany, New York**
- PDA/1 *Yersinia pestis* 2002
298. **Walter Reed Army Institute of Research, Forest Glen, Maryland**
- MDA/4/5 *Brucella melitensis* 2004
 - PDA/1 *Brucella melitensis* 2000, 2001
299. **Walter Reed Army Institute of Research, Silver Spring, Maryland**
- EDA/2 Crimean-Congo hemorrhagic fever virus 2004
 - PDA/1 *Bacillus anthracis* 2004
 - PDA/1 *Brucella melitensis* 2001
 - PDA/1 Eastern equine encephalitis virus 2003

- PDA/1 *Francisella tularensis* 2001, 2005
- PDA/1 Japanese encephalitis virus 2000, 2001
- PDA/1 *Rickettsia rickettsii* 2001
- PDA/1 *Yersinia pestis* 2001, 2002, 2003, 2004
- 300. Walter Reed Army Institute of Research, Washington, D. C.**
- MDA/4/5 *Brucella melitensis* 2004
- PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2004
- PDA/1 *Yersinia pestis* 2000, 2001, 2002
- 301. Walter Reed Army Medical Center, Washington, D.C.**
- EDA/2 Zaire ebolavirus 2004
- PDA/1 Japanese encephalitis virus 2000
- 302. Washington State University, Pullman, Washington**
- PDA/1 Alcelaphine herpesvirus 1,2 2000, 2001, 2003, 2004, 2005
- PDA/1 Bovine spongiform encephalopathy prion 2001
- PDA/1 *Coxiella burnetii* 2000
- PDA/1 *Ehrlichia ruminantium* 2000, 2001, 2002, 2004, 2005
- PDA/1 *Mycoplasma mycoides mycoides* 2000
- 303. Washington University, St. Louis, Missouri**
- EDA/2 Zaire ebolavirus
- PDA/1 *Yersinia pestis* 2005
- 304. Wayne State University, Detroit, Michigan**
- EDA/2 Zaire ebolavirus 2000
- 305. West Virginia University, Morgantown, West Virginia**
- EDA/5 *Coxiella burnetii* 2000
- PDA/1 *Coxiella burnetii* 2002
- 306. Wildlife Research Center, Fort Collins, Colorado**
- PDA/1 *Brucella melitensis* 2000
- 307. Wildlife Science Group, University of Washington, Seattle, Washington**
- PDA/1 *Yersinia pestis* 2004
- 308. Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming**
- PDA/1 *Brucella melitensis* 2000, 2002
- 309. Yale University, New Haven, Connecticut**
- PDA/1 *Coxiella burnetii* 2000, 2003, 2004
- PDA/1 Japanese encephalitis virus 2000
- PDA/1 Rift Valley fever virus 2000
- PDA/1 *Yersinia pestis* 2001
- 310. Zoological Society of San Diego, San Diego, California**
- PDA/1 *Mycoplasma mycoides mycoides* 2005

II. US researchers that would have been affected by the proposed oversight system had it existed between the years of 2000 and 2005:

1. Abney, J., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004)
2. Abrams, M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Francisella tularensis* 2001)
3. Abshire, T. G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002, 2005)
4. Abuodeh, R. O., University of Arizona, Tucson, Arizona (EDA/5 *Coccidioides immitis* 2000)
5. Adamovicz, J. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2004)
6. Adams, G., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2002)
7. Adams, L. G., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000, 2001)
8. Adesiyun, A. A., University of California Davis, Davis, California (PDA/1 *Brucella melitensis* 2003)
9. Adhikari, A., Centers for Disease Control and Prevention, Cincinnati, Ohio (MDA/4/5 *Bacillus globigii* 2005)
10. Afonso, C. L., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2002, 2004, PDA/1 Camel pox virus 2002, PDA/1 Goat pox virus 2002, PDA/1 Lumpy skin disease virus 2001, 2003, PDA/1 Sheeppox virus 2002)
11. Agarwal, S., Emory Vaccine Research Center and Department of Pathology, Emory University, Atlanta, Georgia (EDA/2 Lassa virus 2003, EDA/2 Zaire ebolavirus 2003)
12. Agranovich, I., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
13. Agron, P. G., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Yersinia pestis* 2002)
14. Aguilar, P., Naval Medical Research Center Detachment, NAMRID, Peru/University of Texas Medical Branch, Galveston, Texas (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2000, 2004)
15. Ahmad, S., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2002, 2003)
16. Ahmed, R., Emory University, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2001, 2003, 2004, 2005)
17. Aitichou, M., Clinical Research Management, Frederick, Maryland (PDA/1 Rift Valley fever virus 2005)
18. Alarcon, J. B., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)

19. Albert, H., Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2002)
20. Alcantara, R. B., East Carolina University, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
21. Aldrich, J. L. Tetracore Inc., Gaithersburg, Maryland (PDA/1 *Francisella tularensis* 2000)
22. Aldrich, J., Naval Medical Research Institute, Bethesda, Maryland (PDA/1 *Francisella tularensis* 2000)
23. Alesi, K., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2003)
24. Alibek, D., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002)
25. Alibek, K., Advanced Biosystems, Inc., Manassas, Virginia/George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005)
26. al-Khaldi, S., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
27. Alland, D., University of Medicine and Dentistry of New Jersey, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
28. Alleman, A. R., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2000)
29. Allen, C. A., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000)
30. Allen, S. G., Naval Medical Research Institute, Bethesda, Maryland (PDA/1 *Francisella tularensis* 2000)
31. Allender, C. J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2005, PDA/1 *Yersinia pestis* 2004)
32. Aalls, J. L., Veridian, Inc., San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000, 2002)
33. Alstad, A. D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Venezuelan equine encephalitis virus 2003)
34. Altamura, L. A., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Crimean-Congo hemorrhagic fever virus 2005)
35. Alvarez, R., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Foot and mouth disease virus 2003, PDA/1 Newcastle disease virus 2004, 2005)
36. Alving, C. R., Walter Reed Army Institute of Research, Silver Spring, Maryland (EDA/2 Zaire ebolavirus 2002)
37. Alwell-Warda, K., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003)
38. Aman, M. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2002, 2003, 2004, 2005, EDA/2 Zaire ebolavirus 2002, 2003, 2004, 2005)
39. Amass, S. F., Purdue University, West Lafayette, Indiana (PDA/1 Foot and mouth disease virus 2003)

40. Amemiya, K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia mallei* 2005, PDA/1 *Burkholderia mallei* 2002)
41. Ampel, Neil M., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
42. Amuso, P. University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
43. Anand, S. P., University of Pittsburgh, Pittsburgh, Pennsylvania (PDA/1 *Bacillus anthracis* 2004)
44. Anantharaman, T. S., New York University, New York, New York/University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
45. Andersen, G. L., Lawrence Berkeley National Laboratory, Berkeley, California (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Yersinia pestis* 2000, 2002)
46. Anderson, A. O., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2005)
47. Anderson, B. E., University of South Florida, Tampa, Florida/University of Missouri–Columbia, Columbia, Missouri/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Rickettsia rickettsii* 2001)
48. Anderson, D. A., United States Army Dugway Proving Grounds, Dugway, Utah (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
49. Anderson, G. P., Naval Research Laboratory, Center for Bio/Molecular Science and Engineering, Washington, D. C. (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Francisella tularensis* 2000)
50. Anderson, I., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
51. Anderson, K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2002)
52. Anderson, L. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2000)
53. Andrews, G. P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland/University of Wyoming, Laramie, Wyoming (MDA/4/5 *Burkholderia pseudomallei* 2003, PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004, 2005)
54. Anishchenko, M., University of Texas Medical Branch, Galveston, Texas (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2003, 2004, 2005)
55. Antolin, M. F., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Yersinia pestis* 2005)
56. Aoki, K. R., Allergan Inc., Irvine, California (PDA/1 *Clostridium botulinum* 2003)
57. Apicella, M. A., University of Iowa, Iowa City, Iowa (PDA/1 *Francisella tularensis* 2004)
58. Arakawa, E. T., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Bacillus anthracis* 2003)
59. Arasteh, A., United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2001)

60. Araujo, T. P. University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2002)
61. Arceneaux, J. E., University of Mississippi, Jackson, Mississippi (PDA/1 *Bacillus anthracis* 2004)
62. Archer, Angela M., University of Texas San Antonio, San Antonio, Texas (EDA/2 Lassa fever virus 2002, EDA/2 Guanarito virus 2002, EDA/2 Junín virus 2002, EDA/2 Machupo virus 2002, PDA/1 Flexal virus 2002, PDA/1 Sabiá virus 2002)
63. Arcibal, I. G., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
64. Arciniega, J., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
65. Ardakes, E., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)
66. Ardans, A. A., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 Newcastle disease virus 2005)
67. Arduino, M. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005, PDA/1 *Yersinia pestis* 2003)
68. Arnon, S. S., California Department of Health Services, Richmond, California (PDA/1 *Clostridium botulinum* 2004)
69. Aronson, A. I., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2004, 2005)
70. Aronson, J. F., University of Texas Medical Branch, Galveston, Texas/University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (EDA/2 Omsk hemorrhagic fever virus 2005, MDA/1 Pichinde virus 2001, PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2000, 2003)
71. Arroyo, J., Orovax Inc./ Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000, 2001, 2002)
72. Arulanandam, B. P., University of Texas San Antonio, San Antonio, Texas (EDA/5 *Francisella tularensis* 2003, PDA/1 *Francisella tularensis* 2004)
73. Asay, M., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
74. Ashar, H. R., University of Medicine and Dentistry of New Jersey, Piscataway, New Jersey (PDA/1 Newcastle disease virus 2002)
75. Atakilit, A., University of California, San Francisco, California (PDA/1 Foot and mouth disease virus 2001)
76. Atchley, D. H., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
77. Aune, K., Montana Department of Fish, Wildlife and Parks, Bozeman, Montana (PDA/1 *Brucella melitensis* 2001)
78. Awasthi, S., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides posadasii* 2003)
79. Azad, A. F., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2002, 2003, 2005)

80. Azimi, N., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2000)
81. Aziz, Fatema H., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2002, 2003)
82. Babaoglu, K., St. Jude Children's Research Hospital, Memphis, Tennessee/University of Tennessee, Memphis, Tennessee (PDA/1 *Bacillus anthracis* 2004)
83. Babcock, G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000)
84. Babin, M., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003, 2005)
85. Backlund, P., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
86. Bacon, R. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004)
87. Badie, S. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, 2005)
88. Bae, J. E., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2002)
89. Baeten, L. A., United States Geological Survey, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2004)
90. Baemner, A. J., Cornell University, Ithaca, New York (PDA/1 *Bacillus anthracis* 2003, 2004)
91. Bai, L., Case Western Reserve University, Cleveland, Ohio (PDA/1 Newcastle disease virus 2002)
92. Bailey, C., Advanced Biosystems, Inc., Manassas, Virginia/George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2002, 2004, 2005)
93. Bailie, L., University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003)
94. Baillie, L. W., Institute for Genomic Research, Rockville, Maryland/University of Maryland, Baltimore, Maryland/George Washington University, Washington D. C./United States Navy Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004, 2005)
95. Bajani, M. D., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
96. Baker, D. D., University of Northern Iowa, Cedar Falls, Iowa (PDA/1 *Bacillus anthracis* 2003)
97. Baker, Jr., J. R., University of Michigan Medical School, Ann-Arbor, Michigan (EDA/2 Zaire ebolavirus 2003)
98. Baker, R. O., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, EDA/2 Zaire ebolavirus 2002. PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2003)
99. Baker, S. L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Rickettsia rickettsii* 2003)
100. Bakken, R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2000, 2001, PDA/1 Venezuelan equine encephalitis virus 2000, 2001)

101. Baldrige, G. D., University of Minnesota, St. Paul, Minnesota (PDA/1 *Rickettsia rickettsii* 2004)
102. Baldwin, C. L., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003)
103. Balinsky, C. A., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2004)
104. Ball, H., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
105. Balog, R., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
106. Baloglu, S., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000)
107. Banerjee, S. N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2003)
108. Banfield, C. M., Lackland Air Force Base, San Antonio, Texas (MDA/4/5 *Coxiella burnetii* 2002)
109. Bankamp, B., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2004)
110. Barash, J. R., California Department of Health Services, Berkeley, California (PDA/1 *Clostridium botulinum* 2003, PDA/1 *Yersinia pestis* 2000)
111. Barathur, R. R., ClinCyte, LLC, San Diego, California (PDA/1 *Brucella melitensis* 2000)
112. Barbet, A. F., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2000, 2001, 2002)
113. Bardsley, K., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2002)
114. Baribaud, F., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
115. Barker, J. R., University of Texas San Antonio, San Antonio, Texas (EDA/5 *Francisella tularensis* 2003, PDA/1 *Francisella tularensis* 2004)
116. Barnes, B. J., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2001, 2002, 2003)
117. Barnes, W. J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Yersinia pestis* 2003)
118. Barnett, G. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
119. Barnewall, R., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2004)
120. Barr, J. R., Center fo Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
121. Barrera, J., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003)

122. Barrett, A. D. T., University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2003, 2004, 2005, PDA/1 Japanese encephalitis virus 2000, 2003, 2004)
123. Barrientos, L. G., National Institutes of Health, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2003)
124. Barrow, E. W., Oklahoma State University, Stillwater, Oklahoma (PDA/1 *Bacillus anthracis* 2004)
125. Barrow, W. W., Oklahoma State University, Stillwater, Oklahoma (PDA/1 *Bacillus anthracis* 2004)
126. Barrows, L. F., University of Wyoming, Laramie, Wyoming (PDA/1 *Coxiella burnetii* 2002, 2003)
127. Barry, P. A., University of California-Davis, Davis, California (PDA/1 Cercopithecine herpesvirus 1 2003)
128. Barth, J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001)
129. Barthel, R., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
130. Barvir, D. A., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
131. Basler, C. F., Mount Sinai School of Medicine, New York, New York (EDA/1 “1918 Influenza virus” 2001, 2002, 2004, EDA/2 Lassa virus 2002, 2003, EDA/2 Zaire ebolavirus 2002, 2003, PDA/1 Newcastle disease virus 2003)
132. Bassett, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
133. Baszler, T. V., Washington State University, Pullman, Washington (PDA/1 Bovine spongiform encephalopathy prion 2001)
134. Bates, P., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
135. Baumgartner, J., University of Georgia, Athens, Georgia (PDA/1 *Brucella melitensis* 2004)
136. Baumstark, B., Centers for Disease Control and Prevention, Atlanta, Georgia/Georgia State University, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2004, PDA/1 *Rickettsia rickettsii* 2003)
137. Bausch, Daniel G., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000, EDA/2 Sudan ebolavirus 2004)
138. Bautista, E. M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2005)
139. Bavari, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2002, 2003, 2004, 2005, EDA/2 Zaire ebolavirus 2002, 2003, 2004, 2005, PDA/1 *Bacillus anthracis* 2004, 2005)
140. Bavykin, S. G., Argonne National Laboratory, Argonne, Illinois (PDA/1 *Bacillus anthracis* 2004)

141. Baxt, B. , Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000, 2001, 2004, 2005)
142. Bean, T. J., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2004)
143. Beanan, M. J. Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Coxiella burnetii* 2003)
144. Beard, C. W., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Foot and mouth disease virus 2000, PDA/1 Influenza A virus 2001)
145. Bearden, S. W., Centers for Disease Control and Prevention, Fort Collins, Colorado/University of Kentucky, Lexington, Kentucky (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2001, 2003)
146. Bearson, B. L., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (MDA/4/5 *Mycoplasma gallisepticum* 2005)
147. Bearson, S. M. D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (MDA/4/5 *Mycoplasma gallisepticum* 2005)
148. Beasley, D. W. C., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2003, 2004)
149. Bechner, M., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
150. Beck, J. R., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2000, 2001, 2005, PDA/1 Newcastle disease virus 2004)
151. Beecher, D. J., FBI Academy, Quantico, Virginia (PDA/1 *Bacillus anthracis* 2004)
152. Beier, M. S., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2003)
153. Bell, C. A., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 *Bacillus anthracis* 2002)
154. Bell, C., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2005)
155. Bell, M., Ohio State University, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2004)
156. Bell, R., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Francisella tularensis* 2003)
157. Bellaire, B. H., Louisiana State University Health Sciences Center, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2002, 2003)
158. Bellini, W. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002, 2003, 2004)
159. Belosludtsev, Y. Y., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
160. Benach, J. L., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003, 2004, 2005)

161. Benedek, O., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)
162. Bennet, J., Emory University, Atlanta, Georgia (MDA/4/5 Measles virus 2002, MDA/4/5 Rubella virus 2002)
163. Benson, A. K., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
164. Benson, G., Mount Sinai School of Medicine, New York, New York (PDA/1 *Bacillus anthracis* 2001, PDA/1 *Yersinia pestis* 2001)
165. Benton, J. L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
166. Bergelson, J. M., Children's Hospital of Philadelphia, Philadelphia, Pennsylvania (PDA/1 Human enterovirus B 2000)
167. Bergman, N. H., Institute for Genomic Research, Rockville, Maryland/University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2004, 2005)
168. Berliba, L., University of New Mexico, Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004)
169. Bermudez, A. J., University of Missouri, Columbia, Missouri (PDA/1 Newcastle disease virus 2000)
170. Bernal, A., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
171. Bernard, K. A., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000)
172. Bernardi, J., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002)
173. Berry, K. J., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
174. Berthold, I., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
175. Bertolotti-Ciarlet, A., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Crimean-Congo hemorrhagic fever virus 2005)
176. Bessman, M. J., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2002)
177. Beuchat, L. R., University of Georgia, Griffin, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005)
178. Beyene, B., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
179. Bezborodova, S. V., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2002)
180. Bhatt, T. R., Clonetech, Inc., Palo Alto, California (PDA/1 Japanese encephalitis virus 2000)
181. Bhattacharjee, A. K., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2004)

182. Bhattacharyya, A., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
183. Bi, S., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
184. Biggins, D., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2001)
185. Billharz, R., University of Washington, Seattle, Washington (EDA/1 “1918 Influenza virus” 2004)
186. Billia-Shaveet, D., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
187. Bin, Q., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
188. Bishara, J., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2004)
189. Bishop, K. A., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
190. Black, D. H., Oklahoma State University, Stillwater, Oklahoma (PDA/1 Cercopithecine herpesvirus 1 2003)
191. Black, S., Critical Response Engineering, Inc., Alexandria, Virginia (PDA/1 *Bacillus anthracis* 2003)
192. Blair, H., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
193. Blanchard, D. J., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
194. Blanchard, T. W., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Yersinia pestis* 2001)
195. Blaser, M. J., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2003, 2005)
196. Blattner, F. R., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
197. Blazar, B. R., University of Minnesota, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2004)
198. Bliska, J. B., Brookhaven National Laboratory, Upton, New York/State University of New York at Stony Brook, Stony Brook, New York (PDA/1 *Yersinia pestis* 2003, 2004)
199. Bliss, K. A., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
200. Bobrov, A. G., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2002, 2004)
201. Bocanegra, R., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002)
202. Bode, E., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)

203. Bodey, B., University of Southern California, Los Angeles, California (PDA/1 Newcastle disease virus 2004)
204. Boiarski, A. A., BioSense Consulting, Columbus, Ohio (PDA/1 *Francisella tularensis* 2000)
205. Bolger, C. E., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2005)
206. Bolin, C. A., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
207. Bonaparte, M. I., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
208. Bonneau, K. R., University of California-Davis, Davis, California (PDA/1 Bluetongue virus 2000)
209. Bookout, J. B., ClinCyte, LLC, San Diego, California (PDA/1 *Brucella melitensis* 2000)
210. Boone, S. A., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2003)
211. Booth, N. J., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002)
212. Bora, R. S., Jefferson Medical College, Philadelphia, Pennsylvania (PDA/1 *Clostridium botulinum* 2004)
213. Boras, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
214. Borca, M. V., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2005, PDA/1 Classical swine fever virus 2003, 2005, PDA/1 Foot and mouth disease virus 2005)
215. Borisey, G. G., North-Western University, Chicago, Illinois (PDA/1 *Rickettsia rickettsii* 2004)
216. Borodovsky, M., Georgia Institute of Technology, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
217. Bortolin, L. T., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
218. Boshra, H., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
219. Bosio, C. M., United States Army Medical Research Institute of Infectious Diseases/Clinical Research Management, Frederick, Maryland/Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (EDA/2 Lake Victoria marburgvirus 2002, 2003, 2004, EDA/2 Zaire ebolavirus 2002, 2003, 2004, PDA/1 *Francisella tularensis* 2001)
220. Bossart, K. N., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
221. Bouhaouala, S. S., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2001, PDA/1 *Bacillus anthracis* 2001, 2002)

222. Boulianne, C., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
223. Bourgogne, A., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2003, 2004)
224. Bournce, P. C., Oklahoma State University, Stillwater, Oklahoma (PDA/1 *Bacillus anthracis* 2004)
225. Boutin, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
226. Bouvier, N., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2003)
227. Bouyer, D. H., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2005)
228. Bowen, M. D., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000, EDA/2 Junín virus 2000, PDA/1 Monkeypox virus 2002)
229. Bowen, R. A., Colorado State University, Fort Collins, Colorado (PDA/1 Venezuelan equine encephalitis virus 2001)
230. Bowerman, D., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
231. Bowling, J. M., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
232. Boyaka, P. N., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)
233. Boyd, M. R., Cancer Research Institute, College of Medicine, University of South Alabama, Mobile, Alabama (EDA/2 Zaire ebolavirus 2003)
234. Boyle, S. M., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2001)
235. Bozue, J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
236. Bradburne, C., Advanced Biosystems Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2004)
237. Bradshaw, M., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2000, 2003, 2004, 2005)
238. Bragg, S. L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
239. Braha, O., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2002)
240. Brandt, S., University of Nevada School of Medicine, Reno, Nevada (PDA/1 *Bacillus anthracis* 2004)
241. Branton, S. L., United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
242. Brassat, E., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)

243. Brault, A. C., University of Texas Medical Branch, Galveston, Texas/Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004, 2005)
244. Bray, M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland/National Institutes of Health, Bethesda, Maryland/United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, EDA/2 Crimean-Congo hemorrhagic fever virus 2004, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, EDA/5 Camelpox virus 2002, EDA/2 Tick-borne encephalitis virus 2000, 2001, EDA/5 Monkeypox virus 2002, MDA/4/5 Andes virus 2002, MDA/4/5 Cowpox virus 2000, 2002, PDA/1 *Bacillus anthracis* 2004, PDA/1 Camelpox virus 2001, 2003, PDA/1 Monkeypox virus 2001, 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
245. Brayton, K. A., Washington State University, Pullman, Washington (PDA/1 *Ehrlichia ruminantium* 2000, 2002, 2004, 2005)
246. Breadmore, M. C., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
247. Breeze, R., United States Department of Agriculture, Agricultural Research Service, Washington, D.C. (PDA/1 *Bacillus anthracis* 2003)
248. Brennan, R. E., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2003, 2004)
249. Brenneman, K., Ohio State University, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2004)
250. Bresnitz, E., Department of Health and Senior Services, Trenton, New Jersey (PDA/1 *Bacillus anthracis* 2003)
251. Brettin, T., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
252. Bricker, B. J., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001, 2003)
253. Bridge, D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
254. Bridges, J. H., United Postal Service, Washington, D. C. (PDA/1 *Bacillus anthracis* 2002)
255. Brigati, J., Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2004)
256. Bright, R. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
257. Brinkac, L. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
258. Brittingham, J. M., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
259. Brittingham, K. C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2005)
260. Broder, C. C., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)

261. Brook, I., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001, 2002)
262. Brown, B., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
263. Brown, C. C., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia/University of Georgia, Athens, Georgia (PDA/1 Foot and mouth disease virus 2000, PDA/1 Newcastle disease virus 2001, 2002, 2003)
264. Brown, D. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia mallei* 2000)
265. Brown, F., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2003, 2005)
266. Brown, J. E., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2005)
267. Brown, K., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000)
268. Brown, P. O., Stanford University, Stanford, Connecticut (EDA/1 Variola virus 2004)
269. Brown, P., Bethesda, Maryland (PDA/1 Bovine spongiform encephalopathy prion 2005)
270. Brown, S., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
271. Brown, T. D., East Carolina University, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
272. Brown, T. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2001)
273. Brown, W. C., Washington State University, Pullman, Washington (PDA/1 *Ehrlichia ruminantium* 2000)
274. Brubaker, R. R., Michigan State University, East Lansing, Michigan (PDA/1 *Yersinia pestis* 2000, 2002, 2004)
275. Brum, M. C., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2005)
276. Brumlik, M. J., University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001, 2004)
277. Bruno, J. G., University of Texas, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000)
278. Bryan, R., United States Army Dugway Proving Grounds, Dugway, Utah (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
279. Buccolo, L. S., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000)
280. Buchmeier, M. J., Scripps Research Institute, La Jolla, California (EDA/2 Junin virus 2000, EDA/2 Lassa virus 2002, 2003, 2004, 2005, EDA/2 Zaire ebolavirus 2003)
281. Budhavarapu, V. N., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)

282. Buhr, T. L., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
283. Buitenhuis, A. J., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
284. Bukofzer, S., Abbott Laboratories, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Yersinia pestis* 2003)
285. Bulaga, L. L., United States Department of Agriculture, Animal and Plant Health Inspection Service, Robbinsville, New Jersey (PDA/1 Influenza A virus 2002, 2003)
286. Bull, R. L., Naval Medical Research Center, Silver Spring, Maryland (MDA/4/5 *Bacillus anthracis* 2002, PDA/1 *Bacillus anthracis* 2004, PDA/1 *Clostridium botulinum* 2005)
287. Burgess, R. J., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Francisella tularensis* 2003)
288. Burke, D. J., University of Virginia, Charlottesville, Virginia (PDA/1 Foot and mouth disease virus 2002)
289. Burke, E., Scripps Research Institute, La Jolla, California (EDA/2 Zaire ebolavirus 2003)
290. Burkhalter, K., Centers for Disease Control and Prevention, Fort Collins, Colorado/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
291. Burkhardt, N. Y., University of Minnesota, St. Paul, Minnesota (PDA/1 *Rickettsia rickettsii* 2004)
292. Burland, V., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
293. Burnett, S. H., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2005)
294. Burr, D. H., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2005)
295. Burrage, T. G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2000, 2001, 2004, PDA/1 Foot and mouth disease virus 2000)
296. Burridge, M. J., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2000, 2001, 2002)
297. Burris, K., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
298. Burton, D. R., Scripps Research Institute, La Jolla, California (EDA/2 Zaire ebolavirus 2002, PDA/1 Bovine spongiform encephalopathy prion 2002)
299. Busch, J. D., Northern Arizona University, Flagstaff, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2002, 2004)
300. Busch, M., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
301. Bush, G. V., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia mallei* 2002)

302. Butts, J. D., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
303. Byers, B. R., University of Mississippi, Jackson, Mississippi (PDA/1 *Bacillus anthracis* 2004)
304. Byrne, W. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Coxiella burnetii* 2002, PDA/1 *Burkholderia mallei* 2001)
305. Bystrom, S. L., California Department of Health Services, Richmond, California (PDA/1 *Brucella melitensis* 2004)
306. Cai, S., University of Massachusetts Dartmouth, North Dartmouth, Massachusetts (PDA/1 *Clostridium botulinum* 2001)
307. Calampa, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
308. Calderon, Leilani, California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
309. Call, J., United States Department of Agriculture, Agricultural Research Service, Wyndmoor, Pennsylvania (PDA/1 *Bacillus anthracis* 2005)
310. Callahan, A., United States Department of Agriculture, Agricultural Research Service, Kearneysville, West Virginia (PDA/1 Plum pox virus 2001)
311. Callahan, J. D., Tetracore Inc., Gaithersburg, Maryland (PDA/1 African swine fever virus 2005, PDA/1 Classical swine fever virus 2003, 2005, PDA/1 Foot and mouth disease virus 2002)
312. Calvert, C. L., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000)
313. Cambier, S., University of California, San Francisco, California (PDA/1 Foot and mouth disease virus 2004)
314. Campbell, G. A., University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2005, PDA/1 Eastern equine encephalitis virus 2004)
315. Campbell, K. P., University of Iowa, Iowa City, Iowa (EDA/2 Guanarito virus 2002, EDA/2 Machupo virus 2002, PDA/1 Sabiá virus 2002, PDA/1 Flexal virus 2002)
316. Campbell, M. S., National Institutes of Health, Bethesda, Maryland (MDA/6 Langat virus 2000)
317. Canavessi, A. M., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
318. Cannon, P., Children's Hospital, Los Angeles, California (EDA/2 Junín virus 2003, 2004)
319. Cannons, A., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
320. Cao, G.-L., University of Maryland Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2005)
321. Capitano, J., University of California-Davis, Davis, California (PDA/1 Cercopithecine herpesvirus 1 2003)
322. Capsel, R. L., Intervet, Inc., Dallas Center, Iowa (PDA/1 *Brucella melitensis* 2000)

323. Cararra, S., University of Texas Medical Branch, Galveston, Texas (PDA/1 Eastern equine encephalitis virus 2004)
324. Carbonara, C., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003)
325. Cardon, M. L., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
326. Cardwell, J., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002, 2004)
327. Carlson, R. W., East Carolina University School of Medicine, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
328. Carmichael, K. P., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Newcastle disease virus 2002, 2003)
329. Carnes, R. Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003)
330. Carney, J. Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003)
331. Caron, L., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003)
332. Carra, J. H., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
333. Carrara, A.-S., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2003, 2004)
334. Carreno, A., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2005)
335. Carrillo, C, Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2005)
336. Carrington, James C., Oregon State University, Corvallis, Oregon (EDA/4 Plum pox virus 2002)
337. Carter, L. G., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2000)
338. Carter, V., University of Washington, Seattle, Washington (EDA/1 “1918 Influenza virus” 2004)
339. Carty, H. A., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)
340. Casey, L., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
341. Casey, M., Medical College of Wisconsin, Milwaukee, Wisconsin (PDA/1 *Francisella tularensis* 2004)
342. Castillo, U. F., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2002, 2003)
343. Castle, K. T., United States Geological Survey, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2001)
344. Caswell-Stephan, K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
345. Catalan, J., Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2002)

346. Catlin, K. M. K., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
347. Cattani, J., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
348. Caughlan, R., University of Illinois at Urbana-Champaign, Urbana, Illinois (PDA/1 *Yersinia pestis* 2002)
349. Cauthen, A. N., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2000)
350. Cello, J., State University of New York at Stony Brook, Stony Brook, New York (MDA/6 Poliovirus 2002)
351. Cendrowski, S., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2004)
352. Chabot, D. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
353. Chada, K., University of Medicine and Dentistry of New Jersey, Piscataway, New Jersey (PDA/1 Newcastle disease virus 2002)
354. Chada, V. G. R., Illinois Institute of Technology, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2003)
355. Chaga, O. Y., North-Western University, Chicago, Illinois (PDA/1 *Rickettsia rickettsii* 2004)
356. Chain, P. S. G., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Francisella tularensis* 2005, PDA/1 *Yersinia pestis* 2003, 2004)
357. Chambers, E., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Francisella tularensis* 2004)
358. Chambers, J. P., University of Texas San Antonio, San Antonio, Texas University of Texas San Antonio, San Antonio, Texas
359. Chambers, T. J., St. Louis University, St. Louis, Missouri (PDA/1 Japanese encephalitis virus 2001)
360. Chan, B., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
361. Chan, S. Y., Gladstone Institute of Virology and Immunology, San Francisco, California/University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2001)
362. Chandhoke, V., George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2005)
363. Chandler, L. M., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001)
364. Chandran, K., Harvard Medical School, Boston, Massachusetts (EDA/2 Zaire ebolavirus 2005)
365. Chang, C.-J., University of Georgia, Griffin, Maryland (PDA/1 *Xylella fastidiosa* 2002)
366. Chang, G.-J. J., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2000, 2001, 2003)

367. Chang, J. T., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
368. Chang, T., Y., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001, 2002)
369. Chao, C.-C., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2004)
370. Chapman, G., Naval Medical Research Center, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2005)
371. Chapman, J., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
372. Charles, P. C., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000, 2001)
373. Chaturvedi, Vishnu, New York State Department of Health, Albany, New York (PDA/1 *Coccidioides immitis* 2000)
374. Chea, F. P., Rutgers - The State University of New Jersey, New Brunswick, New Jersey (PDA/1 *Clostridium botulinum* 2000)
375. Chelius, D., Thermo Finnigan, San Jose, California (PDA/1 *Rickettsia prowazekii* 2004)
376. Chen, C., University of Georgia, Athens, Georgia (PDA/1 Newcastle disease virus 2003)
377. Chen, I-H., Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2004)
378. Chen, J., Florida A&M University, Tallahassee, Florida (PDA/1 *Xylella fastidiosa* 2002)
379. Chen, J., Massachusetts Institute of Technology, Cambridge, Massachusetts (PDA/1 *Yersinia pestis* 2003)
380. Chen, P., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003, 2004)
381. Chen, X., University of California, San Francisco, California (PDA/1 Newcastle disease virus 2004)
382. Chen, Y., Rutgers - The State University of New Jersey, New Brunswick, New Jersey (PDA/1 *Clostridium botulinum* 2000)
383. Chen, Y., Texas A&M University, Houston, Texas/University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2003, 2004, 2005)
384. Cherepanov, P., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000)
385. Cherni, A., Argonne National Laboratory, Argonne, Illinois (PDA/1 *Bacillus anthracis* 2004)
386. Cherry, S., National Cancer Institute Frederick, Maryland (PDA/1 *Yersinia pestis* 2005)
387. Cheville, N. F., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
388. Ching, W.-M., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2003, 2004)

389. Chinsangaram, J., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Georgia, Athens, Georgia (PDA/1 Foot and mouth disease virus 2000, 2001, 2003)
390. Chirgwin, S. R., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
391. Chiu, W., Baylor College of Medicine, Houston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003)
392. Chiueh, T.-S., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2003)
393. Chizhikov, V., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (EDA/1 Variola virus 2003, PDA/1 *Bacillus anthracis* 2004, PDA/1 Monkeypox virus 2003)
394. Cho, D., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
395. Choi, M. W., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2005)
396. Chopra, A. P., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2003)
397. Chou, T.-H., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
398. Choudhary, A., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
399. Choudhry, V., National Cancer Institute, Frederick, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
400. Christian, L., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
401. Chromy, B. A., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004, 2005)
402. Chu, C. K., College of Pharmacy, The University of Georgia, Athens, GA (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
403. Chu, M. C., Centers for Disease Control and Prevention, Atlanta, Georgia/Ft. Collins, Colorado (PDA/1 *Francisella tularensis* 2002, 2003, 2004, 2005, PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2005)
404. Chuang, Y.-Y. E., National Cancer Institute, National Institutes of Health, Gaithersburg, Maryland (PDA/1 *Rickettsia prowazekii* 2003, 2004)
405. Chumakov, K., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
406. Chunhong, T., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
407. Churas, C., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
408. Ciblak, M. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coccidioides immitis* 2000)

409. Cirillo, J. D., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
410. Clafin, L. E., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)
411. Clagett, M., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2005)
412. Clapham, P., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
413. Clark Burton, N., Centers for Disease Control and Prevention, Cincinnati, Ohio (MDA/4/5 *Bacillus globigii* 2005)
414. Clark, L. K., Purdue University, West Lafayette, Indiana (PDA/1 Foot and mouth disease virus 2003)
415. Clarridge III, J. E., Veterans Affairs Medical Center, Houston, Texas (PDA/1 *Francisella tularensis* 2000)
416. Claus, J. R., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Clostridium botulinum* 2000)
417. Clemens, D. L., University of California Los Angeles, Los Angeles, California (PDA/1 *Francisella tularensis* 2003)
418. Clemens, T., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2004)
419. Clements, J. D., Tulane University, New Orleans, Louisiana (PDA/1 Influenza A virus 2001)
420. Clemons, K. V., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, 2002, 2003, PDA/1 *Coccidioides posadasii* 2000)
421. Cline, R., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
422. Clippinger, T. L., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
423. Cloeckart, A., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
424. Cloud, S. S., University of Delaware, Newark, Delaware (PDA/1 Newcastle disease virus 2003)
425. Coalson, J. J., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides posadasii* 2003)
426. Cockerill III, F. R., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 *Bacillus anthracis* 2002, PDA/1 Monkeypox virus 2002)
427. Coffee, K. R., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
428. Coffey, L. L., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2004)
429. Coffman, G. L., James Madison University, Harrisonburg, Virginia (PDA/1 *Yersinia pestis* 2005)
430. Cohen, D. A., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004, 2005)

431. Coker, C., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2003)
432. Coker, P. R., Lawrence Livermore National Laboratory, Livermore, California/Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Bacillus anthracis* 2002, 2003)
433. Colby, L. A., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2002)
434. Cole, G. T., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000, 2001, 2002, 2003, PDA/1 *Coccidioides posadasii* 2000, 2003)
435. Cole, M. B., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Clostridium botulinum* 2000)
436. Coleman, M. A., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
437. Coleman, R. E., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
438. Coleman, S. A., National Institutes of Health, Hamilton, Montana (PDA/1 *Coxiella burnetii* 2004)
439. Coleman, S. U., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
440. Collier, R. J. Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2000)
441. Collier, S. D., United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
442. Collins, J. K., University of Arizona, Tucson, Arizona (PDA/1 Alcelaphine herpesvirus 1,2 2001)
443. Collins, L., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Francisella tularensis* 2003)
444. Colombini, S. M., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2002)
445. Colston Jr., B. W., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)
446. Cominelli, F., University of Virginia, Charlottesville, Virginia (PDA/1 Japanese encephalitis virus 2001)
447. Compans, R. W., Emory University, Atlanta, Georgia (EDA/2 Lassa virus 2002, 2003)
448. Condrón, M. A. M., University of Washington, Seattle, Washington (PDA/1 *Bacillus anthracis* 2002)
449. Condrón, M., Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2003)
450. Connell, N. D., University of Medicine and Dentistry of New Jersey, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
451. Contreras, A., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2003)

452. Cook, W. E., University of Wyoming, Laramie, Wyoming/Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2000, 2002)
453. Cooper, A., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2002)
454. Cooper, L. A., University of Maryland, College Park, Maryland (PDA/1 Eastern equine encephalitis virus 2000, 2001)
455. Cooper, M., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Bacillus anthracis* 2003)
456. Cote, C. K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
457. Cote, M. A., BCR Diagnostics, Inc., Jamestown, Rhode Island (PDA/1 *Bacillus anthracis* 2004)
458. Covert, J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2005)
459. Cowan, C., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2005)
460. Cowin, P. G., United States Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland (MDA/4/5 *Bacillus anthracis* 2002)
461. Cowley, S. C., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2002, 2003, 2004)
462. Cox, N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
463. Cox, R. A., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002, 2003)
464. Coyne, S. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
465. Crabtree, M. B., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Japanese encephalitis virus 2000, PDA/1 Rift Valley fever virus 2002)
466. Craik, C. S., University of California, San Francisco, California (PDA/1 *Yersinia pestis* 2004)
467. Crary, S. M., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2003, 2004)
468. Craven, K. E., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2002)
469. Craven, R. R., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (EDA/5 *Francisella tularensis* 2004)
470. Cravero, S., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000)
471. Craw, P. D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)

472. Crawford, J. M., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Newcastle disease virus 2002)
473. Crawford, R. M., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Brucella melitensis* 2000)
474. Crawford, T. B., United States Department of Agriculture, Agricultural Research Service, Dubois, Idaho/Washington State University, Pullman, Washington (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005, PDA/1 Alcelaphine herpesvirus 1,2 2000, 2001, 2002, 2003)
475. Creighton, R., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
476. Criscuolo, C. J., Fraunhofer USA Center for Molecular Biotechnology, Newark, Delaware (PDA/1 *Bacillus anthracis* 2005)
477. Crise, B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2001, MDA/4/5 Venezuelan equine encephalitis virus 2001)
478. Critchley, I. A., Focus Technologies, Herndon, Virginia (PDA/1 *Bacillus anthracis* 2003)
479. Crocquet-Valdes, P., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2000)
480. Cropp, C. B., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2001)
481. Cros, J., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2001, 2003, 2004, 2005)
482. Crossley, B. M., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 Newcastle disease virus 2005)
483. Crossno, J., University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2004)
484. Csarary, C. M., United Cancer Research Institute, Alexandria, Virginia (PDA/1 Newcastle disease virus 2004)
485. Csarary, L. K., United Cancer Research Institute, Alexandria, Virginia (PDA/1 Newcastle disease virus 2004)
486. Cui, K., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2004)
487. Cunningham, J. M., Harvard Medical School, Boston, Massachusetts (EDA/2 Zaire ebolavirus 2005)
488. Curns, A. T., Center fo Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
489. Currie, D., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
490. Curwin, B. D., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
491. Custer, D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)

492. Czerwieniec, G. A., University of California, Davis, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
493. d'Alessio, J., University of California, Berkeley, California (PDA/1 *Rickettsia rickettsii* 2004)
494. d'Souza, M., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
495. d'Alia, G., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
496. Dai, Z.-D., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
497. Dale, N. M., University of Georgia, Athens, Georgia (PDA/1 Newcastle disease virus 2003)
498. Damon, Inger K., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2003, 2004, PDA/1 Camelpox virus 2003 2004, PDA/1 Monkeypox virus 2002, 2003, 2004)
499. Damsteegt, V., United States Department of Agriculture, Agricultural Research Service, Fort Detrick, Frederick, Maryland (PDA/1 Plum pox virus 2001)
500. Dang, J. L., Geo-Centers, Inc., Lanham, Maryland (PDA/1 *Bacillus anthracis* 2001)
501. Dang, J. L., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Francisella tularensis* 2003)
502. Darby, C., Stanford University, Stanford, California/University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Yersinia pestis* 2002, 2004)
503. Das, A., University of Minnesota (EDA/5 *Coccidoides immitis* 2000)
504. Das, R., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
505. Dasch, G. A., Naval Medical Research Institute, Bethesda, Maryland/Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Rickettsia rickettsii* 2001, 2003)
506. DasGupta, B. R., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2001)
507. Daszak, Peter, Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2003)
508. Datskos, P. G., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Bacillus anthracis* 2003)
509. Datta, A., East Carolina University School of Medicine, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
510. Dattwyler, R. J., Stony Brook University, Stony Brook, New York (PDA/1 *Yersinia pestis* 2005)
511. Daubenspeck, J. M., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
512. Daugherty, S. C., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)

513. Daum, L. T., Brooks Air Force Base, San Antonio, Texas (PDA/1 Influenza A virus 2002, 2003)
514. Dave, K., Centers for Disease Control and Prevention, Fort Collins, Colorado/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
515. David, J. C., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Francisella tularensis* 2003)
516. Davidsen, T. D., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
517. Davidsen, T. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)
518. Davis, B., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2000)
519. Davis, C., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
520. Davis, D. S., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000, 2002)
521. Davis, K. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2001, 2002, 2003)
522. Davis, N. L., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Influenza A virus 2000, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2003)
523. Day, A. G., University of California, San Francisco, California (PDA/1 *Yersinia pestis* 2004)
524. Day, J. B., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2000, 2002, 2003, 2004)
525. de Avila Botton, S., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2005)
526. de Buysscher, E. V., North Carolina State University, Raleigh, North Carolina (PDA/1 Newcastle disease virus 2000)
527. de Leon Gatti, N., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
528. de los Santos, T., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2005)
529. De, B. K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
530. Deaghi, D. C., Focus Technologies, Herndon, Virginia (PDA/1 *Bacillus anthracis* 2003)
531. Deak, E., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
532. Deal, E. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, 2004)

533. Dean, C., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
534. DeArmond, S. J., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2005)
535. Deboy, R. T., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
536. Deering, C., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
537. Dekker III, J. P., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
538. del Giudice, R. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002)
539. del Vecchio, V. G., University of Scranton, Scranton, Pennsylvania/Vital Probes Inc., Mayfield, Philadelphia (PDA/1 *Bacillus anthracis* 2001, 2002, 2003, 2004, PDA/1 *Brucella melitensis* 2001, 2002)
540. DeLeo, F. R., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
541. Delgado, N., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides posadasii* 2003)
542. Delhon, G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2005)
543. deLiberto, T. J., Utah State University, Logan, Utah (PDA/1 *Brucella melitensis* 2002)
544. Delmar, V. A., University of California, San Francisco, California (PDA/1 *Yersinia pestis* 2004)
545. DeMartini, James C., Colorado State University, Fort Collins, Colorado (PDA/1 Alcelaphine herpesvirus 1,2 2001)
546. Demby, Austin H., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
547. Demmin, G. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
548. den Hartigh, A. B., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2002, 2004)
549. Deng, W., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
550. Dertzbaugh, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001)
551. DeShazer, D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia mallei* 2005, PDA/1 *Burkholderia mallei* 2000, 2001, 2002, 2004, PDA/1 *Burkholderia pseudomallei* 2001, 2004)
552. DeSilva, T. S., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)

553. Desjardins, N., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
554. Dewald, R., National Veterinary Services Laboratories, U.S, Department of Agriculture, Animal and Health Inspection Services, Ames, Iowa (PDA/1 *Burkholderia mallei* 2000)
555. Dickson, D., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
556. Dickson, J. S., Iowa State University, Ames, Iowa (PDA/1 *Bacillus anthracis* 2003)
557. Didorenko, S., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
558. Diem, L. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
559. Dimalanta, E. T., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
560. Dimitrov, A. S., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
561. Dimitrov, D. S., National Cancer Institute, Frederick, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
562. Dimitrov, G., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
563. Dineen, S. S., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2000, 2003, 2004)
564. Diop, M., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
565. Diptee, M. D., University of California Davis, Davis, California (PDA/1 *Brucella melitensis* 2003)
566. Dixon, J. D., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000)
567. Dixon, J. E., University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Yersinia pestis* 2002)
568. Dixon, T. C., Duke University, Durham, North Carolina/University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2000)
569. Dobson, M. E., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Francisella tularensis* 2002)
570. Dodge, D., Bayer Corporation, Emeryville, California (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
571. Dodson, R. J., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
572. Doe, B., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)

573. Dohm, D. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Rift Valley fever virus 2000, PDA/1 Venezuelan equine encephalitis virus 2000, 2004)
574. Doms, R. W., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Crimean-Congo hemorrhagic fever virus 2005, EDA/2 Zaire ebolavirus 2003)
575. Dong, J., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
576. Dong, S., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
577. Donlan, R. M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2005, PDA/1 *Yersinia pestis* 2003)
578. Dover, Jason E., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2005)
579. Dozier, III, W. A., United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
580. Drader, J. J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
581. Draper, K., Sierra Biomedical Inc., Sparks, Nevada/Tulane Regional Primate Center, Covington, Louisiana (PDA/1 Japanese encephalitis virus 2000, 2002)
582. Dreisbach, V. C., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2000)
583. Driks, A., Loyola University, Maywood, Illinois (PDA/1 *Bacillus anthracis* 2003)
584. Driscoll, J., National Cancer Institute, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2000)
585. Driskell, L. O., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia prowazekii* 2003)
586. Drysdale, M., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2003, 2004, 2005)
587. Du, Y., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000)
588. Dubensky Jr., T. W., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
589. Duckers, H. J., National Institutes of Health, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2000)
590. Duckett, N. S., Albany Medical College, Albany, New York (PDA/1 *Francisella tularensis* 2005)
591. Duesbery, N. S., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001, 2003)
592. Duesbery, N. S., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001)
593. Dukerich, M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Francisella tularensis* 2004)

594. Dunhamel, G. E., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
595. Dunkel, V. C., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
596. Dunowska, Magdalena, Colorado State University, Fort Collins, Colorado (PDA/1 Alcelaphine herpesvirus 1,2 2001)
597. Duque, H., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2004, 2005)
598. Durkin, A. S., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
599. Durno, M. A., United States Environmental Protection Agency Region 5, Westlake, Ohio (MDA/4/5 *Bacillus anthracis* 2002)
600. Durrant, D. M., Albany Medical College, Albany, New York (PDA/1 *Francisella tularensis* 2005)
601. Dworzanski, J. P., Geo-Centers, Inc., Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2004)
602. Dwyer, K. G., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2004)
603. Dybing, J. K., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (EDA/1 “1918 Influenza virus” 2001, PDA/1 Influenza A virus 2000)
604. Dzenitis, J. M., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005)
605. Easterday, W. R., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2005, PDA/1 *Yersinia pestis* 2004)
606. Eberle, R., Oklahoma State University, Stillwater, Oklahoma/University of California-Davis, Davis, California (PDA/1 Cercopithecine herpesvirus 1 2002, 2003, 2005)
607. Eblen, B. S., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Clostridium botulinum* 2005)
608. Eckels, K. H., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
609. Ecker, D. J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
610. Eckman, L., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)
611. Edmonds, M. D., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002)
612. Edmonds, P., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2002)

613. Edwards, H., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2002)
614. Eggers, C. T., University of California, San Francisco, California (PDA/1 *Yersinia pestis* 2004)
615. Eggers, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
616. Egziabher, B., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
617. Eisen, J. A., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Coxiella burnetii* 2003)
618. Ekkelenkamp, M., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2003)
619. Eklund, M. W., Unites States Department of Commerce, Seattle, Washington (PDA/1 *Clostridium botulinum* 2002, 2004)
620. el Tayeb, A. B., Ohio State University, Columbus, Ohio (PDA/1 Newcastle disease virus 2001, 2002)
621. Elankumaran, S., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2004)
622. el-Hajj, H., Public Health Research Institute, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
623. Elkins, K. L., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2000, 2001, 2002, 2003, 2004)
624. Elkins, R., National Institutes of Health, Bethesda, Maryland (EDA/2 Tick-borne encephalitis virus 2001)
625. Eller, N. L., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
626. Ellingsworth, L. R., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
627. Elliott, J. L., Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2000)
628. Elliott, J. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002, 2003, 2004)
629. Elliott, T. B., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001, 2002)
630. Ellis, S. J., Tetracore Inc, Gaithersburg, Maryland (PDA/1 Foot and mouth disease virus 2002)
631. Elmetts, C. A., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
632. Elzer, P. H., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003)
633. Emanuel, P. A., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2001, PDA/1 *Francisella tularensis* 2003)

634. Emmerich, E., Centers for Disease Control and Prevention, Fort Collins, Colorado/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
635. Empig, C. J., University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2001)
636. Enama, J. T., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2005)
637. Endley, S., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
638. Endy, T. P., Walter Reed Army Institute of Research, Silver Spring, Maryland (EDA/2 Crimean-Congo hemorrhagic fever virus 2004)
639. Engelthaler, D. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2000, 2002)
640. England, M. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Coxiella burnetii* 2002)
641. Enright, F. M., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002)
642. Epstein, S. L., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 Influenza A virus 2004) Ha, Y., Harvard Medical School, Boston, Massachusetts (PDA/1 Influenza A virus 2004)
643. Ermeeva, M. E., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2001, 2003)
644. Ernst, R. K., University of Washington, Seattle, Washington (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2004)
645. Eschenbrenner, M., University of Scranton, Scranton, Pennsylvania (PDA/1 *Brucella melitensis* 2002)
646. Eskra, L., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2003, 2005)
647. Esposito, Joseph J., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2000, 2001, 2003, PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2001, 2002, 2003)
648. Espy, Mark J., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 Monkeypox virus 2002)
649. Estacio, P. L., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
650. Estep, J., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2004)
651. Estrada-Franco, J. G., University of Texas Medical Branch, Galveston, Texas/ United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003, 2004)
652. Evans, J. D., United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
653. Evans, T., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)

654. Ewalt, D. R., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001, 2003)
655. Ewert, M., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
656. Eze, M. O., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2000)
657. Ezelle, H. J., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2004)
658. Ezzel, J. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002, 2005)
659. Fadl, A. A., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2000)
660. Fair, J. M., University of Missouri-St. Louis, St. Louis, Missouri (PDA/1 Newcastle disease virus 2002)
661. Falkow, S., Stanford University, Stanford, California (PDA/1 *Yersinia pestis* 2002, 2004)
662. Fan, W., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Yersinia pestis* 2001, 2003)
663. Fanning, T. G., Armed Forces Institute of Pathology, Washington, D.C. (EDA/1 “1918 Influenza virus” 2001)
664. Farlow, J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Francisella tularensis* 2001)
665. Farrow, S. W., United States Army Dugway Proving Grounds, Dugway, Utah (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005)
666. Fayzulin, R. Z., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2003)
667. Feldblyum, T., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
668. Feldman, S. H., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
669. Feldstein, M. J., Naval Research Laboratory, Center for Bio, Washington, D. C. (PDA/1 *Bacillus anthracis* 2002)
670. Fellows, P. F., Southern Research Institute, Frederick, Maryland/United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001, 2002, PDA/1 *Bacillus anthracis* 2001, 2003, 2004, 2005)
671. Feng, H. M., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2001)
672. Feng, J., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
673. Feng, Y.-R., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
674. Fenner, S., Orovax Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2001)

675. Fenselau, C., University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
676. Ferencik, L., BCR Diagnostics, Inc., Jamestown, Rhode Island (PDA/1 *Bacillus anthracis* 2004)
677. Fergenson, D. P., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
678. Ferguson, G. P., Massachusetts Institute of Technology, Cambridge, Massachusetts (PDA/1 *Brucella melitensis* 2004)
679. Ferman, G. S., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2005)
680. Fernandes, B., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
681. Fernandez, R., United States Naval Medical Research Center Detachment, Lima, Peru (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2000)
682. Fernandez-Prada, C. M., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2001, 2003)
683. Ferracci, F., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2003, 2004)
684. Ferrance, J. P., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
685. Ferrari, M., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
686. Ferreira, J. L., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2002, 2003, 2004)
687. Ferriter, M., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
688. Fetherston, J. D., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004)
689. Fey, P. D., University of Nebraska, Omaha, Nebraska (PDA/1 *Francisella tularensis* 2004)
690. Ficht, T. A., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2004)
691. Field, A. E., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2002, 2003)
692. Fierer, J., University of California, San Diego, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2005)
693. Finberg, R. W., Dana Farber Cancer Institute, Massachusetts (PDA/1 Human enterovirus B 2000)
694. Fingerhut, G. A., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2000)
695. Fischer, E. R., National Institutes of Health, Hamilton, Montana (PDA/1 *Coxiella burnetii* 2004, PDA/1 *Yersinia pestis* 2004)
696. Fischer, R., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)

697. Fischetti, V. A., Rockefeller University, New York, New York (PDA/1 *Bacillus anthracis* 2002)
698. Fisher, M. C., University of California at Berkeley, Berkeley, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
699. Fisher-Hoch, S. P., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
700. Fitch, J. P., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004, 2005)
701. Fitzgerald, C. C., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
702. Foil, L. D., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Rickettsia prowazekii* 2000)
703. Forbes, L. B., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
704. Ford, E. J., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2002, 2003)
705. Forde, C. E., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
706. Forestal, C. A., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003, 2005)
707. Forrest, D., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
708. Forsberg, A., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000)
709. Fosgate, G. T., University of California Davis, Davis, California (PDA/1 *Brucella melitensis* 2003)
710. Foster, K. W., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
711. Fouts, D. E., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
712. Fowler, J., Michigan State University, East Lansing, Michigan (PDA/1 *Yersinia pestis* 2004)
713. Fox, A., University of South Carolina, Columbia South Carolina (PDA/1 *Bacillus anthracis* 2004)
714. Fox, J. W., University of Virginia, Charlottesville, Virginia (PDA/1 Foot and mouth disease virus 2002)
715. Fox, J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Francisella tularensis* 2004)
716. Fox, K. F., University of South Carolina, Columbia South Carolina (PDA/1 *Bacillus anthracis* 2004)
717. Fox, N., University of South Carolina, Columbia South Carolina (PDA/1 *Bacillus anthracis* 2004)
718. Frace, A. M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2000)

719. Francis, A. W., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
720. Francis, C. W., University of Rochester Rochester, New York (PDA/1 *Rickettsia rickettsii* 2003, 2004)
721. Frank, D. W., Medical College of Wisconsin, Milwaukee, Wisconsin (PDA/1 *Francisella tularensis* 2004)
722. Frank, M., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
723. Frank, R. S., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
724. Franklin, G., Scripps Research Institute, La Jolla, California (PDA/1 *Yersinia pestis* 2004)
725. Frans, G., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2002)
726. Fraser, C. M., Institute for Genomic Research, Rockville, Maryland/University of Texas, Houston, Texas/US Army Medical Research Institute for Infectious Diseases, Ft. Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
727. Fredeking, T. M., Antibody Systems, Hurst, Texas (EDA/2 Zaire ebolavirus 2003)
728. Freed, J. A., Agency for Toxic Substances and Disease Registry, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
729. Freier, J. E., United States Department of Agriculture Center for Animal Disease Information and Analysis, Fort Collins, Colorado (PDA/1 Venezuelan equine encephalitis virus 2001)
730. French, F. E., Georgia Southern University, Statesboro, Georgia (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
731. French, R. A., Department of Pathobiology, University of Connecticut, Storrs, Connecticut (PDA/1 African swine fever virus 2005, PDA/1 Classical swine fever virus 2005)
732. French, S. A., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
733. Frias-Stäheli, N., Mount Sinai School of Medicine, New York, New York (EDA/2 Crimean-Congo hemorrhagic fever virus 2005)
734. Friedlander, A. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001, 2003 PDA/1 *Bacillus anthracis* 2001, 2002, 2004, 2005, PDA/1 *Yersinia pestis* 2000, 2002, 2004)
735. Fritsche, K. L., University of Missouri, Columbia, Missouri (PDA/1 Newcastle disease virus 2000)
736. Fritz, D. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia pseudomallei* 2003, PDA/1 *Bacillus anthracis* 2001, PDA/1 *Burkholderia mallei* 2000, 2001, 2002, PDA/1 Eastern equine encephalitis virus 2005)
737. Frolov, I., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2003, 2005)

738. Fry, F. S., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
739. Frye, M. S., Loveless, B., Geo-Centers, Newtown, Massachusetts (PDA/1 *Bacillus anthracis* 2004)
740. Fryxell, K. J., George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2005)
741. Fujihashi, K., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)
742. Fulhorst, C. F., University of Texas Medical Branch, Galveston, Texas (EDA/2 Guaranito virus 2000, 2002, 2003, EDA/2 Junin virus 2002, 2003, EDA/2 Machupo virus 2002, 2003, EDA/2 Lassa virus 2002, 2003)
743. Fuller, C. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2005)
744. Fuller, F. J., North Carolina State University, Raleigh, North Carolina (PDA/1 Newcastle disease virus 2000)
745. Fuller, J. R., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (EDA/5 *Francisella tularensis* 2004)
746. Fulroth, B., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2005)
747. Fulton, W. T., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2001, 2002)
748. Furie, M. B., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003, 2005)
749. Gabriel, D. W., University of Florida, Gainesville, Florida (PDA/1 *Xylella fastidiosa* 2003)
750. Gaffney, K. L., Naval Research Laboratory, Center for Bio/Molecular Science and Engineering, Washington, D. C./Tetracore Inc, Gaithersburg, Maryland (PDA/1 Foot and mouth disease virus 2002, PDA/1 *Francisella tularensis* 2000)
751. Gage, K. L., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2000, 2003, 2005)
752. Galeano, B., University of Arizona, Tucson, Arizona (PDA/1 *Bacillus anthracis* 2003)
753. Galgiani, J. N., University of Arizona, Tucson, Arizona (EDA/5 *Coccidioides immitis* 2000, PDA/1 *Coccidioides immitis* 2002, PDA/1 *Coccidioides posadasii* 2005)
754. Galloway, D., Naval Medical Research Center, Silver Spring, Maryland/Ohio State University, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2004, PDA/1 *Bacillus anthracis* 2004)
755. Gamez-Chin, Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2001)
756. Ganta, R. R., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2001)
757. Garber, L. P., Centers for Epidemiology and Animal Health, National Animal Health Monitoring System, Fort Collins, Colorado (PDA/1 Influenza A virus 2002, 2003)

758. Garcia, E., CIPHERGEN Biosystems, Fremont, California/Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Francisella tularensis* 2005, PDA/1 *Yersinia pestis* 2001, 2002, 2003, 2004)
759. Garcia, M., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2000)
760. Garcia-Sastre, A., Mount Sinai School of Medicine, New York, New York (EDA/1 “1918 Influenza virus” 2001, 2002, 2004, EDA/2 Crimean-Congo hemorrhagic fever virus 2005, EDA/2 Zaire ebolavirus 2003, PDA/1 Influenza A virus 2003, PDA/1 Newcastle disease virus 2001, 2003, 2004, 2005)
761. Gard, E. E., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
762. Gardner, D., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2005)
763. Gardner, M. J., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides posadasii* 2003)
764. Garic-Stankovic, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
765. Garner, B. L., University of Mississippi, Jackson, Mississippi (PDA/1 *Bacillus anthracis* 2004)
766. Garner, H. R., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
767. Garnham, J. B., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
768. Garrett, J. L., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Brucella melitensis* 2001)
769. Garrison, A. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
770. Garrison, J., Battelle, Columbus, Ohio (PDA/1 *Bacillus anthracis* 2003, 2004)
771. Garrison, K., University of New Mexico, Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004)
772. Gasbarre, L. C., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Brucella melitensis* 2002)
773. Gaske, K. S., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
774. Gaspard, R., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2005)
775. Gasparich, G. E., Towson University, Towson, Maryland (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
776. Gasper, P. W., University of Maryland, College Park, Maryland (PDA/1 *Yersinia pestis* 2001)
777. Gauntt, C. J., University of Texas San Antonio, San Antonio, Texas (PDA/1 Human enterovirus B 2000)

778. Gaywee, J., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2002)
779. Gbakima, A., Morgan State University, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003)
780. Ge, H., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2003, 2004)
781. Ge, H., Novozymes Biotech Inc., Davis, California (PDA/1 *Bacillus anthracis* 2003)
782. Gebhardt, J. S., Naval Medical Research Center, Silver Spring, Maryland (MDA/4/5 *Bacillus anthracis* 2002)
783. Gee, J. E., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
784. Geisbert, J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2000, 2001, EDA/2 Lassa virus 2001, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004)
785. Geisbert, T. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus, EDA/2 Lake Victoria marburgvirus 2000, 2002, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004, MDA/4/5 Monkeypox virus 2001, PDA/1 Venezuelan equine encephalitis virus 2003)
786. Gendel, S. M., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2000)
787. Gendron-Fitzpatrick, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2002)
788. Geoffroy, V. A., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2001, 2002)
789. Georgescu, A. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002, 2004)
790. Gerrard, Sonja R., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
791. Gerstein, M., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
792. Ghorri, N., Stanford University, Stanford, California (PDA/1 *Yersinia pestis* 2002)
793. Ghosh, A. K., St. Louis University, St. Louis, Missouri (PDA/1 Newcastle disease virus 2003)
794. Gibaja, V., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
795. Gibb, T. R., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2004)
796. Gibb, T. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2000, 2001, EDA/2 Sudan ebolavirus 2001, EDA/2 Zaire ebolavirus 2000, 2001, 2002)

797. Gibbs, P. H., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001, MDA/4/5 *Coxiella burnetii* 2002, PDA/1 *Bacillus anthracis* 2001, 2002, 2004)
798. Gibson, B. W., University of California, San Francisco, San Francisco (PDA/1 *Francisella tularensis* 2004)
799. Gidlewski, T., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001, 2004)
800. Giehl, T., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
801. Gifford, H., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
802. Gil, H., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2004)
803. Gill, S. R., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
804. Gilmore, Jr., R. D., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004)
805. Gilsdorf, M. J., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa/United States Department of Agriculture, Animal and Plant Health Inspection Service, Riverdale, Maryland (PDA/1 *Brucella melitensis* 2000, 2001)
806. Gingrich, E., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
807. Giordano, B. C., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
808. Giorno, R., Loyola University, Maywood, Illinois (PDA/1 *Bacillus anthracis* 2003)
809. Girshick, T., Charles River SPAFAS, Inc., Storrs, Connecticut (PDA/1 Newcastle disease virus 2002)
810. Glasner, J. D., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
811. Glass, J. D., Brookhaven National Laboratory, Upton, New York (PDA/1 *Yersinia pestis* 2005)
812. Glass, J., Institute for Biological Energy Alternatives, Manassas, Virginia (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
813. Glass, K. A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2004)
814. Glass, M. B., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Burkholderia mallei* 2002, 2005, PDA/1 *Burkholderia pseudomallei* 2002, 2005)
815. Glenn, G. M., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
816. Glover, D. A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
817. Gnade, B. T., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)

818. Godsey, M. S., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
819. Goff, J., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2004)
820. Goguen, J., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Yersinia pestis* 2001, 2004)
821. Gold, J. A., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
822. Golde, W. T., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2004, 2005)
823. Golding, B., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Brucella melitensis* 2001)
824. Goldsmith, C. S., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2005, PDA/1 Nipah virus 2000, 2003)
825. Goldsmith, M. A., Gladstone Institute of Virology and Immunology, San Francisco, California/University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2001)
826. Golenbock, D. T., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Coxiella burnetii* 2004)
827. Goley, E. D., University of California, Berkeley, California (PDA/1 *Rickettsia rickettsii* 2004)
828. Goltsman, E., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
829. Gomes-Solecki, M. J. C., Stony Brook University, Stony Brook, New York (PDA/1 *Yersinia pestis* 2005)
830. Gong, S., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2001)
831. Gonzalez, A. D., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004, 2005)
832. Gonzalez, G. M., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2001, 2002)
833. Gonzalez, M. D., University of Illinois at Urbana-Champaign, Urbana, Illinois (PDA/1 *Yersinia pestis* 2002)
834. Goode, M. T., United States Army Edgewood Research, Aberdeen Proving Ground, Maryland University of Texas San Antonio, San Antonio, Texas
835. Goodin, J. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2005)
836. Goodnough, M., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2003)
837. Gostomski, M., United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2001)

838. Gottfried, K. L., Centers for Disease Control and Prevention, Fort Collins, Colorado/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
839. Govindarajan, D., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2004)
840. Govorkova, E. A., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2002, 2005)
841. Gowen, B. B., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004, 2005)
842. Goyal, S. M., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2004)
843. Grabenstein, J. P., State University of New York at Stony Brook, Stony Brook, New York (PDA/1 *Yersinia pestis* 2004)
844. Gravel, K., University of Massachusetts, Worcester, Massachusetts (PDA/1 Newcastle disease virus 2002, 2003)
845. Graves, I. L., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2001)
846. Graves, M. H., California Department of Health Services, Richmond, California (PDA/1 *Brucella melitensis* 2004)
847. Graybill, J. R., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2001, 2002)
848. Greene, I. P., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2003, 2004, 2005)
849. Greengard, O., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2004)
850. Greer, C. E., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
851. Greer, P., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2004, 2005, PDA/1 *Bacillus anthracis* 2003)
852. Gregg, D., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2004)
853. Gregory, J. B., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003)
854. Grene, E., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002, 2003, 2004)
855. Grieder, B. F., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina/ Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000, 2003)
856. Grieshaber, S. S., University of Wyoming, Laramie, Wyoming (PDA/1 *Rickettsia rickettsii* 2003)
857. Grinshpun, S. A., Centers for Disease Control and Prevention, Cincinnati, Ohio (MDA/4/5 *Bacillus globigii* 2005)

858. Grippe, V. K., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland/Louisiana State University, Shreveport, Louisiana (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Brucella melitensis* 2000)
859. Grogan, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2003 EDA/2 Zaire ebolavirus 2003)
860. Groisman, E. A., Washington University, St. Louis, Missouri (PDA/1 *Yersinia pestis* 2005)
861. Gromadzki, Sally G., New York State Department of Health, Albany, New York (PDA/1 *Coccidioides immitis* 2000)
862. Gronenborn, A. M., National Institutes of Health, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2003)
863. Groth, D., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
864. Grubman, M. J., Oak Ridge Institute, Oak Ridge, Tennessee/Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Georgia, Athens, Georgia (PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2003, 2005)
865. Gu, P. P., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
866. Guarner, J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003)
867. Guarro, J., University of California Berkeley, California (PDA/1 *Coccidioides immitis* 2003, PDA/1 *Coccidioides posadasii* 2003)
868. Gubler, D. J., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2003, PDA/1 Nipah virus 2000)
869. Guebre-Xabier, M., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
870. Guest, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2000)
871. Guevara, C., Naval Medical Research Center Detachment, NAMRID, Peru (PDA/1 Venezuelan equine encephalitis virus 2004)
872. Guevara-Olvera, L., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000)
873. Guiney, D. G., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)
874. Guirakhoo, F., Orovax Inc./ Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000, 2001, 2002, 2004)
875. Guller, I., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2000)
876. Gupta, M., Centers for Disease Control and Prevention, Atlanta, Georgia/Emory University, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2001, 2003, 2004, 2005)
877. Gupta, P., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)

878. Gursel, I., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2005)
879. Gutierrez, D. M., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005)
880. Gutting, B. W., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
881. Guzman, H., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2002, PDA/1 Venezuelan equine encephalitis virus 2004)
882. Gwinn, M. L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
883. Haanes, E. J., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
884. Hackney, C. R., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Clostridium botulinum* 2000)
885. Hadfield, T. L., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003, 2004, PDA/1 *Francisella tularensis* 2002, 2003, PDA/1 Monkeypox virus 2002)
886. Hadjipanayis, A. G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2003)
887. Hadley, R. T., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
888. Haff, W. B., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Yersinia pestis* 2003)
889. Haft, D. H., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
890. Hagius, S. D., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003)
891. Halfmann, P., University of Wisconsin, Madison, Wisconsin (EDA/1 “1918 Influenza virus” 2004)
892. Hall, H. L., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
893. Hall, H., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
894. Hall, J. D., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (EDA/5 *Francisella tularensis* 2004)
895. Halling, S. M., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2003)
896. Halpin, K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2001, 2004)
897. Hamdy, M. K., University of Georgia, Athens, Georgia (PDA/1 *Clostridium botulinum* 2003)

898. Hammamieh, R., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
899. Hammer, R. P., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
900. Hammock, B. D., University of California, Davis, California (PDA/2 *Autographa californica* multiple nucleopolyhedrovirus 2003)
901. Hammond, R. W., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 Newcastle disease virus 2005)
902. Han, Z., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
903. Hance, I. R., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
904. Hanley, K. A., National Institutes of Health, Bethesda, Maryland (EDA/2 Tick-borne encephalitis virus 2001)
905. Hanna, P. C., Johns Hopkins University, Baltimore, Maryland/University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2000, 2002, 2003, 2004, 2005)
906. Hannis, J. C., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
907. Hanson, R. P., Ohio State University, Columbus, Ohio (PDA/1 Newcastle disease virus 2001, 2002)
908. Harakava, R., University of Florida, Gainesville, Florida (PDA/1 *Xylella fastidiosa* 2003)
909. Harcourt, B. H., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002, 2005)
910. Harding, R. A., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001, 2002)
911. Harlander, R. S., University of Wyoming, Laramie, Wyoming (PDA/1 *Rickettsia rickettsii* 2003)
912. Harms, J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
913. Harper, J. D., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
914. Harper, J. K., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2003)
915. Harrison, M. A., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2002)
916. Hart, J. A., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Brucella melitensis* 2001)
917. Hart, M. K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2000, 2001, 2003, PDA/1 *Bacillus anthracis* 2002, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, PDA/1 Venezuelan equine encephalitis virus 2003)

918. Hartings, J. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia pseudomallei* 2003)
919. Hartley, H. A., Cornell University, Ithaca, New York (PDA/1 *Bacillus anthracis* 2003)
920. Hartung, John S., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Xylella fastidiosa* 2002)
921. Harty, R. N., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2002, 2003, 2004, 2005)
922. Harvey, S. P., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Burkholderia mallei* 2005)
923. Haseman, J. R., University of Minnesota, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2004)
924. Hassett, D. J., University of Cincinnati, Cincinnati, Ohio (PDA/1 *Francisella tularensis* 2004)
925. Hatfill, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2001)
926. Hatta, M., University of Wisconsin, Madison, Wisconsin (EDA/1 “1918 Influenza virus” 2004)
927. Hauser, L. J., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Yersinia pestis* 2004)
928. Havig, A., Medical College of Wisconsin, Milwaukee, Wisconsin (PDA/1 *Francisella tularensis* 2004)
929. Hayes, S. F., National Institutes of Health, Hamilton, Montana (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
930. Hazbon, M. H., University of Medicine and Dentistry of New Jersey, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
931. Hazen, A., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
932. He, B. University of Illinois at Chicago (EDA/2 Zaire ebolavirus 2003, 2004)
933. He, Y., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2001, 2002)
934. Heidbrink, J. L., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
935. Heidebrink, K. D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003)
936. Heidelberg, J. F., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)
937. Heilman, D., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
938. Hein, M. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
939. Heine, H. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia mallei* 2001)

940. Heinzen, R. A. National Institutes of Health, Hamilton, Montana/University of Wyoming, Laramie, Wyoming (PDA/1 *Coxiella burnetii* 2002, 2003, 2004, PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000, 2003, 2004)
941. Helgason, E., George Washington University, Washington D. C. (PDA/1 *Bacillus anthracis* 2003)
942. Heller, B. A., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
943. Henchal, E. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Sudan ebolavirus 2001, EDA/2 Zaire ebolavirus 2001, 2002, PDA/1 *Bacillus anthracis* 2002, 2003, PDA/1 *Yersinia pestis* 2002, 2003)
944. Henderer, B. D., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005)
945. Hendrix, L. R., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2004, 2005)
946. Heninger, S., University of New Mexico, Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004, 2005)
947. Henneger, S. B., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
948. Henry, T. M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2001, 2003, 2004)
949. Hensley, L. E., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2004, EDA/2 Lake Victoria marburgvirus 2000, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004, MDA/4/5 Monkeypox virus 2001, MDA/4/5 Variola virus 2004)
950. Hermanson, G., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
951. Heroux, K., Geo-Centers, Inc., Lanham, Maryland (PDA/1 *Bacillus anthracis* 2001)
952. Herr, R. A., University of California Berkeley, California (PDA/1 *Coccidioides immitis* 2003, PDA/1 *Coccidioides posadasii* 2003)
953. Hess, W. M., Brigham Young University, Provo, Utah (PDA/1 *Bacillus anthracis* 2002, 2003)
954. Heuvelmans, N., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2004)
955. Hevey, Michael, United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2000, 2002, 2003, EDA/2 Lake Victoria marburgvirus 2001, 2002, 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
956. Hewetson, J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001)
957. Hibbs, S., University of Maryland Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2005)

958. Hice, C., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2004)
959. Hickman, J. R., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
960. Hietala, S. K., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 *Brucella melitensis* 2003, PDA/1 Newcastle disease virus 2005)
961. Higgins, J. A., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Francisella tularensis* 2000, PDA/1 *Rickettsia prowazekii* 2002)
962. Hill, K. K., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2003, 2004, PDA/1 *Yersinia pestis* 2000)
963. Hilliard, J. K., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2002, 2003)
964. Hilsenbeck, S. G., Baylor College of Medicine, Houston, Texas (PDA/1 *Bacillus anthracis* 2003, 2004)
965. Hindson, B. J., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)
966. Hines, A., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000, 2004)
967. Hines, H. B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia mallei* 2004)
968. Hines, J., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2001)
969. Hinnebusch, B. J., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000, 2002, 2004, 2005)
970. Hinrichs, S. H., University of Nebraska, Omaha, Nebraska (PDA/1 *Francisella tularensis* 2004)
971. Hird, D. W., University of California Davis, Davis, California (PDA/1 *Brucella melitensis* 2003)
972. Hobart, P., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
973. Hoe, N. P., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
974. Hoffmann, E., St. Jude Children's Research Hospital, Memphis, Tennessee (MDA/1 Influenza B virus 2005, PDA/1 Influenza A virus 2003)
975. Hoffmaster, A. R., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, 2005, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
976. Hofstadler, S. A., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
977. Hogan, R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2003 EDA/2 Zaire ebolavirus 2003)

978. Holbrook, Michael R., Center for Biodefense and Emerging Infectious Diseases and Sealy Center for Vaccine Development, University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2003, 2004, 2005)
979. Holinka, L. G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Classical swine fever virus 2005)
980. Holland, S. D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2003)
981. Hollis, M. A., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
982. Holmes, D. A., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2003)
983. Holmes, H. T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
984. Holtzapple, E., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003)
985. Holwitt, E. A., Conceptual MindWorks, Inc., San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000, 2002)
986. Hong, P., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000)
987. Honig, J. E., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Crimean-Congo hemorrhagic fever virus 2004, EDA/2 Zaire ebolavirus 2003)
988. Höök, M., Texas A&M University, Houston, Texas (PDA/1 *Bacillus anthracis* 2004)
989. Hoover, D. L., Walter Reed Army Institute of Research, Washington, D.C. (MDA/4/5 *Brucella melitensis* 2004, PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003, 2004)
990. Hoover, T. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
991. Hopkins, S., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2005)
992. Horn, J. M., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus thuringiensis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
993. Horn, T. A., Mujer, C., University of Scranton, Scranton, Pennsylvania (PDA/1 *Brucella melitensis* 2002)
994. Hornsby, R. L., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
995. Hornung, R., Centers for Disease Control and Prevention, Cincinnati, Ohio (MDA/4/5 *Bacillus globigii* 2005)
996. Horwitz, M. A., University of California Los Angeles, Los Angeles, California (PDA/1 *Francisella tularensis* 2003)
997. Hoshino, S., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
998. Hoshino, Y., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2004)

999. House, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
1000. Howe, D., University of Wyoming, Laramie, Wyoming/University of Wyoming, Laramie, Wyoming/National Institutes of Health, Hamilton, Montana/Washington State University, Pullman, Washington (PDA/1 *Coxiella burnetii* 2000, 2002, 2003, 2004, PDA/1 *Rickettsia rickettsii* 2003)
1001. Howell, K. J., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
1002. Hoyt, P. G., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2001)
1003. Hselkorn, R., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1004. Hsu, H., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1005. Hsu, J. W., Stanford University, Stanford, California (PDA/1 *Yersinia pestis* 2002)
1006. Hsu, L.-C., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)
1007. Hu, P., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002)
1008. Hua, Y., United States Department of Agriculture, Agricultural Research Service, Pathology and Washington State University, Pullman, Washington (PDA/1 Alcelaphine herpesvirus 1,2 2001)
1009. Huang, C.-M., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
1010. Huang, J., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
1011. Huang, X.-Z., University of Massachusetts, Worcester, Massachusetts/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Yersinia pestis* 2002, 2004)
1012. Huang, Z., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2001, 2003, 2004)
1013. Huber, V. C., St. Jude Children's Research Hospital, Memphis, Tennessee (MDA/1 Influenza B virus 2005)
1014. Huestis, W. H., Stanford University, Stanford, California (PDA/1 Newcastle disease virus 2000)
1015. Huff, J. L., University of California-Davis, Davis, California (PDA/1 Cercopithecine herpesvirus 1 2003)
1016. Huggins, J. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, 2004, EDA/2 Zaire ebolavirus 2001, 2005, EDA/5 Camelpox virus 2002, EDA/5 Monkeypox virus 2002, MDA/4/5 Cowpox virus 2000, MDA/4/5 Variola virus 2004, PDA/1 Camelpox virus 2001, 2003, PDA/1 Monkeypox virus 2001, 2003)
1017. Hugh-Jones, M., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Bacillus anthracis* 2000, 2002, 2003, PDA/1 Newcastle disease virus 2004)

1018. Hulbert, S. H., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)
1019. Hull, A. K., Fraunhofer USA Center for Molecular Biotechnology, Newark, Delaware (PDA/1 *Bacillus anthracis* 2005)
1020. Hulse, D., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003, 2004)
1021. Humberd, J., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003)
1022. Hung, Chiung-Yu, Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000, 2001, 2002, PDA/1 *Coccidioides posadasii* 2000, 2003)
1023. Hunt, A. R., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2000, 2001, 2003)
1024. Hunt, A., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
1025. Hunt, R., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003)
1026. Hunter, M., Novozymes Biotech Inc., Davis, California (PDA/1 *Bacillus anthracis* 2003)
1027. Hurtle, W., Clinical Research Management, North Royalton, Ohio (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, PDA/1 *Yersinia pestis* 2002, 2003)
1028. Husain, M. M., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
1029. Hustad, Heather L., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
1030. Hutchinson, K., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2003, EDA/2 Reston ebolavirus 2001, EDA/2 Zaire ebolavirus 2003)
1031. Hutchison III, C. A., Institute for Biological Energy Alternatives, Rockville, Maryland (PDA/6 Enterobacteria phage ϕ X174 2003)
1032. Hutt, J., Lovelace Respiratory Research Institute, Albuquerque, New Mexico/University of New Mexico Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004, 2005)
1033. Hutwagner, L., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
1034. Huynh, L. Y., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
1035. Hwang, R., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
1036. Ikegami, T., Centers for Disease Control and Prevention, Atlanta, Georgia/University of Texas Medical Branch, Galveston, Texas (PDA/1 Rift Valley fever virus 2005)
1037. Inceoglu, B., University of California, Davis, California (PDA/2 *Autographa californica* multiple nucleopolyhedrovirus 2003)
1038. Inman, J., National Institutes of Health, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)

1039. Innes, K., Colorado State University, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2001)
1040. Innis, B. L., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
1041. Intrepido, A. J., United States Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland (MDA/4/5 *Bacillus anthracis* 2002)
1042. Iqbal, S. S., University of Texas San Antonio, San Antonio, Texas University of Texas San Antonio, San Antonio, Texas
1043. Irani, P. R., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
1044. Ireland, J. A. W., Duke University, Durham, North Carolina/University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2002)
1045. Italo, J. K., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003, 2005)
1046. Ivanova, N., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1047. Ives, T. J., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
1048. Ivey, F. D., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002, 2003)
1049. Ivins, B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, MDA/4/5 *Bacillus anthracis* 2001, PDA/1 *Bacillus anthracis* 2001, 2002, 2004, 2005, PDA/1 Venezuelan equine encephalitis virus 2003)
1050. Iwen, P. C., University of Nebraska, Omaha, Nebraska (PDA/1 *Francisella tularensis* 2004)
1051. Iyer, S., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
1052. Izadjoo, M. J., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Brucella melitensis* 2000, 2002, 2004)
1053. Jaax, N. K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2000, EDA/2 Zaire ebolavirus 2000, 2001)
1054. Jablonski, L., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1055. Jackman, J., Johns Hopkins University, Laurel, Maryland (PDA/1 *Bacillus anthracis* 2004)
1056. Jackson 3rd, W. E., Armed Forces Radiobiology Research Institute, Bethesda, Maryland? (MDA/4/5 Venezuelan equine encephalitis virus 2001)
1057. Jackson, M. W., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2000, 2004, 2005)
1058. Jackson, P. J., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2000, 2003, 2004, PDA/1 Newcastle disease virus 2004, (PDA/1 *Yersinia pestis* 2000))

1059. Jacobs, M. F., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1060. Jahan, N., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Yersinia pestis* 2001)
1061. Jahrling, Peter B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, 2004, EDA/2 Lassa virus 2001, EDA/2 Lake Victoria marburgvirus 2000, 2001, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2004, MDA/4/5 Monkeypox virus 2001, MDA/4/5 Variola virus 2004, PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2001, 2002, 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
1062. Jama, Y., Advanced Biosystems Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2004)
1063. Janczewski, T. A., Armed Forces Institute of Pathology, Washington, D.C. (EDA/1 “1918 Influenza virus” 2001)
1064. Janda, J. M., California Department of Health Services, Berkeley, California (PDA/1 *Yersinia pestis* 2000)
1065. Jaramillo, M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1066. Jardieu, P., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
1067. Jarrett, C. O., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
1068. Jarvis, B. W., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2003)
1069. Javid, M. P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
1070. Jayarama, V., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
1071. Jeddelloh, J. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia pseudomallei* 2003, PDA/1 *Burkholderia mallei* 2002, 2004, 2005, PDA/1 *Burkholderia pseudomallei* 2001)
1072. Jeng, R. L., University of California, Berkeley, California (PDA/1 *Rickettsia rickettsii* 2004)
1073. Jenny, A. L., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Venezuelan equine encephalitis virus 2003)
1074. Jensen, A. E., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2003)
1075. Jensen, B., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005)
1076. Jensen, D., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2002)
1077. Jensen, J. B., Brigham Young University, Provo, Utah/Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2002, 2003)

1078. Jensen, R. B., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
1079. Jeor, S. C. St., University of Nevada at Reno, Reno, Nevada (EDA/2 Junin virus 2000)
1080. Jett, M., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
1081. Jiang, C., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002)
1082. Jiang, G., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
1083. Jiang, L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003)
1084. Jiang, X., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Brucella melitensis* 2000, 2001)
1085. Jiang, Y., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
1086. Jin, Y. H., College of Pharmacy, The University of Georgia, Athens, GA (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
1087. Johannesson, H., University of California Berkeley, California (PDA/1 *Coccidioides immitis* 2003, PDA/1 *Coccidioides posadasii* 2003)
1088. Johnson III, L. H., Naval Medical Research Institute, Bethesda/Silver Springs, Maryland (PDA/1 *Francisella tularensis* 2000, 2002)
1089. Johnson, C., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003)
1090. Johnson, E. A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2000, 2003, 2004, 2005)
1091. Johnson, F., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2004)
1092. Johnson, J., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
1093. Johnson, L. H., Naval Research Laboratory, Center for Bio/Molecular Science and Engineering, Washington, D. C. (PDA/1 *Francisella tularensis* 2000)
1094. Johnson, W. O., University of California Davis, Davis, California (PDA/1 *Brucella melitensis* 2003)
1095. Johnston, R. E., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Influenza A virus 2000, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2003)
1096. Johnston, S. A., University of Texas SW Med Ctr., Dallas, Texas/Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Coccidioides immitis* 2003)
1097. Joiner, K. A., Yale University, New Haven, Connecticut (PDA/1 *Coxiella burnetii* 2000)
1098. Jones, H. A., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2004)

1099. Jones, J. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
1100. Jones, L. A., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2002, 2003)
1101. Jones, M. B., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2003, 2004, 2005)
1102. Jones, M. E., Focus Technologies, Herndon, Virginia (PDA/1 *Bacillus anthracis* 2003)
1103. Jones, S., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
1104. Jones, Y. L., Tuskegee University, Tuskegee, Alabama (PDA/1 Influenza A virus 2004)
1105. Joshi, S. G., University of Rochester Rochester, New York (PDA/1 *Rickettsia rickettsii* 2003, 2004, PDA/1 *Yersinia pestis* 2004)
1106. Kachman, M. T., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
1107. Kachur, S. M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
1108. Kagan, E., Uniformed Services University of the Health Sciences, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2003)
1109. Kajava, A. V., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2001)
1110. Kallstrom, G. H., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, 2005)
1111. Kalnin, K. V., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1112. Kalns, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1113. Kalns, J., Veridian, Inc., San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000)
1114. Kamberi, P., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2003)
1115. Kamper, S. M., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2001)
1116. Kand, M. L., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Yersinia pestis* 2004)
1117. Kandil, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2001)
1118. Kanesa-Thasan, N., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2000)
1119. Kang, W., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003, 2004)
1120. Kanu, J., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)

1121. Kapatral, V., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1122. Kapczynski, D. R., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Newcastle disease virus 2003, 2004, 2005)
1123. Kaplan, A. M., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004, 2005)
1124. Kaplan, G., Rockefeller University, New York, New York (PDA/1 *Coxiella burnetii* 2000)
1125. Kaplan, R. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
1126. Kapur, V., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2005)
1127. Karasek, C. E., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2004)
1128. Karginov, V. A., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2004)
1129. Karin, M., University of California San Diego, La Jolla, California (PDA/1 *Bacillus anthracis* 2004)
1130. Karlowsky, J. A., Focus Technologies, Herndon, Virginia (PDA/1 *Bacillus anthracis* 2003)
1131. Karns, J. S., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Bacillus anthracis* 2003)
1132. Karp, P. D., SRI International, Menlo Park, California (PDA/1 *Francisella tularensis* 2005)
1133. Kash, J. C., University of Washington, Seattle, Washington (EDA/1 “1918 Influenza virus” 2004)
1134. Kaslow, D., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1135. Kasschau, Kristin D., Oregon State University, Corvallis, Oregon (EDA/4 Plum pox virus 2002)
1136. Katz, J. M., National Veterinary Services Laboratories, U.S. Department of Agriculture, Animal and Health Inspection Services, Ames, Iowa/Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Burkholderia mallei* 2000, PDA/1 Influenza A virus 2000, 2001, 2003, 2005)
1137. Katze, M. G., University of Washington, Seattle, Washington (EDA/1 “1918 Influenza virus” 2004)
1138. Kaufman, R. J., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2004)
1139. Kawaoka, Y., University of Wisconsin, Madison, Wisconsin (EDA/1 “1918 Influenza virus” 2004, EDA/2 Lassa virus 2003, 2004, EDA/2 Zaire ebolavirus 2002, 2003, 2004, MDA/1 Newcastle disease virus 2002, PDA/1 Influenza A virus 2005)
1140. Kawula, T. H., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (EDA/5 *Francisella tularensis* 2004)

1141. Kaya, Y. H., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000)
1142. Kearney, B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2003)
1143. Kearney, J., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2001, 2003)
1144. Kefauver, D., Utah State University, Logan, Utah/ United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/5 Camelpox virus 2002, EDA/5 Monkeypox virus 2002, MDA/4/5 Cowpox virus 2000, 2002)
1145. Kegelmeyer, L. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1146. Keim, P., Northern Arizona University, Flagstaff, Arizona/Translational Genomics Research Institute Phoenix, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2000, 2001, 2002, 2003, 2004, 2005, PDA/1 *Francisella tularensis* 2001, 2004, PDA/1 *Yersinia pestis* 2000, 2001, 2004, 2005)
1147. Kell, W. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Eastern equine encephalitis virus 2005, PDA/1 Venezuelan equine encephalitis virus 2001)
1148. Kellner, E. M., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides posadasii* 2005)
1149. Kellum, M. E., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1150. Kellum, M. J., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2002)
1151. Kelly, J. J., Argonne National Laboratory, Argonne, Illinois/Loyola University Chicago, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2004)
1152. Kemp, J. D., New Mexico State University, Las Cruces, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1153. Kenefic, L. J., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2005)
1154. Kennedy, M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1155. Kenney, R. T., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
1156. Kenny, T. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003)
1157. Kerschen, E. J., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004, 2005)
1158. Kerst, A., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
1159. Kesari, K., University of Medicine and Dentistry of New Jersey, Piscataway, New Jersey (PDA/1 Newcastle disease virus 2002)
1160. Keys, C., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2001, 2002)

1161. Khan, A. S., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
1162. Khan, M. I., University of Connecticut, Storrs, Connecticut (PDA/1 Newcastle disease virus 2002)
1163. Khan, S. A., University of Pittsburgh, Pittsburgh, Pennsylvania (PDA/1 *Bacillus anthracis* 2003, 2004)
1164. Khouri, H. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
1165. Khuong, N. Y., California Department of Health Services, Richmond, California (PDA/1 *Brucella melitensis* 2004)
1166. Kieffer, T. L., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2002, 2003)
1167. Kiel, J. L., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000)
1168. Kiel, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1169. Kile, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1170. Kim, H., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1171. Kim, H.-S., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2004)
1172. Kim, J., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
1173. Kim, J.-A, Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
1174. Kim, O., Washington State University, Pullman (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
1175. Kinde, H., University of California Davis, Davis, California (PDA/1 Newcastle disease virus 2004)
1176. Kindzelskii, A. L., Wayne State University, Detroit, Michigan (EDA/2 Zaire ebolavirus 2000)
1177. King, D. J., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2003, PDA/1 Newcastle disease virus 2000, 2001, 2002, 2003, 2004, 2005)
1178. King, D., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
1179. King, K. D., Naval Research Laboratory, Center for Bio/Molecular Science and Engineering, Washington, D. C. (PDA/1 *Francisella tularensis* 2000)
1180. Kinnes, G. M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1181. Kinney, N., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia/Merial-Select, Inc., Gainesville, Georgia (PDA/1 Influenza A virus 2000)

1182. Kinney, R. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Venezuelan equine encephalitis virus 2000)
1183. Kirillina, O., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004)
1184. Kirkland, T. N., University of California, San Diego, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2005)
1185. Kirma, N., Georgia State University, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2004)
1186. Kiss, K., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2002, 2004)
1187. Kissner, T. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2004)
1188. Kivovich, V., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1189. Klei, T. R., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
1190. Klein, T. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000, 2004)
1191. Klemt, R. M., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003)
1192. Kleven, S. H., University of Georgia, Athens, Georgia (MDA/4/5 *Mycoplasma synoviae* 2001)
1193. Klevytska, A. M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2000, PDA/1 *Yersinia pestis* 2000, 2001)
1194. Klichko, V. I., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2003)
1195. Klimov, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
1196. Klimstra, W. B., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000)
1197. Klinman, D. M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
1198. Klose, K. E., University of Texas San Antonio, San Antonio, Texas (EDA/5 *Francisella tularensis* 2003, PDA/1 *Francisella tularensis* 2004)
1199. Klotz, F., Advanced Biosystems Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2004)
1200. Kluger, Y., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
1201. Klugman, K. P., Emory University, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Yersinia pestis* 2003)
1202. Klusaritz, B., IT Corporation, Washington, D.C. (PDA/1 *Bacillus anthracis* 2002)
1203. Knight, J. C., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2000)

1204. Knott, T., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000)
1205. Knudson, G. B., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2001, PDA/1 *Bacillus anthracis* 2001, 2002)
1206. Ko, J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2000, 2002)
1207. Kobasa, D. L., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000)
1208. Kobasa, D., University of Wisconsin, Madison, Wisconsin (EDA/1 "1918 Influenza virus" 2004)
1209. Kobayashi, S. D., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
1210. Kochel, T., Naval Medical Research Center Detachment, NAMRID, Peru (PDA/1 Venezuelan equine encephalitis virus 2004)
1211. Kodihalli, S., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000)
1212. Koehler, T. M., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2000, 2002, 2003, 2004, 2005)
1213. Koenig, G., Roche Molecular Systems, Alameda, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
1214. Kogut, M., United States Department of Agriculture, Agricultural Research Service, College Station, Texas (PDA/1 Newcastle disease virus 2002)
1215. Kolonay, J. F., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1216. Kolsto, A.-B. George Washington University, Washington D. C. (PDA/1 *Bacillus anthracis* 2003)
1217. Komai, M., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1218. Kommers, G. D., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia/University of Georgia, Athens, Georgia (PDA/1 Newcastle disease virus 2001, 2002, 2003)
1219. Kondig, J. P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2001, 2004)
1220. Konet, D. S., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000)
1221. Koo, H.-M., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001)
1222. Koochekpour, S., National Cancer Institute, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2001)
1223. Koopman, R. P., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Bacillus anthracis* 2003)

1224. Koppisch, A. T., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
1225. Korch Jr., G. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002)
1226. Korff, E., University of Arizona, Tucson, Arizona (PDA/1 *Bacillus anthracis* 2003)
1227. Kosoy, M. Y., Centers for Disease Control and Prevention, Atlanta, Georgia/Ft. Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
1228. Koster, M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2001, 2003)
1229. Kousoulas, K. G., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Bacillus anthracis* 2003)
1230. Kovach, M. E., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
1231. Kozel, T. R., University of Nevada School of Medicine, Reno, Nevada (PDA/1 *Bacillus anthracis* 2004)
1232. Krak, S. J., Battelle, Columbus, Ohio (PDA/1 *Francisella tularensis* 2000)
1233. Kramer, E., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2003, 2005)
1234. Kramer, F. R., Public Health Research Institute, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
1235. Krauss, S. L., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000, 2001, 2003, 2005)
1236. Kraycer, J. A., University of Scranton, Scranton, Pennsylvania (PDA/1 *Brucella melitensis* 2002)
1237. Kreeger, T. J., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2000, 2002)
1238. Kreisberg, J. F., University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2001)
1239. Krishnamurthy, S., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2001, 2003, 2004)
1240. Krug, P., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
1241. Ksiazek, T. G., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Guanarito virus 2000, EDA/2 Lassa virus 2000, EDA/2 Reston ebolavirus 2001, EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2003, PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002, 2003, PDA/1 Rift Valley fever virus 2002, 2003)
1242. Kubler-Kielb, J., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1243. Kuehne, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2001)

1244. Kulesh, D. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, PDA/1 *Bacillus anthracis* 2004, PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2003)
1245. Kumar, M. C., University of Georgia, Athens, Georgia (MDA/4/5 *Mycoplasma synoviae* 2001)
1246. Kunz, S., Scripps Research Institute, La Jolla, California (EDA/2 Guanarito virus 2002, EDA/2 Lassa virus 2005, EDA/2 Machupo virus 2002, PDA/1 Sabiá virus 2002, PDA/1 Flexal virus 2002)
1247. Kurane, I., University of Massachusetts, Worcester, Massachusetts (PDA/1 Japanese encephalitis virus 2000)
1248. Kurtti, T. J., University of Minnesota, St. Paul, Minnesota (PDA/1 *Rickettsia rickettsii* 2004)
1249. Kuske, C. R., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2002)
1250. Kutish, G. F., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut, Storrs, Connecticut (PDA/1 African swine fever virus 2000, 2001, 2002, 2004, 2005, PDA/1 Camelpox virus 2002, PDA/1 Classical swine fever virus 2005, PDA/1 Goatpox virus 2002, PDA/1 Lumpy skin disease virus 2001, 2003, PDA/1 Sheeppox virus 2002)
1251. Kuziel, W. A., University of Texas, Austin, Texas (PDA/1 *Yersinia pestis* 2004)
1252. Kvikstad, E., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1253. Kyrpides, N., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1254. Laassri, Majid, Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
1255. Labruna, M. B., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia rickettsii* 2005)
1256. Lackemeyer, M. G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2005)
1257. Lai, E.-M., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
1258. Laker, M. T., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2004, PDA/1 Camelpox virus 2004, PDA/1 Monkeypox virus 2004)
1259. Laker, M., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1260. Lator, P., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1261. Lam, K. M., University of California Davis, Davis, California (PDA/1 Newcastle disease virus 2003)
1262. Lambert, A. J., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2003)
1263. Lambert, A., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)

1264. Lamerdin, J., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1265. Lamers, C., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1266. Lamonica, J. M., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2004)
1267. Lamont, S. J., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
1268. Lanciotti, R. S., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2003)
1269. Land, M. L. Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Yersinia pestis* 2004)
1270. Landers, J. P., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
1271. Lane, D., National Cancer Institute, Frederick, Maryland (EDA/2 Zaire ebolavirus 2003)
1272. Langlois, R. G., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004, , MDA/4/5 *Yersinia pestis* 2003)
1273. Larimer, F. W., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Yersinia pestis* 2004)
1274. LaRocco, M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2004, 2005)
1275. Larsen, N., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1276. Larsen, T., National Cancer Institute, Frederick, Maryland (EDA/2 Zaire ebolavirus 2003)
1277. Latifi, T., Washington University, St. Louis, Missouri (PDA/1 *Yersinia pestis* 2005)
1278. Lauriano, C. M., University of Texas San Antonio, San Antonio, Texas (EDA/5 *Francisella tularensis* 2003, PDA/1 *Francisella tularensis* 2004)
1279. Lauw, F. N., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Coxiella burnetii* 2004)
1280. Lavrik, N. V., Oak Ridge National Laboratory, Oak Ridge, Tennessee (PDA/1 *Bacillus anthracis* 2003)
1281. Lawlor, K. A., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Clostridium botulinum* 2000)
1282. Lawson, J., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
1283. Lawyer, P. G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Rift Valley fever virus 2000)
1284. Layton, M., Department of Health, New York City, New York (PDA/1 *Bacillus anthracis* 2003)

1285. Lazo, A., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
1286. Leach, J. E., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)
1287. Leadem, R. R., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
1288. Lebrilla, C. B., University of California, Davis, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
1289. LeBron, C. I., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
1290. Leclerc, E., Scripps Research Institute, La Jolla, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
1291. Ledney, G. D., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)
1292. Ledoux, D. R., University of Missouri, Columbia, Missouri (PDA/1 Newcastle disease virus 2000)
1293. LeDuc, J. W., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2004, MDA/4/5 Variola virus 2004)
1294. Lee, B. University of California Los Angeles, Los Angeles, California (EDA/2 Nipah virus 2004, 2005, EDA/3 Nipah virus 2004, 2005, PDA/1 *Francisella tularensis* 2003)
1295. Lee, C.-W., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2004)
1296. Lee, G. M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1297. Lee, H. H., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
1298. Lee, I. K., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
1299. Lee, J. S., Uniformed Services University of the Health Sciences, Bethesda, Maryland/ United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 *Bacillus anthracis* 2003, PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2000, 2003, 2004)
1300. Lee, K. H., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)
1301. Lee, K. N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Rickettsia rickettsii* 2003)
1302. Lee, K., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
1303. Lee, L., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 Newcastle disease virus 2005)
1304. Lee, R. E., University of Tennessee, Memphis, Tennessee (PDA/1 *Bacillus anthracis* 2004)

1305. Lee, W. F., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Sudan ebolavirus 2004)
1306. Leef, M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1307. Legg, H., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1308. Legname, G., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
1309. Legutki, B., Naval Medical Research Center, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2005)
1310. Legutki, J., Ohio State University, Columbus, Ohio (PDA/1 *Bacillus anthracis* 2004)
1311. Lehmann, P. F., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2001)
1312. Leighton, T. J., Oakland Research Institute, Oakland, California (PDA/1 *Bacillus anthracis* 2004)
1313. Leonard, B., Cornell University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
1314. Leppla, S. H., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2000, 2001, 2002, 2003, 2004)
1315. Letchworth, Geoffrey J., United States Department of Agriculture, Agricultural Research Service, Laramie, Wyoming (PDA/1 Alcelaphine herpesvirus 1,2 2001)
1316. Leung, P. S. C., University of California, Davis, California (PDA/1 Japanese encephalitis virus 2001)
1317. Leung, W. K., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
1318. Levett, P. N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
1319. LeVier, K., Massachusetts Institute of Technology, Cambridge, Massachusetts (PDA/1 *Brucella melitensis* 2000)
1320. Levy, L., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
1321. Levy, L., United States Department of Agriculture, Animal Plant Health Inspection Service, Plant Protection and Quarantine, Beltsville Agricultural Research Center, Beltsville, Maryland (PDA/1 Plum pox virus 2001)
1322. Lewandowski, A., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2004)
1323. Lewis, G. S., US Sheep Experiment Station, United States Department of Agriculture, Agricultural Research Service, Dubois, ID, (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
1324. Lewis, T., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2000)

1325. Li, Hong, United States Department of Agriculture, Agricultural Research Service, Pullman, Washington (PDA/1 Alcelaphine herpesvirus 1,2 2000, 2001, 2002, 2003, MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
1326. Li, J., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
1327. Li, K., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2001)
1328. Li, L., Center for Biodefense and Emerging Infectious Diseases and Sealy Center for Vaccine Development, University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2003, 2004, PDA/1 Japanese encephalitis virus 2004)
1329. Li, L., Functional Genetics, Inc., Rockville, Maryland (EDA/2 Zaire ebolavirus 2003)
1330. Li, R.-K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coccidioides immitis* 2000)
1331. Li, S., Allergan Inc., Irvine, California (PDA/1 *Clostridium botulinum* 2003)
1332. Li, Y. C., University of Missouri, Columbia, Missouri (PDA/1 Newcastle disease virus 2000)
1333. Liang, L.-T., Naval Medical Research Institute, Bethesda, Maryland (PDA/1 *Francisella tularensis* 2000)
1334. Liang, X., Texas A&M University, Houston, Texas/University of Scranton, Scranton, Pennsylvania/Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001, 2003, 2004)
1335. Liang, Z., Centers for Disease Control and Prevention, Atlanta, Georgia/University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003)
1336. Licata, J. M., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
1337. Lichtensteiger, C. A., University of Illinois at Urbana-Champaign, Urbana, Illinois (PDA/1 *Yersinia pestis* 2002)
1338. Ligler, F. S., Naval Research Laboratory, Center for Bio, Washington, D. C. (PDA/1 *Bacillus anthracis* 2002)
1339. Ligon, J. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2005)
1340. Lim, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1341. Lim, D. V., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2004)
1342. Lim, Y. H., University of Georgia, Athens, Georgia (PDA/1 *Clostridium botulinum* 2003)
1343. Lin, D., Center for Biodefense and Emerging Infectious Diseases and Sealy Center for Vaccine Development, University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2003)
1344. Lin, J., Novozymes Biotech Inc., Davis, California (PDA/1 *Bacillus anthracis* 2003)
1345. Lin, W.-J., Allergan Inc., Irvine, California (PDA/1 *Clostridium botulinum* 2003)

1346. Lin, Y.-L., Indiana University, Indianapolis, Indiana (PDA/1 Japanese encephalitis virus 2002)
1347. Linares, J. A., Texas Veterinary Medical Diagnostic Laboratory, Gonzalez, Texas (PDA/1 Influenza A virus 2004)
1348. Lind, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2005, PDA/1 Venezuelan equine encephalitis virus 2001)
1349. Lindler, L. E., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Brucella melitensis* 2001, PDA/1 *Francisella tularensis* 2001, 2005, PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004)
1350. Lindsey, D., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2004)
1351. Lindstrom, N. M., University of Wyoming, Laramie, Wyoming (PDA/1 *Coxiella burnetii* 2002)
1352. Liner, A., Ohio State University, Columbus, Ohio (PDA/1 *Bacillus anthracis* 2004)
1353. Lingerfelt, B. M., George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2002)
1354. Linkenhiker, J. R., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
1355. Linscott, M. K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2001, 2002)
1356. Lipatov, A. S., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2002, 2005)
1357. Lipscomb, M. F., University of New Mexico, Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1358. Lisinski, T. J., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2003)
1359. Liss, P., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1360. Liszka, V., United Cancer Research Institute, Alexandria, Virginia (PDA/1 Newcastle disease virus 2004)
1361. Little, S. F., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001, PDA/1 *Bacillus anthracis* 2002, 2004)
1362. Liu, F., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
1363. Liu, H., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1364. Liu, H., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2004)
1365. Liu, H., Scripps Research Institute, La Jolla, California (PDA/1 *Bacillus anthracis* 2004)

1366. Liu, M., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003)
1367. Liu, P., College of Pharmacy, The University of Georgia, Athens, GA (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
1368. Liu, T.-Y., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1369. Liu, W.-T., Northwestern University, Evanston, Illinois (PDA/1 *Bacillus anthracis* 2001)
1370. Liu, Y., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Francisella tularensis* 2005)
1371. Lo, C.-Y., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 Influenza A virus 2004)
1372. Locke, D. P., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Newcastle disease virus 2002)
1373. Lockwood, N. A., University of Minnesota, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2004)
1374. Loebenberg, D., Schering-Plough Research Institute, Kenilworth, New Jersey (PDA/1 *Coccidioides immitis* 2002)
1375. Lohman, K. L., Brooks Air Force Base, San Antonio, Texas (PDA/1 Influenza A virus 2002, 2003, PDA/1 *Yersinia pestis* 2003)
1376. Long, D., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2005)
1377. Long, G. W., Tetracore Inc, Gaithersburg, Maryland (PDA/1 Foot and mouth disease virus 2002)
1378. Loparev, V. N., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2000, 2001, PDA/1 Camelpox virus 2001, PDA/1 Monkeypox virus 2001)
1379. Lorence, R. M., Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois (PDA/1 Newcastle disease virus 2001)
1380. Los, T., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1381. Lott, B. D., Mississippi State University, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
1382. Lovchik, J. A., University of New Mexico Health Sciences Center, Albuquerque, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1383. Loveless, B., Geo-Centers, Newtown, Massachusetts (PDA/1 *Bacillus anthracis* 2004)
1384. Lowell, J. L., Centers for Disease Control and Prevention, Atlanta, Georgia/Ft. Collins, Colorado (PDA/1 *Yersinia pestis* 2003, 2005)
1385. Lu, M., Cornell University, New York, New York (EDA/2 Junin virus 2004)
1386. Lu, S., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
1387. Lu, X., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2000, 2003)

1388. Lu, Z., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2000, 2001, 2004, 2005, PDA/1, Camelpox virus 2002, PDA/1 Classical swine fever virus 2005, PDA/1 Foot and mouth disease virus 2005, PDA/1 Goatpox virus 2002, PDA/1 Lumpy skin disease virus 2001, 2003, PDA/1 Sheeppox virus 2002)
1389. Lubroth, J., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2001, 2002, 2003)
1390. Lucas, A. H., Oakland Research Institute, Oakland, California (PDA/1 *Bacillus anthracis* 2004)
1391. Luchansky, J. B., United States Department of Agriculture, Agricultural Research Service, Wyndmoor, Pennsylvania (PDA/1 *Bacillus anthracis* 2005)
1392. Ludwig, G. V., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland/Naval Medical Research Center Detachment, NAMRID, Peru (EDA/2 Zaire ebolavirus 2000, MDA/4/5 Venezuelan equine encephalitis virus 2001, PDA/1 Venezuelan equine encephalitis virus 2001, 2004)
1393. Luebke, K., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
1394. Lukashevich, I. S., University of Maryland, Baltimore, Maryland (EDA/2 Lassa virus 2002, 2004, 2005, EDA/2 Zaire ebolavirus 2002)
1395. Luna, V. A., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
1396. Luo, J.-L., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)
1397. Luther, M., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2001)
1398. Lykidis, A., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1399. Lyons, C. R., University of New Mexico Health Sciences Center, Albuquerque, New Mexico/Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004, 2005)
1400. Lysov, Y. P., Argonne National Laboratory, Argonne, Illinois (PDA/1 *Bacillus anthracis* 2004)
1401. Lytle, M., Oklahoma State Department of Health, Oklahoma City, Oklahoma (PDA/1 *Francisella tularensis* 2001)
1402. Ma, M. C., Gladstone Institute of Virology and Immunology San Francisco, California (EDA/2 Lake Victoria marburgvirus 2000, EDA/2 Zaire ebolavirus 2000)
1403. Maalouf, G., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
1404. Mabery, S. L., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1405. MacAfee, R., Potomac Hospital, Woodbridge, Virginia (PDA/1 *Bacillus anthracis* 2005)

1406. Macaluso, K. R., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003, 2005)
1407. MacArthur, GeneWorks, Inc., Ann Arbor, Michigan, USA (PDA/1 *Bacillus anthracis* 2004)
1408. MacDonald, G. H., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2000)
1409. Mackie, R. S., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
1410. MacLachlan, N. J., University of California-Davis, Davis, California (PDA/1 Bluetongue virus 2000)
1411. Maddock, J. R., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
1412. Madupu, R., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
1413. Maeda, S., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)
1414. Magee, D. M., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002, 2003, PDA/1 *Coccidioides posadasii* 2003)
1415. Mahamoud, Y., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
1416. Mahan, S. M., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2000, 2002)
1417. Mahanty, Siddhartha, Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2003, EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2001, 2003, 2004, 2005)
1418. Maheshwari, R. K., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
1419. Mahy, B. W. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2000)
1420. Maier, T. M., Medical College of Wisconsin, Milwaukee, Wisconsin (PDA/1 *Francisella tularensis* 2004)
1421. Majadly, F., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1422. Majerus, T. C., Abbott Laboratories, Abbott Park, Illinois (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
1423. Majid, M., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2003)
1424. Majumder, M., St. Louis University, St. Louis, Missouri (PDA/1 Newcastle disease virus 2003)
1425. Makarewicz, A. J., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)

1426. Makarova, K. S., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1427. Makino, S., Centers for Disease Control and Prevention, Atlanta, Georgia/University of Texas Medical Branch, Galveston, Texas (PDA/1 Rift Valley fever virus 2005)
1428. Maksymowych, A. B., Jefferson Medical College, Philadelphia, Pennsylvania (PDA/1 *Clostridium botulinum* 2004)
1429. Maland, M., Southern Research Institute, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2004)
1430. Malfatti, S., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Francisella tularensis* 2005)
1431. Malik, Y. S., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2004)
1432. Mallavia, L. P., Washington State University, Pullman, Washington (PDA/1 *Coxiella burnetii* 2000)
1433. Mandel, M. A., University of Arizona, Tucson, Arizona (EDA/5 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2005)
1434. Manes, Nina, Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
1435. Mani, H., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
1436. Mankin, A., University of Illinois at Chicago (MDA/7 *Bacillus subtilis*)
1437. Mann, J. M., University of Medicine and Dentistry of New Jersey, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
1438. Manthey, E., Critical Response Engineering, Inc., Alexandria, Virginia (PDA/1 *Bacillus anthracis* 2003)
1439. Mar, K., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
1440. Maranta, M., Novozymes Biotech Inc., Davis, California (PDA/1 *Bacillus anthracis* 2003)
1441. Maraqa, A. D., Iowa State University, Ames, Iowa (PDA/1 Newcastle disease virus 2000)
1442. Marcus, P. I., University of Connecticut, Storrs, Connecticut (PDA/1 Newcastle disease virus 2001)
1443. Marcy, J. E., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Clostridium botulinum* 2000)
1444. Marder, V. J., University of Rochester, Rochester, New York (PDA/1 *Rickettsia rickettsii* 2000)
1445. Mariner, J., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2000)
1446. Marks, D. H., Aventis Pasteur USA, Swiftwater, Pennsylvania (PDA/1 Japanese encephalitis virus 2000)
1447. Marmorato, A., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)

1448. Marras, S. A. E., Public Health Research Institute, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
1449. Marriott, K. A., University of Texas Medical Branch, Galveston, Texas (MDA/1 Pichinde virus 2001)
1450. Marsh, W., MetriGenix, Inc., Gaithersburg, Maryland (PDA/1 Influenza A virus 2004)
1451. Marston, E. L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
1452. Marthandan, N., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
1453. Martin, B., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
1454. Martin, D. A., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2003)
1455. Martinez, M. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2004, MDA/4/5 Cowpox virus 2000, 2002, MDA/4/5 Variola virus 2004, PDA/1 *Yersinia pestis* 2002)
1456. Martinez-Sobrido, L., Mount Sinai School of Medicine, New York, New York (EDA/2 Zaire ebolavirus 2003)
1457. Marty, A. M., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
1458. Maruyama, T., Scripps Research Institute, La Jolla, California (EDA/2 Zaire ebolavirus 2002)
1459. Marvey, N. G., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
1460. Maslanka, S., United States Food and Drug Administration, Atlanta, Georgia (PDA/1 *Clostridium botulinum* 2003)
1461. Mason, P. W., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000, 2001, 2002, 2003, 2004, PDA/1 Japanese encephalitis virus 2000, 2001, 2003)
1462. Masquelier, D., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
1463. Massung, R. F., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2000, 2001, PDA/1 Camelpox virus 2001, PDA/1 Monkeypox virus 2001, PDA/1 *Rickettsia rickettsii* 2003)
1464. Maswadeh, W. M., United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2004)
1465. Mateczun, A., Naval Medical Research Center, Silver Spring, Maryland (MDA/4/5 *Bacillus anthracis* 2004, PDA/1 *Bacillus anthracis* 2004)
1466. Mathews, R. H., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
1467. Mathison, A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2003)

1468. Matson, J. S., University of North Dakota, Grand Forks, North Dakota (PDA/1 *Yersinia pestis* 2001, 2002)
1469. Matthew, A., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
1470. Matyas, G. R., Walter Reed Army Institute of Research, Silver Spring, Maryland (EDA/2 Zaire ebolavirus 2002)
1471. Mau, B., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1472. Mayer, L. W., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1473. Mayfield, J., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
1474. Mayhew, G. F., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1475. Mayo, K. H., University of Minnesota, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2004)
1476. Mayr, G. A., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2001, 2002, 2003)
1477. Mazur, M., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1478. McAllister, S. K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1479. McAvin, J. C., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2003)
1480. McBride, J. W., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia rickettsii* 2005)
1481. McBride, M. T., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)
1482. McClanahan, R., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Francisella tularensis* 2003)
1483. McConathy, M. A., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Yersinia pestis* 2003)
1484. McCormick, J. B., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
1485. McCready, Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2001)
1486. McCreary, R. P., Litton/TASC, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1487. McCullers, J. A., St. Jude Children's Research Hospital, Memphis, Tennessee (MDA/1 Influenza B virus 2005)
1488. McCutchen-Maloney, S. L., CIPHERGEN Biosystems, Fremont, California/Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2001, 2004, 2005)

1489. McDonald, G. A., University of South Florida, Tampa, Florida/University of Missouri–Columbia, Columbia, Missouri/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Rickettsia rickettsii* 2001)
1490. McDonough, K. A., Wadsworth Center, Albany, New York (PDA/1 *Yersinia pestis* 2002)
1491. McElroy, A. K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Andes virus 2002, PDA/1 Monkeypox virus 2003, PDA/1 Rift Valley fever virus 2005)
1492. McElwee, J., Cornell University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
1493. McFalls, J. M., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Crimean-Congo hemorrhagic fever virus 2005)
1494. McGhee, J. R., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)
1495. McGinnes, L. W., University of Massachusetts, Worcester, Massachusetts (PDA/1 Newcastle disease virus 2002, 2003)
1496. McGinnis, M. R., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Coccidioides immitis* 2000)
1497. McGrath, S. Yale University, New Haven, Connecticut (PDA/1 *Coxiella burnetii* 2003)
1498. McGregor, M., University of Wisconsin, Madison, Wisconsin (EDA/2 Zaire ebolavirus 2003)
1499. McGuire, T. C., United States Department of Agriculture, Agricultural Research Service, Pathology, Pullman/Washington State University, Pullman, Washington (PDA/1 Alcelaphine herpesvirus 1,2 2001, PDA/1 *Ehrlichia ruminantium* 2000, 2001, PDA/1 *Mycoplasma mycoides mycoides* 2000)
1500. McKown, R. L., James Madison University, Harrisonburg, Virginia (PDA/1 *Yersinia pestis* 2005)
1501. McLaughlin, M. L., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
1502. McLendon, M. K., University of Iowa, Iowa City, Iowa (PDA/1 *Francisella tularensis* 2004)
1503. McMullan, L. K., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000)
1504. McMurray, D. N., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
1505. Mcrae, Michael, Emory Vaccine Research Center and Department of Pathology, Emory University, Atlanta, Georgia (EDA/2 Lassa virus 2003, EDA/2 Zaire ebolavirus 2003)
1506. Mead, D. J. National Institutes of Health, Hamilton, Montana (PDA/1 *Coxiella burnetii* 2004)
1507. Mecham, J. O., United States Department of Agriculture, Arthropod-borne Animal Diseases Research Laboratory, Laramie, Wyoming (PDA/1 Bluetongue virus 2001)
1508. Mecsas, J., Stanford University, Stanford, California (PDA/1 *Yersinia pestis* 2004)

1509. Medina, G., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2004)
1510. Mehrotra, Y., North Carolina State University, Raleigh, North Carolina (PDA/1 Newcastle disease virus 2000)
1511. Meierovics, A. I., Center for Biologics Evaluation and Research, Food and Drug Administration, Rockville, Maryland (PDA/1 *Francisella tularensis* 2004)
1512. Meinersmann, R. J., United States Department of Agriculture, Agricultural Research Service, Athens, Georgia (PDA/1 Newcastle disease virus 2000)
1513. Meissner, J. D., United States Department of Agriculture, Arthropod-borne Animal Diseases Research Laboratory, Laramie, Wyoming (PDA/1 Bluetongue virus 2001)
1514. Mellquist-Riemenschneider, J. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland/Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 *Bacillus anthracis* 2004, PDA/1 Venezuelan equine encephalitis virus 2003)
1515. Meltz, M. L., Beam Tech, Inc., San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1516. Mencher, J. S., United States Geological Survey, Madison, Wisconsin/Wildlife Science Group, University of Washington, Seattle, Washington (PDA/1 *Yersinia pestis* 2004)
1517. Mendelson, I., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002, 2004)
1518. Mendoza, S., University of Minnesota, College of Veterinary Medicine (MDA/4/5 Classical swine fever virus 2001)
1519. Mense, M. G., Walter Reed Army Institute of Research, Forest Glen, Maryland (MDA/4/5 *Brucella melitensis* 2004, PDA/1 *Brucella melitensis* 2000, 2001, PDA/1 *Yersinia pestis* 2001)
1520. Mere, R., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1521. Mericko, P. A., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2003)
1522. Merkel, T. J., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1523. Mett, V., Fraunhofer USA Center for Molecular Biotechnology, Newark, Delaware (PDA/1 *Bacillus anthracis* 2005)
1524. Metz, T., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)
1525. Metzger, D. W., Albany Medical College, Albany, New York (PDA/1 *Francisella tularensis* 2005)
1526. Meyer, R. F., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 Monkeypox virus 2002)
1527. Mezencio, J. M. S., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000)
1528. Miksza, J. A., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)

1529. Mikulasova, A., Mount Sinai School of Medicine, New York, New York (EDA/1 “1918 Influenza virus” 2002, EDA/2 Zaire ebolavirus 2003)
1530. Milanovich, F. P., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
1531. Millar, D., Brigham Young University, Provo, Utah (PDA/1 *Bacillus anthracis* 2003)
1532. Millenbaugh, N., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1533. Miller, A. K., United States Public Health Service Center, Denver, Colorado (MDA/4/5 *Bacillus anthracis* 2002)
1534. Miller, B. R., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Japanese encephalitis virus 2000, PDA/1 Rift Valley fever virus 2002)
1535. Miller, D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Bacillus anthracis* 2003)
1536. Miller, J. D., West Virginia University, Morgantown, West Virginia (PDA/1 *Coxiella burnetii* 2002, 2004)
1537. Miller, J., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2003)
1538. Miller, L. D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
1539. Miller, M. W., Wildlife Research Center, Fort Collins, Colorado (PDA/1 *Brucella melitensis* 2000)
1540. Miller, S. I., University of Washington, Seattle, Washington (PDA/1 *Yersinia pestis* 2004)
1541. Mills, J. N., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Guanarito virus 2000)
1542. Mills, R., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
1543. Milton, D. K., Harvard School of Public Health, Boston, Massachusetts (MDA/4/5 Human Rhinovirus 2003)
1544. Minter, J. M., US Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Burkholderia mallei* 2005)
1545. Mirbod, F., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2002)
1546. Mirzabekov, A. D., Argonne National Laboratory, Argonne, Illinois (PDA/1 *Bacillus anthracis* 2001)
1547. Mishin, V. P., University of Virginia, Charlottesville, Virginia (PDA/1 Japanese encephalitis virus 2001)
1548. Mishra, B., New York University, New York, New York (PDA/1 *Yersinia pestis* 2002)
1549. Mitchell, C. J., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2001)
1550. Mitra, P., University of Pittsburgh, Pittsburgh, Pennsylvania (PDA/1 *Bacillus anthracis* 2004)

1551. Modlin, J. F., Dartmouth Medical School, Lebanon, New Hampshire (PDA/1 Human enterovirus B 2000)
1552. Mogridge, J., Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2000)
1553. Mohamadzadeh, M., Tulane University, New Orleans, Louisiana (EDA/2 Lake Victoria marburgvirus 2003, 2004, EDA/2 Zaire ebolavirus 2003, 2004)
1554. Mohamed, N., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
1555. Mohammed, M. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1556. Mohammoud, Y., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1557. Molineux, I. J., University of Texas, Austin, Texas (PDA/1 *Yersinia pestis* 2003)
1558. Monaghan, J., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
1559. Monath, T. P., Orovax Inc./Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000, 2001, 2002, 2004)
1560. Moncayo, A. C., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003, 2004)
1561. Montagna, R. A., Innovative Biotechnologies International, Inc., Grand Island, New York (PDA/1 *Bacillus anthracis* 2004)
1562. Monteneri, J. A., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004, PDA/1 *Yersinia pestis* 2003)
1563. Montgomery, N. K., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Bacillus anthracis* 2004)
1564. Montville, T. J., Rutgers - The State University of New Jersey, New Brunswick, New Jersey (PDA/1 *Clostridium botulinum* 2000, 2002)
1565. Moore, B. D., Clinical Research Management, Frederick, Maryland (EDA/2 Lake Victoria marburgvirus 2004, EDA/2 Zaire ebolavirus 2004)
1566. Moore, D. M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2001)
1567. Moore, P. A., Human Genome Sciences, Inc., Rockville, Maryland (PDA/1 Newcastle disease virus 2001)
1568. Moraes, M. P., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2002, 2003, 2005)
1569. Morales, P. J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000)
1570. Moreland, A. L., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2001)
1571. Morey, R., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
1572. Morgan, C., Naval Medical Research Institute, Bethesda, Maryland (PDA/1 *Francisella tularensis* 2000)

1573. Morken, T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2000)
1574. Morril, J. C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Rift Valley fever virus 2003)
1575. Morris, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
1576. Morrison, A. C., University of California, Davis, California (PDA/1 Venezuelan equine encephalitis virus 2004)
1577. Morrison, T. G., University of Massachusetts, Worcester, Massachusetts (PDA/1 Newcastle disease virus 2002)
1578. Mort, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
1579. Morton, M. M., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
1580. Morzunov, S., University of Nevada at Reno, Reno, Nevada (EDA/2 Crimean-Congo hemorrhagic fever virus 2003, EDA/2 Junin virus 2000)
1581. Moscona, A., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2004)
1582. Mosier, D. M., Scripps Research Institute, La Jolla, California (PDA/1 *Yersinia pestis* 2004)
1583. Moss, B., National Institute of Allergy and Infectious Diseases (NIAID), Bethesda, Maryland (PDA/1 Monkeypox virus 2001, 2002)
1584. Moss, K., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
1585. Mossoba, M. M., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
1586. Motin, V. L., CIPHERGEN Biosystems, Fremont, California/Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2001, 2002, 2004)
1587. Moura, H., Center for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
1588. Mu, D., University of California, San Francisco, California (PDA/1 Foot and mouth disease virus 2004)
1589. Mujer, C., University of Scranton, Scranton, Pennsylvania (PDA/1 *Brucella melitensis* 2002)
1590. Muller-Doblies, U. U., United States Department of Agriculture, Agricultural Research Service, Pathology, Pullman (PDA/1 Alcelaphine herpesvirus 1,2 2001)
1591. Munderloh, U. G., University of Minnesota, St. Paul, Minnesota (PDA/1 *Ehrlichia ruminantium* 2000, PDA/1 *Rickettsia rickettsii* 2004)
1592. Munir, S., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2005)
1593. Munoz-Jordan, J., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2003)
1594. Murga, R., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2005)

1595. Murphy, E. A., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Brucella melitensis* 2001, 2002)
1596. Murphy, G. A., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1597. Murphy, W. J., University of Nevada School of Medicine, Reno, Nevada (PDA/1 *Bacillus anthracis* 2004)
1598. Murray, I. A., University of California, San Francisco, California (PDA/1 *Yersinia pestis* 2004)
1599. Murrell, M., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2004)
1600. Myatt, T. A., Harvard School of Public Health, Boston, Massachusetts (MDA/4/5 Human Rhinovirus 2003)
1601. Myers, T. J., United States Department of Agriculture, Animal and Plant Health Inspection Service, Riverdale, Maryland (PDA/1 Influenza A virus 2002, 2003)
1602. Myers-Morales, T., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2003)
1603. Nabel, E. G., National Institutes of Health, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2000)
1604. Nabel, G. J., University of Michigan, Ann Arbor, Michigan (EDA/2 Zaire ebolavirus 2000)
1605. Nakaya, T., Mount Sinai School of Medicine, New York, New York (PDA/1 Influenza A virus 2003, PDA/1 Newcastle disease virus 2001, 2003, 2004, 2005)
1606. Nakaya, Y., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2001, 2004)
1607. Nalca, A., Southern Research Institute, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2004)
1608. Nanduri, V., Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2004)
1609. Naqvi, A., University of Pittsburgh, Pittsburgh, Pennsylvania (PDA/1 *Bacillus anthracis* 2003, 2004)
1610. Nardone, L., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
1611. Nargi, F. E., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
1612. Nasarabadi, S., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005, PDA/1 *Bacillus anthracis* 2003,)
1613. Nasci, R. S., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2001, 2003)
1614. Navarro, R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
1615. Navjar, L. K., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2001, 2002)

1616. Neff, S., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2000, 2001)
1617. Negley, D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, 2003, 2004, 2005, EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
1618. Neilan, J. G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2000, 2001, 2002, 2004, 2005)
1619. Neill, R., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
1620. Neira, M., Ohio University, Athens, Ohio (PDA/1 Venezuelan equine encephalitis virus 2004)
1621. Nelle, T., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
1622. Nelson, D. O., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1623. Nelson, D., Rockefeller University, New York, New York (PDA/1 *Bacillus anthracis* 2002)
1624. Nelson, K. E., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
1625. Nelson, W. C., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)
1626. Nelson, W., Tetracore Inc., Gaithersburg, Maryland (PDA/1 African swine fever virus 2005, PDA/1 Classical swine fever virus 2003, 2005, PDA/1 Foot and mouth disease virus 2002)
1627. Nestor, K. E., Ohio State University, Wooster, Ohio (PDA/1 Newcastle disease virus 2002)
1628. Neumann, G., University of Wisconsin, Madison, Wisconsin (EDA/2 Zaire ebolavirus 2004)
1629. Newburger, P. E., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
1630. Neyfakh, A. A., University of Illinois, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2005)
1631. Ng, V. H., Drexel University, Philadelphia, Pennsylvania (PDA/1 *Bacillus anthracis* 2004)
1632. Ngotho, R., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
1633. Nguyen, H.-O. B., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2005)
1634. Nguyen, T. L., National Cancer Institute, Frederick, Maryland (Zaire ebolavirus 2005)

1635. Ni, H., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2003)
1636. Nichol, S. T., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000, EDA/2 Crimean-Congo hemorrhagic fever virus 2002, 2004, EDA/2 Omsk hemorrhagic fever virus 2004, EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2003, 2005, PDA/1 Rift Valley fever virus 2002)
1637. Nichols, R., Orovax Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000)
1638. Nicholson, J., National Veterinary Services Laboratories, U.S. Department of Agriculture, Animal and Health Inspection Services, Ames, Iowa (PDA/1 *Burkholderia mallei* 2000)
1639. Nicholson, W. L. University of Arizona, Tucson, Arizona (PDA/1 *Bacillus anthracis* 2003)
1640. Nickerson, A. D., St. Jude Children's Research Hospital, Memphis, Tennessee (MDA/1 Influenza B virus 2005)
1641. Nicolas, M. M., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
1642. Niebuhr, S. E., Iowa State University, Ames, Iowa (PDA/1 *Bacillus anthracis* 2003)
1643. Nielsen, C., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003)
1644. Niermann, W., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1645. Nietfeldt, J., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
1646. Nikolich, M., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2001, 2003)
1647. Nilles, M. L., University of North Dakota, Grand Forks, North Dakota (PDA/1 *Yersinia pestis* 2001, 2002)
1648. Nisbet, D., United States Department of Agriculture, Agricultural Research Service, College Station, Texas (PDA/1 Newcastle disease virus 2002)
1649. Nishimura, S., University of California, San Francisco, California (PDA/1 Foot and mouth disease virus 2004)
1650. Nolan, A., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
1651. Nordhausen, R., University of California, Davis, Davis, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
1652. Nordoff, N., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Coccidioides immitis* 2000)
1653. Norris, P. M., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003, 2004)
1654. Norris, S. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)

1655. Norwood, D. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Sudan ebolavirus 2001, EDA/2 Zaire ebolavirus 2001, 2002, PDA/1 *Bacillus anthracis* 2002, 2003, 2004, PDA/1 *Yersinia pestis* 2002, 2003, 2004)
1656. Novak, J. S., United States Department of Agriculture, Agricultural Research Service, Wyndmoor, Pennsylvania (PDA/1 *Bacillus anthracis* 2005)
1657. Novak, R. T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Brucella melitensis* 2004)
1658. Nunberg, J. H., University of Montana, Missoula, Montana (EDA/2 Junín virus 2004, 2005)
1659. O'Brian, T., Naval Medical Research Institute, Bethesda, Maryland (PDA/1 *Francisella tularensis* 2000, PDA/1 *Francisella tularensis* 2000)
1660. O'Donnell, V., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut at Storrs, Storrs, Connecticut (PDA/1 Foot and mouth disease virus 2001, 2003, 2005)
1661. O'Guinn, M. L., United States Army Center for Health Promotion and Prevention Medicine-Pacific, Camp Zama, Japan/United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Rift Valley fever virus 2000, PDA/1 Venezuelan equine encephalitis virus 2002, 2003, 2004)
1662. O'Hagan, D. T., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2005)
1663. O'Neill, E., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000)
1664. O'Quinn, A. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia pseudomallei* 2001)
1665. O'Rourke, K. I., United States Department Agriculture, Agricultural Research Service, Pullman, Washington (PDA/1 Bovine spongiform encephalopathy prion 2001)
1666. Oaks, J. L., Washington State University, Pullman (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
1667. O'Brien, K., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
1668. Ohagen, A., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
1669. Okinaka, R., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2000, 2002, 2004)
1670. Okjin, K., United States Department of Agriculture, Agricultural Research Service, Pullman, Washington (PDA/1 Alcelaphine herpesvirus 1,2 2003)
1671. Okstad, O. A., George Washington University, Washington D. C. (PDA/1 *Bacillus anthracis* 2003)
1672. Oldstone, M. B. A., Scripps Research Institute, La Jolla, California (EDA/2 Guanarito virus 2002, EDA/2 Lassa virus 2000, 2001, 2002, 2003, 2004, 2005, EDA/2 Machupo virus 2002, PDA/1 Sabiá virus 2002, PDA/1 Flexal virus 2002)

1673. Olmos, S., Albany Medical College, Albany, New York (PDA/1 *Francisella tularensis* 2005)
1674. Olsen, S. C., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003, 2004)
1675. Olson, J., Centers for Disease Control and Prevention, Atlanta, Georgia/Naval Medical Research Center Detachment, NAMRID, Peru (EDA/1 Variola virus 2004, PDA/1 Camelpox virus 2004, PDA/1 Monkeypox virus 2004, PDA/1 Nipah virus 2000, 2001, PDA/1 Venezuelan equine encephalitis virus 2004)
1676. Olson, M. E., University of Nebraska, Omaha, Nebraska (PDA/1 *Francisella tularensis* 2004)
1677. Olson, R. A., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
1678. Orbach, M. J., University of Arizona, Tucson, Arizona (EDA/5 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2005)
1679. Orsborn, K. I., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2002, PDA/1 *Coccidioides posadasii* 2005)
1680. Ortiz, D., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2004)
1681. Osborne, J. C., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Crimean-Congo hemorrhagic fever virus 2004)
1682. Osorio, F. A., Tetracore Inc, Gaithersburg, Maryland (PDA/1 Foot and mouth disease virus 2002)
1683. Osorio, J. E., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003, 2004)
1684. Osorio, M., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
1685. Ospina, M, Center fo Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
1686. O'Toole, D., United States Department of Agriculture, Agricultural Research Service, Pathology, Pullman (PDA/1 Alcelaphine herpesvirus 1,2 2000)
1687. Ott, L. L., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002, 2004)
1688. Otten, G. R., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1689. Overbeek, R., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1690. Owen, A, Stanford University, Stanford, Connecticut (EDA/1 Variola virus 2004)
1691. Ozato, X., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2004)
1692. Pacheco, J. M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut, Storrs, Connecticut (PDA/1 Foot and mouth disease virus 2001, 2003, 2005)
1693. Paddock, C., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Rickettsia rickettsii* 2003)

1694. Padmalayam, I., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Rickettsia rickettsii* 2003)
1695. Paessler, S., University of Texas Medical Branch, Galveston, Texas (PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2003, 2004, 2005)
1696. Pahar, B., University of California-Davis, Davis, California (PDA/1 Rinderpest virus 2002)
1697. Palese, P., Mount Sinai School of Medicine, New York, New York (EDA/1 “1918 Influenza virus” 2001, 2002, 2004, EDA/2 Zaire ebolavirus 2003, PDA/1 Influenza A virus 2003, PDA/1 Newcastle disease virus 2001, 2003, 2004)
1698. Palmer, K., MetriGenix, Inc., Gaithersburg, Maryland (PDA/1 Influenza A virus 2004)
1699. Palmer, M. V., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2002, 2003)
1700. Pammit, M. A., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
1701. Panchal, R. G., National Cancer Institute, Frederick, Maryland (EDA/2 Zaire ebolavirus 2003, 2005, PDA/1 *Bacillus anthracis* 2005)
1702. Panda, A., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2001, 2003, 2004)
1703. Panigrahy, B., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Influenza A virus 2002, PDA/1 Newcastle disease virus 2004)
1704. Pannucci, J., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2002)
1705. Pappagianis, D., University of California Davis, Davis, California (PDA/1 *Coccidioides immitis* 2000, 2002, 2003, PDA/1 *Coccidioides posadasii* 2000)
1706. Paragas, J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Crimean-Congo hemorrhagic fever virus 2004, 2005, EDA/2 Zaire ebolavirus 2003, 2005)
1707. Paronavitana, C. M., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2000, 2004)
1708. Paranjpye, R. N., United States Department of Commerce, Seattle, Washington (PDA/1 *Clostridium botulinum* 2002, 2004)
1709. Pardington, P. E., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1710. Paredes, A., Baylor College of Medicine, Houston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003)
1711. Parent, M., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Brucella melitensis* 2001, 2002)
1712. Park, C., Oakland Research Institute, Oakland, California (PDA/1 *Bacillus anthracis* 2005)
1713. Park, J. M., University of California, San Diego, California (PDA/1 *Bacillus anthracis* 2004)

1714. Park, J.-B., Jefferson Medical College, Philadelphia, Pennsylvania (PDA/1 *Clostridium botulinum* 2004)
1715. Park, M.-S., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2001, 2003, 2004, 2005)
1716. Park, S., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2000)
1717. Parker, J. E., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000, 2002)
1718. Parker, M. D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lassa virus 2001, EDA/2 Zaire ebolavirus 2000, 2001, MDA/4/5 Venezuelan equine encephalitis virus 2005, PDA/1 Eastern equine encephalitis virus 2002, 2005)
1719. Parker, S., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1720. Parren, W. H. I., Scripps Research Institute, La Jolla, California (EDA/2 Zaire ebolavirus 2002)
1721. Parsons, Joseph M., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 Variola virus 2000)
1722. Parthasarathy, N., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2005)
1723. Pasarel, Lester, University of Texas Medical Branch, Galveston, Texas (PDA/1 *Coccidioides immitis* 2000)
1724. Pasnik, D. J., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2003)
1725. Passalacqua, K. D., University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2005)
1726. Patch, J. R., Uniformed Services University, Bethesda, Maryland (PDA/1 Hendra virus 2005, PDA/1 Nipah virus 2005)
1727. Patnayak, D. P., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2004)
1728. Patra, G., University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001, 2002, 2003, 2004, PDA/1 *Brucella melitensis* 2002)
1729. Patrusheva, I., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2002, 2003)
1730. Paul, A. V., State University of New York at Stony Brook, Stony Brook, New York (MDA/6 Poliovirus 2002)
1731. Paul, S., Rockefeller University, New York, New York (PDA/1 *Coxiella burnetii* 2000)
1732. Paulsen, I. T., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Coxiella burnetii* 2003)
1733. Payton, M. E., Oklahoma State University, Stillwater, Oklahoma (PDA/1 Cercopithecine herpesvirus 1 2005)
1734. Peacock, S. J., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)

1735. Pearson, T., Northern Arizona University, Flagstaff, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2004)
1736. Pedersen, D. D., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Venezuelan equine encephalitis virus 2003)
1737. Pedersen, J. C., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Influenza A virus 2002, PDA/1 Newcastle disease virus 2004, 2005)
1738. Pedersen, L., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2004)
1739. Peoples, M. E., Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois (PDA/1 Newcastle disease virus 2001)
1740. Pei, J., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2004)
1741. Peleg, M., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Clostridium botulinum* 2000)
1742. Pelroy, G. A., United States Department of Commerce, Seattle, Washington (PDA/1 *Clostridium botulinum* 2002, 2004)
1743. Peng, T., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2002)
1744. Penrose, K. J., National Cancer Institute Frederick, Maryland (PDA/1 *Yersinia pestis* 2005)
1745. Percival, A., University of Nevada School of Medicine, Reno, Nevada (PDA/1 *Bacillus anthracis* 2004)
1746. Percy-Fine, S., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2002)
1747. Perdue, M. L., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia/United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (EDA/1 "1918 Influenza virus" 2001, PDA/1 *Bacillus anthracis* 2003, PDA/1 Influenza A virus 2000, 2001, 2002, 2003)
1748. Perelygina, L., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2002, 2003)
1749. Peretz, D., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2005)
1750. Perez, D. R., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003, 2004)
1751. Perez, M., Scripps Research Institute, La Jolla, California (EDA/2 Lassa virus 2005)
1752. Perkins, B. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003)
1753. Perkins, J. G., Walter Reed Army Medical Center, Washington, D.C. (EDA/2 Zaire ebolavirus 2004)
1754. Perkins, J., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)

1755. Perkins, L. E. L., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2002)
1756. Perna, N. T., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1757. Perri, S., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1758. Perrill, R., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2002)
1759. Perry, R. D., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004)
1760. Perumaalla, V. S., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
1761. Peruski, A. H., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Francisella tularensis* 2002)
1762. Peruski, L. F., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Francisella tularensis* 2002)
1763. Peters, C. J., Centers for Disease Control and Prevention, Atlanta, Georgia/University of Texas Medical Branch, Galveston, Texas (EDA/2 Lassa virus 2000, EDA/2 Reston ebolavirus 2001, PDA/1 Nipah virus 2000, PDA/1 Rift Valley fever virus 2003, 2005)
1764. Petersen, J. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2003, 2004)
1765. Peterson, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005)
1766. Peterson, J. D., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
1767. Peterson, M. E., United States Department of Commerce, Seattle, Washington (PDA/1 *Clostridium botulinum* 2002, 2004)
1768. Peterson, S. N., Institute for Genomic Research, Rockville, Maryland/George Washington University, Washington, D.C. (PDA/1 *Bacillus anthracis* 2003, 2004)
1769. Petrenko, V. A., Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2004)
1770. Petrovick, M. S., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
1771. Pettigrew, C. A., Procter and Gamble, St. Bernard, Ohio (PDA/1 *Bacillus anthracis* 2004, 2005)
1772. Petty, Howard R., Wayne State University, Detroit, Michigan (EDA/2 Zaire ebolavirus 2000)
1773. Pezzanite, L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
1774. Pfannkoch, C., Institute for Biological Energy Alternatives, Rockville, Maryland (PDA/6 Enterobacteria phage ϕ X174 2003)
1775. Phadke, N. D., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)

1776. Pharr, G. T., Mississippi State University, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005.)
1777. Philipovskiy, A. V., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2005)
1778. Philips, L. R., National Cancer Institute, Fort Detrick, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2005)
1779. Philips, M., Department of Health, New York City, New York (PDA/1 *Bacillus anthracis* 2003)
1780. Phillips, N. J., University of California, San Francisco, San Francisco (PDA/1 *Francisella tularensis* 2004)
1781. Phillips, R. W., Massachusetts Institute of Technology, Cambridge, Massachusetts (PDA/1 *Brucella melitensis* 2000, 2001)
1782. Philo, L. M., United States Department of Agriculture, Bozeman, Montana (PDA/1 *Brucella melitensis* 2001)
1783. Phuangsab, A., Cook County Hospital, Chicago, Illinois (PDA/1 Newcastle disease virus 2001)
1784. Piccone, M. E., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2004, PDA/1 Foot and mouth disease virus 2005)
1785. Pickering, A. K., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1786. Piedrahita, J. A., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
1787. Pier, G. B., Harvard Medical School, Boston, Massachusetts (PDA/1 *Yersinia pestis* 2005)
1788. Pierson, M. D., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Clostridium botulinum* 2000)
1789. Pillai, S. P., Florida Department of Health, State Public Health Laboratory-Miami, Miami, Florida (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
1790. Pincus, S., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
1791. Pitesky, M. E., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
1792. Pitha, P. M., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2002, 2003)
1793. Pitha, P. M., Johns Hopkins University, Baltimore, Maryland (PDA/1 Newcastle disease virus 2001)
1794. Pitt, M. L. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Bacillus anthracis* 2001, MDA/4/5 *Brucella melitensis* 2004, MDA/4/5 *Coxiella burnetii* 2002, PDA/1 *Bacillus anthracis* 2001, 2004, PDA/1 *Yersinia pestis* 2002)
1795. Plano, G. V., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2000, 2002, 2003, 2004, 2005)

1796. Plaut, R. D., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
1797. Pletnev, A., National Institutes of Health, Bethesda, Maryland (EDA/2 Tick-borne encephalitis virus 2000, 2001, MDA/6 Langat virus 2000, 2001)
1798. Plummer, A. L., Tetracore Inc., Gaithersburg, Maryland (PDA/1 *Francisella tularensis* 2000)
1799. Plunkett III., G., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1800. Pöhlmann, S., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
1801. Poland, G. A., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 Monkeypox virus 2002)
1802. Polo, J. M., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1803. Polotsky, Y., Walter Reed Army Institute of Research, Forest Glen, Maryland (PDA/1 *Brucella melitensis* 2000)
1804. Pombo, M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
1805. Pomerantsev, A. P., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
1806. Pomerantseva, O. M., Naval Medical Research Center, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2004)
1807. Pop, M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003)
1808. Pope, C. R., University of Delaware, Newark, Delaware (PDA/1 Newcastle disease virus 2003)
1809. Popov, S., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005)
1810. Popov, V. L., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2001, PDA/1 *Rickettsia rickettsii* 2004)
1811. Popova, T., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, 2005)
1812. Popovic, T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, 2003, 2005, PDA/1 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2002, 2005, PDA/1 *Burkholderia pseudomallei* 2002, 2005)
1813. Porotto, M., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2004)
1814. Porschen, R., Focus Technologies, Cypress, California (PDA/1 *Bacillus anthracis* 2003)
1815. Porter, H., Brigham Young University, Provo, Utah/Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2002, 2003)
1816. Portner, A., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Newcastle disease virus 2000, 2002)

1817. Powdrill, T. F., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
1818. Powell, B. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2005)
1819. Powell, T. D., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003, 2004)
1820. Power, M. E., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
1821. Powers, A. M., University of Texas Medical Branch, Galveston, Texas/Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004)
1822. Poysky, F. T., United States Department of Commerce, Seattle, Washington (PDA/1 *Clostridium botulinum* 2002, 2004)
1823. Prabakaran, S., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2001)
1824. Prashar, Y., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
1825. Pratt, R. W., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2005, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2003)
1826. Price, L. B., Johns Hopkins University, Baltimore, Maryland/Northern Arizona University, Flagstaff, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2000, PDA/1 *Yersinia pestis* 2001)
1827. Price, R. L., University of South Carolina, Columbia South Carolina (PDA/1 *Bacillus anthracis* 2004)
1828. Pritchard, D. G., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
1829. Probert, W. S., California Department of Health Services, Richmond, California (PDA/1 *Brucella melitensis* 2004)
1830. Prusiner, S. B., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002, 2005)
1831. Pryor, H. I., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)
1832. Przygodzki, R. M., Armed Forces Institute of Pathology, Washington, D.C. (EDA/1 “1918 Influenza virus” 2004)
1833. Pujol, C., State University of New York at Stony Brook, Stony Brook, New York (PDA/1 *Yersinia pestis* 2003, 2004)
1834. Pulendran, Bali, Emory Vaccine Research Center and Department of Pathology, Emory University, Atlanta, Georgia (EDA/2 Lassa virus 2003, EDA/2 Zaire ebolavirus 2003)
1835. Purmal, A., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)

1836. Pushko, P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lassa virus 2001, EDA/2 Zaire ebolavirus 2000, 2001, 2002, PDA/1 Venezuelan equine encephalitis virus 2004)
1837. Putnak, J. R., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
1838. Qi, J., University of Tennessee, Memphis, Tennessee (PDA/1 *Bacillus anthracis* 2004)
1839. Qi, Y., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2001, 2002)
1840. Qin, A., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2004)
1841. Quackenbush, J., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2005)
1842. Quinn, C. P., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003)
1843. Qureshi, N., University of Missouri, Kansas City, Missouri (PDA/1 *Brucella melitensis* 2004)
1844. Raab, R. W., James Madison University, Harrisonburg, Virginia (PDA/1 *Yersinia pestis* 2005)
1845. Rabinovitch, M., Rockefeller University, New York, New York (PDA/1 *Coxiella burnetii* 2000)
1846. Rachek, L. I., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000)
1847. Radnegde, L., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Bacillus anthracis* 2001, 2002, 2003)
1848. Radulovic, S., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2002, 2003)
1849. Radune, D., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1850. Radyuk, S. N., Advanced Biosystems, Inc., Manassas, Virginia/George Mason University, Manassas, VA (PDA/1 *Bacillus anthracis* 2003)
1851. Ragland, D., Purdue University, West Lafayette, Indiana (PDA/1 Foot and mouth disease virus 2003)
1852. Rajashekara, G., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2004)
1853. Rama Krishna, N., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
1854. Ramanculov, E., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
1855. Ramirez, D. M., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2002)
1856. Ramponi, A. J., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)

1857. Rao, M., Walter Reed Army Institute of Research, Silver Spring, Maryland (EDA/2 Zaire ebolavirus 2002)
1858. Rasko, D. A., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2004)
1859. Rasooly, A., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2004)
1860. Ratterree, M., Sierra Biomedical Inc., Sparks, Nevada (PDA/1 Japanese encephalitis virus 2000)
1861. Raulie, E. K., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
1862. Rautenschlein, S., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2002)
1863. Ravel, J., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2004)
1864. Ray, R. B., St. Louis University, St. Louis, Missouri (PDA/1 Newcastle disease virus 2003)
1865. Ray, R., St. Louis University, St. Louis, Missouri (PDA/1 Newcastle disease virus 2003)
1866. Raymond, J. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2002)
1867. Rea, K. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
1868. Read, R. D. A., East Carolina University, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
1869. Read, T. D., Institute for Genomic Research, Rockville, Maryland/University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003, 2004, PDA/1 *Coxiella burnetii* 2003)
1870. Rebeil, R., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
1871. Reddy, N. R., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2003)
1872. Redkar, R. J., Schott Glass Technologies Inc., Duryea, Pennsylvania/University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001, 2002, 2004, PDA/1 *Brucella melitensis* 2001, 2002)
1873. Redmond, C., University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003)
1874. Reed, D. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, 2004, MDA/4/5 Andes virus 2002, MDA/4/5 Venezuelan equine encephalitis virus 2001)
1875. Reeves, J. D., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
1876. Regala, W. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002, 2004)

1877. Regnery, R. L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
1878. Reichard, K. W., Cook County Hospital, Chicago, Illinois (PDA/1 Newcastle disease virus 2001)
1879. Reichhardt, U., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000, 2002)
1880. Reid, A. H., Armed Forces Institute of Pathology, Washington, D.C. (EDA/1 “1918 Influenza virus” 2001)
1881. Reinders, M. O., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2004)
1882. Reisenauer, A., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
1883. Reitter, J. N., University of Massachusetts, Worcester, Massachusetts (PDA/1 Newcastle disease virus 2003)
1884. Relman, D. A., Stanford University, Stanford, Connecticut (EDA/1 Variola virus 2004, MDA/4/5 Variola virus 2004)
1885. Ren, D., Cornell University, Ithaca, New York (PDA/1 *Bacillus anthracis* 2005)
1886. Ren, Q., University of Wyoming, Laramie, Wyoming (PDA/1 *Coxiella burnetii* 2003, PDA/1 *Rickettsia rickettsii* 2003)
1887. Renshaw, M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2001)
1888. Reponen, T., Centers for Disease Control and Prevention, Cincinnati, Ohio (MDA/4/5 *Bacillus globigii* 2005)
1889. Resau, J., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001)
1890. Rest, R. F., Drexel University, Philadelphia, Pennsylvania (PDA/1 *Bacillus anthracis* 2003, 2004)
1891. Reyes, A. E., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
1892. Reynolds, D. L., Iowa State University, Ames, Iowa (PDA/1 Newcastle disease virus 2000)
1893. Reznik, G., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
1894. Rhodehamel, E. J., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2003)
1895. Rhoton, S. D., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
1896. Rhyan, J. C., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001, 2004)
1897. Riberday, J. M., St. Jude Children’s Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000)
1898. Ribot, E., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)

1899. Ribot, W. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
1900. Rice, C. M., Rockefeller University, New York, New York (PDA/1 Japanese encephalitis virus 2003)
1901. Rice, E. W., United States Environmental Protection Agency, Cincinnati, Ohio (PDA/1 *Bacillus anthracis* 2005)
1902. Richards, A. L., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2004)
1903. Richardson, A. P., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
1904. Richmond, K., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 Newcastle disease virus 2004)
1905. Ricklefs, R. E., University of Missouri-St. Louis, St. Louis, Missouri (PDA/1 Newcastle disease virus 2002)
1906. Rico-Hesse, Rebeca, Southwest Foundation for Biomedical Research, San Antonio, Texas (EDA/2 Lassa fever virus 2002, EDA/2 Guanarito virus 2002, EDA/2 Junin virus 2002, EDA/2 Machupo virus 2002, PDA/1 Flexal virus 2002, PDA/1 Sabiá virus 2002)
1907. Rider, T. H., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
1908. Riley, J. L., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
1909. Rilstone, J. Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
1910. Rinaldi, M. G., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2001, 2002)
1911. Ringpis, F., ClinCyte, LLC, San Diego, California (PDA/1 *Brucella melitensis* 2000)
1912. Risatti, G. R., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2005, PDA/1 Classical swine fever virus 2003, 2005)
1913. Ritchey, J. W., Oklahoma State University, Stillwater, Oklahoma (PDA/1 Cercopithecine herpesvirus 1 2005)
1914. Rittner, C. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2000)
1915. Robbins, J. B., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
1916. Robertson, G. T., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000, 2002, 2003)
1917. Robertson, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2001)
1918. Robertson, S. J., University of California, San Francisco, California (PDA/1 *Coxiella burnetii* 2003)

1919. Robinson, H. L., Emory University, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
1920. Robinson, R., Pfizer, Lincoln, Nebraska (PDA/1 Foot and mouth disease virus 2004)
1921. Robinson, T. M., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2004)
1922. Robison, R., Brigham Young University, Provo, Utah/Harvard Medical School, Boston, Massachusetts (PDA/1 *Bacillus anthracis* 2002, 2003)
1923. Rocco, J. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
1924. Rock, D. L., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut, Storrs, Connecticut (PDA/1 African swine fever virus 2000, 2001, 2002, 2004, 2005, PDA/1 Camelpox virus 2002, PDA/1 Classical swine fever virus 2005, PDA/1 Foot and mouth disease virus 2002, PDA/1 Goatpox virus 2002, PDA/1 Lumpy skin disease virus 2001, 2003, PDA/1 Sheeppox virus 2002)
1925. Roche, T. E., United States Geological Survey, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2003, 2004)
1926. Rockemann, D. D., S., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2004)
1927. Rodriguez, L. L., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003)
1928. Roehrig, J. T., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2001, PDA/1 Japanese encephalitis virus 2003, PDA/1 Nipah virus 2000)
1929. Roffe, T. J., United States Department of the Interior, Bozeman, Montana (PDA/1 *Brucella melitensis* 2001)
1930. Rogers, K., Oklahoma State University, Stillwater, Oklahoma (PDA/1 Cercopithecine herpesvirus 1 2003)
1931. Rohrer, A. J., United States Air Force Academy, Colorado Springs, Colorado (PDA/1 *Yersinia pestis* 2003)
1932. Rojek, J. M., Scripps Research Institute, La Jolla, California (EDA/2 Lassa virus 2005)
1933. Rollin, P. E., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Guanarito virus 2002, EDA/2 Lassa virus 2000, 2003, EDA/2 Machupo virus 2002, EDA/2 Omsk hemorrhagic fever virus 2004, EDA/2 Reston ebolavirus 2001, EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2000, 2001, 2003, 2004, 2005, PDA/1 Rift Valley fever virus 2002, PDA/1 Sabiá virus 2002, PDA/1 Flexal virus 2002, PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002, 2003)
1934. Romero, C. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1935. Romero, G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)

1936. Romero, R. E., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
1937. Romoser, W. S., Ohio University, Athens, Ohio (PDA/1 Venezuelan equine encephalitis virus 2004)
1938. Ronning, C. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
1939. Roop II, R. M., East Carolina University, Greenville, North Carolina/Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003, 2004)
1940. Rose, D. J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1941. Rose, L. J., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005, PDA/1 *Yersinia pestis* 2003)
1942. Rose, S., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2001, 2002, PDA/1 *Brucella melitensis* 2001)
1943. Roselle, B. J., Procter and Gamble, St. Bernard, Ohio (PDA/1 *Bacillus anthracis* 2004, 2005)
1944. Rosen, G. M., University of Maryland Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2005)
1945. Rosenberger, J. K., University of Delaware, Newark, Delaware (PDA/1 Newcastle disease virus 2003)
1946. Rosenblatt, J. E., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 *Bacillus anthracis* 2002)
1947. Rosenzweig, J. A., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2005)
1948. Ross, C. L., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2003)
1949. Ross, T. M., East Carolina University, Greenville, North Carolina (PDA/1 Influenza A virus 2003)
1950. Rossi, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 *Bacillus anthracis* 2001, PDA/1 Venezuelan equine encephalitis virus 2003)
1951. Rota, P. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002, 2003, 2005)
1952. Rote, W. W., Corvas International, San Diego, California (EDA/2 Zaire ebolavirus 2003)
1953. Rotman, B., BCR Diagnostics, Inc., Jamestown, Rhode Island/Brown University, Providence, Rhode Island (PDA/1 *Bacillus anthracis* 2004)
1954. Rottinghaus, G. E., University of Missouri, Columbia, Missouri (PDA/1 Newcastle disease virus 2000)
1955. Roudabush, R. M., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
1956. Roush, W. B., United States Department of Agriculture, Agricultural Research Service, Mississippi State, Mississippi (MDA/4/5 *Mycoplasma gallisepticum* 2005)
1957. Rowe, J., University of Nevada at Reno, Reno, Nevada (EDA/2 Junin virus 2000)

1958. Rowe, T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2001, 2003)
1959. Rowehl, R., Brookhaven National Laboratory, Upton, New York (PDA/1 *Yersinia pestis* 2005)
1960. Rowland, G. N., University of Georgia, Athens, Georgia (MDA/4/5 *Mycoplasma synoviae* 2001)
1961. Rowton, E. D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Rift Valley fever virus 2000)
1962. Roy, C. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Yersinia pestis* 2003, PDA/1 *Bacillus anthracis* 2005)
1963. Roy, C. R., Yale University, New Haven, Connecticut (PDA/1 *Coxiella burnetii* 2003, 2004)
1964. Roy, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2001, MDA/4/5 *Burkholderia mallei* 2005, MDA/4/5 Cowpox virus 2002)
1965. Rubins, K. H., Stanford University, Stanford, Connecticut (EDA/1 Variola virus 2004, MDA/4/5 Variola virus 2004)
1966. Rudnick, S., Harvard School of Public Health, Boston, Massachusetts (MDA/4/5 Human Rhinovirus 2003)
1967. Rudolph, A. E., National Institutes of Health, Hamilton, Montana/University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Yersinia pestis* 2000, 2002)
1968. Ruel, T. D., Yale University School of Medicine, New Haven Connecticut (PDA/1 Rift Valley fever virus 2000)
1969. Ruff, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
1970. Ruggiero, C. E., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
1971. Runnheim, R., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
1972. Rurangirwa, F. R., Washington State University, Pullman, Washington (PDA/1 *Ehrlichia ruminantium* 2000, PDA/1 *Mycoplasma mycoides mycoides* 2000)
1973. Rusalov, D., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
1974. Russell, K. E., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2004, 2005)
1975. Russell, K. L., Naval Medical Research Center Detachment, NAMRID, Peru (PDA/1 Venezuelan equine encephalitis virus 2000, 2004)
1976. Russell, S. C., University of California, Davis, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
1977. Ruthel, G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2002, 2003, 2004, EDA/2 Zaire ebolavirus 2002, 2003, 2004, 2005, PDA/1 *Bacillus anthracis* 2004, 2005, PDA/1 *Yersinia pestis* 2004)

1978. Ryan, J. R., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2003)
1979. Ryan, J., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Brucella melitensis* 2003, PDA/1 Eastern equine encephalitis virus 2003)
1980. Rybachuck, G., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Bacillus anthracis* 2003)
1981. Rycerz, T., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2003)
1982. Rydkina, E., University of Rochester Rochester, New York (PDA/1 *Rickettsia rickettsii* 2002, 2003)
1983. Sabin, R., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2002)
1984. Sacchi, C. T., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
1985. Sacci, J. B., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2003)
1986. Safar, J. G., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
1987. Sahm, D. F., Focus Technologies, Herndon, Virginia (PDA/1 *Bacillus anthracis* 2003)
1988. Sahni, A., University of Rochester Rochester, New York (PDA/1 *Rickettsia rickettsii* 2002)
1989. Sahni, S. K., University of Rochester Rochester, New York (PDA/1 *Rickettsia rickettsii* 2002, 2003, 2004)
1990. Sahu, S. P., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Venezuelan equine encephalitis virus 2003)
1991. Saif, Y. M., Ohio State University, Wooster, Ohio (PDA/1 Newcastle disease virus 2002)
1992. Saikh, K. U., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 *Bacillus anthracis* 2005, PDA/1 *Yersinia pestis* 2004)
1993. Saile, E., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2002)
1994. Saleh, S. S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2003, PDA/1 Rift Valley fever virus 2005)
1995. Salvato, M., University of Maryland, Baltimore, Maryland (EDA/2 Lassa virus 2002, 2003, 2004)
1996. Salvatore, M., Mount Sinai School of Medicine, New York, New York (EDA/1 “1918 Influenza virus” 2001)
1997. Salzberg, S. L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003)
1998. Samaan, M. N., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)

1999. Samal, S. K., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2001, 2003, 2004)
2000. Samartino, L. E., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2001, 2002)
2001. Samrakandi, M. M., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
2002. Samuel, C. E., University of California at Santa Barbara, Santa Barbara, California (PDA/1 Newcastle disease virus 2001)
2003. Samuel, J. E., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2001, 2002, 2003, 2004, 2005)
2004. Sanchez, A. J., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Crimean-Congo hemorrhagic fever virus 2002, EDA/2 Sudan ebolavirus 2004)
2005. Sanchez, A., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2000, 2003)
2006. Sandem, G. N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2007. Sander, J. E., University of Georgia, Athens, Georgia (PDA/1 Newcastle disease virus 2003)
2008. Sanderson, W. T., , Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2009. Sandfort, R. F., California Department of Health Services, Berkeley, California (PDA/1 *Yersinia pestis* 2000)
2010. Sanstad, E. A., Loyola University, Maywood, Illinois (PDA/1 *Bacillus anthracis* 2003)
2011. Santucci-Domotor, L. A., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003)
2012. Sardelis, M. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
2013. Sarr, J., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
2014. Sarria, S., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2015. Sathiyaseelan, J., University of Massachusetts, Amherst, Massachusetts (PDA/1 *Brucella melitensis* 2000, 2001)
2016. Sautter, T. E., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)
2017. Savage, Harry M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Rift Valley fever virus 2002)
2018. Savitt, A. G., Brookhaven National Laboratory, Upton, New York (PDA/1 *Yersinia pestis* 2005)
2019. Sayeedur Rahman, M., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003, 2005)
2020. Scanlan, D., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)

2021. Schafferman, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
2022. Schaffner, D. W., Rutgers - The State University of New Jersey, New Brunswick, New Jersey (PDA/1 *Clostridium botulinum* 2000, 2002)
2023. Schaller, R. A., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2002)
2024. Scharf, O., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
2025. Schesser, K., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2005)
2026. Schilling, A. S., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
2027. Schilling, B., Buck Institute for Age Research, Novato, California (PDA/1 *Francisella tularensis* 2004)
2028. Schlievert, P. M., University of Minnesota Medical School, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2005)
2029. Schmaljohn, A. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/1 Variola virus 2003, EDA/2 Crimean-Congo hemorrhagic fever virus 2005, EDA/2 Lake Victoria marburgvirus 2001, 2002, 2003, 2004, 2005, EDA/2 Zaire ebolavirus 2000, 2001, 2002, 2003, 2005, PDA/1 Camelpox virus 2003, PDA/1 Monkeypox virus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
2030. Schmaljohn, C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, 2002, EDA/2 Zaire ebolavirus 2002, 2003, 2004, Andes virus 2002, PDA/1 Rift Valley fever virus 2005, PDA/1 Venezuelan equine encephalitis virus 2003)
2031. Schmitt, B. J., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Venezuelan equine encephalitis virus 2003)
2032. Schneerson, R., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003)
2033. Schneider, J. L., Purdue University, West Lafayette, Indiana (PDA/1 Foot and mouth disease virus 2003)
2034. Schoepp, R. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Eastern equine encephalitis virus 2002, 2005)
2035. Schokman, R. United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2005)
2036. Schoneboom, A., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
2037. Schoneboom, B. A., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000)
2038. Schrader, K. N., California Department of Health Services, Richmond, California (PDA/1 *Brucella melitensis* 2004)
2039. Schrenzel, M. D., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)

2040. Schriefer, M. E., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004)
2041. Schroeder-Tucker, L., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Bacillus anthracis* 2003)
2042. Schubit, F. D., National Cancer Institute Frederick, Maryland (PDA/1 *Yersinia pestis* 2005)
2043. Schuch, R., Rockefeller University, New York, New York (PDA/1 *Bacillus anthracis* 2002)
2044. Schuetz, J. F., University of Medicine and Dentistry of New Jersey, Piscataway, New Jersey (PDA/1 Newcastle disease virus 2002)
2045. Schultz, W., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2002)
2046. Schultz-Cherry, S., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2000, 2003)
2047. Schumacher, J. A., University of Scranton, Scranton, Pennsylvania/University of Texas, Dallas, Texas (PDA/1 *Bacillus anthracis* 2004)
2048. Schupp, J. M., Northern Arizona University, Flagstaff, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2000, 2002, 2004, PDA/1 *Yersinia pestis* 2001)
2049. Schurig, G. G., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003)
2050. Schwan, T. G., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2000, 2002)
2051. Schwartz, D. C., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2052. Schwoebel, E. D., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
2053. Scorpio, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
2054. Scorza, R., United States Department of Agriculture, Agricultural Research Service, Kearneysville, West Virginia (PDA/1 Plum pox virus 2001)
2055. Scott, D. E., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Brucella melitensis* 2001)
2056. Scott, D. P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003)
2057. Scott, M. R., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002, 2005)
2058. Scott, M. S., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Newcastle disease virus 2005)
2059. Scott, T. W., University of Maryland, College Park, Maryland (PDA/1 Eastern equine encephalitis virus 2000, 2001)
2060. Scouten, A. J., University of Georgia, Griffin, Georgia (PDA/1 *Bacillus anthracis* 2004, 2005)
2061. Scroggs, R. A., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Newcastle disease virus 2000)

2062. Scuggs, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
2063. Seal, B. S., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Bluetongue virus 2000, PDA/1 Newcastle disease virus 2000, 2001, 2002, 2003, 2004, 2005)
2064. Sears, J., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2003)
2065. Sebbane, F., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004, 2005)
2066. Seiler, P., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003)
2067. Seitz, T. A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2068. Sekellick, M. J., University of Connecticut, Storrs, Connecticut (PDA/1 Newcastle disease virus 2001)
2069. Selengut, J., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2070. Selkov, E., Integrated Genomics, Inc., Chicago, Illinois (PDA/1 *Brucella melitensis* 2002)
2071. Sellers, H. S., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Newcastle disease virus 2001, 2002, 2004)
2072. Senne, D. A., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 Influenza A virus 2002, 2003, 2004, PDA/1 Newcastle disease virus 2004, 2005)
2073. Serban, H., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
2074. Seshadri, R., Institute for Genomic Research, Rockville, Maryland/Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2001, 2003, 2004)
2075. Seshan, K. R., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2002, PDA/1 *Coccidioides posadasii* 2000)
2076. Seth, P., Uniformed Services University of the Health Sciences, Bethesda, Maryland (PDA/1 Venezuelan equine encephalitis virus 2003)
2077. Setlur, U. S., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2005)
2078. Severin, D. D. M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2003)
2079. Severin, J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2080. Sha, Z., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2000)
2081. Shah, J., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2003)
2082. Shallom, S., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2004)

2083. Shamblin, C., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2084. Shannon, J. G., Drexel University, Philadelphia, Pennsylvania (PDA/1 *Bacillus anthracis* 2003)
2085. Shapiro, L., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
2086. Sharma, J. M., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2002, 2005)
2087. Sharma, S. K., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland/University of Massachusetts Dartmouth, North Dartmouth, Massachusetts (PDA/1 *Clostridium botulinum* 2003, 2004, 2005)
2088. Shatalin, K. Y., University of Illinois, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2005)
2089. Shaw, E. I., Center for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
2090. Shaw, M., Mount Sinai School of Medicine, New York, New York (PDA/1 Newcastle disease virus 2003)
2091. Shealy, D., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
2092. Shelton, D. R., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2093. Shen, M., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001, 2002)
2094. Sheppard, D., University of California, San Francisco, California (PDA/1 Foot and mouth disease virus 2000, 2001, 2002)
2095. Sherman, D., Purdue University, West Lafayette, Indiana (PDA/1 *Bacillus anthracis* 2004)
2096. Shetron-Rama, L. M., University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2005)
2097. Shi, R.-J., University of Rochester, Rochester, New York (PDA/1 *Rickettsia rickettsii* 2000)
2098. Shieh, W.-J., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2004, 2005, PDA/1 *Bacillus anthracis* 2003, PDA/1 Nipah virus 2000, 2003)
2099. Shields, R. L., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
2100. Shih, L. M., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 Newcastle disease virus 2005)
2101. Shih, M.-T. P., Florida Department of Health, State Public Health Laboratory-Miami, Miami, Florida (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
2102. Shiloach, J., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003, 2004)

2103. Shipley, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Francisella tularensis* 2000)
2104. Shirako, Y., California Institute of Technology, Pasadena, California (PDA/1 Venezuelan equine encephalitis virus 2001)
2105. Shoemaker, D., Clinical Research Management, North Royalton, Ohio/United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002, 2003, PDA/1 *Yersinia pestis* 2002, 2003)
2106. Shoemaker, M. O., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2002)
2107. Shoemaker, T., Centers for Disease Control and Prevention, Atlanta, Georgia/Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 Rift Valley fever virus 2002, MDA/4/5 Venezuelan equine encephalitis virus 2001, EDA/2 Zaire ebolavirus 2003)
2108. Shompole, S., Washington State University, Pullman, Washington (PDA/1 *Ehrlichia ruminantium* 2000, PDA/1 *Mycoplasma mycoides mycoides* 2000)
2109. Shope, R. E., Yale University, New Haven, Connecticut/Center for Biodefense and Emerging Infectious Diseases and Sealy Center for Vaccine Development, University of Texas Medical Branch, Galveston, Texas (EDA/2 Omsk hemorrhagic fever virus 2003, 2004, PDA/1 Japanese encephalitis virus 2000, 2004, PDA/1 Venezuelan equine encephalitis virus 2001, 2004)
2110. Shoulers, K. S., Tetracore Inc, Gaithersburg, Maryland (PDA/1 Foot and mouth disease virus 2002)
2111. Shubitz, L., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2002)
2112. Shumway, M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002)
2113. Sidwell, R. W., Utah State University, Logan, Utah (EDA/5 Camelpox virus 2002, EDA/5 Monkeypox virus 2002)
2114. Siegel, E. M., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides posadasii* 2005)
2115. Silva-Herzog, E., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2004)
2116. Silverman, D. J., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2000, 2001, 2002, 2003, 2004)
2117. Simmons, G., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2118. Simons, J., University of Arizona, Tucson, Arizona (PDA/1 *Coccidioides immitis* 2002)
2119. Simonson, T. S., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004, 2005)
2120. Simpson, L. L., Jefferson Medical College, Philadelphia, Pennsylvania (PDA/1 *Clostridium botulinum* 2004)
2121. Simpson-Haidaris, P. J., University of Rochester, Rochester, New York (PDA/1 *Rickettsia rickettsii* 2000)

2122. Simpson-Holley, M., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2123. Simser, J. A., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia rickettsii* 2003, 2004, 2005)
2124. Sina, B. J., University of Maryland, College Park, Maryland (PDA/1 Eastern equine encephalitis virus 2000)
2125. Sinai, A. P., Yale University, New Haven, Connecticut (PDA/1 *Coxiella burnetii* 2000)
2126. Singh, B. R., University of Massachusetts Dartmouth, North Dartmouth, Massachusetts (PDA/1 *Clostridium botulinum* 2001, 2003, 2004)
2127. Singh, M., Chiron, Emeryville, California (PDA/1 *Bacillus anthracis* 2005)
2128. Sirianni, N. M., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
2129. Sirota, L., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004)
2130. Sisler, J. R., National Institute of Allergy and Infectious Diseases (NIAID), Bethesda, Maryland (PDA/1 Monkeypox virus 2001, 2002)
2131. Skinner, G. E., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2000)
2132. Skowronski, E. W., California Animal Health and Food Safety Laboratory, Davis, California (PDA/1 Newcastle disease virus 2005)
2133. Skrzypek, E., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2001, 2003)
2134. Slaterbeck, A. F., Naval Surface Warfare Center, Dahlgren, Virginia (PDA/1 *Bacillus anthracis* 2005)
2135. Slezak, T. R., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2002, 2004)
2136. Sloan, L. M., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 *Bacillus anthracis* 2002)
2137. Small, D. S., IT Corporation, Washington, D.C. (PDA/1 *Bacillus anthracis* 2002)
2138. Smee, D. F., Utah State University, Logan, Utah (EDA/5 Camelpox virus 2002, EDA/5 Monkeypox virus 2002, MDA/4/5 Cowpox virus 2000, PDA/1 Camelpox virus 2001, PDA/1 Monkeypox virus 2001)
2139. Smith, D. R., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2005)
2140. Smith, G. C., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Eastern equine encephalitis virus 2001)
2141. Smith, H. O., Institute for Biological Energy Alternatives, Rockville, Maryland (PDA/6 Enterobacteria phage ϕ X174 2003)
2142. Smith, J. F., AlphaVax, Inc., Research Triangle Park, North Carolina/United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Crimean-Congo hemorrhagic fever virus 2005, EDA/2 Lassa virus 2001, EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2000, 2001, 2002, MDA/4/5

- Venezuelan equine encephalitis virus 2001, [PDA/1](#) Eastern equine encephalitis virus 2002, [PDA/1](#) Venezuelan equine encephalitis virus 2000, 2001, 2003)
2143. Smith, K. L., Northern Arizona University, Flagstaff, Arizona/Louisiana State University, Baton Rouge, Louisiana/ Lawrence Livermore National Laboratory, Livermore, California ([PDA/1](#) *Bacillus anthracis* 2000, 2001, 2002, 2003, 2004, [PDA/1](#) *Francisella tularensis* 2001)
2144. Smith, M. J., Orion Genomics, St. Louis, Missouri ([PDA/1](#) *Burkholderia mallei* 2005)
2145. Smith, S. A., Virginia Polytechnic Institute and State University, Blacksburg, Virginia ([PDA/1](#) *Brucella melitensis* 2003)
2146. Smith, S. M., Lawrence Livermore National Laboratory, Livermore, California ([MDA/4/5](#) *Bacillus anthracis* 2005, [MDA/4/5](#) *Bacillus globigii* 2005, [MDA/4/5](#) *Yersinia pestis* 2005)
2147. Smith, S. R., United States Geological Survey, Madison, Wisconsin ([PDA/1](#) *Yersinia pestis* 2003, 2004)
2148. Smith, T. F., Mayo Clinic Foundation, Rochester, Minnesota ([PDA/1](#) *Bacillus anthracis* 2002, [PDA/1](#) Monkeypox virus 2002)
2149. Smucny, J. J., Walter Reed Army Institute of Research, Silver Spring, Maryland ([PDA/1](#) Japanese encephalitis virus 2000)
2150. Snelling, N. J., Walter Reed Army Institute of Research, Silver Spring, Maryland ([PDA/1](#) *Yersinia pestis* 2004)
2151. Snowden, G., Washington State University, Pullman, Washington ([PDA/1](#) Alcelaphine herpesvirus 1,2 2000, 2001, 2002)
2152. Snyder, A. P., United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland ([PDA/1](#) *Bacillus anthracis* 2004)
2153. Sobel, R. A., Department of Pathology, Stanford University, Stanford, California ([PDA/1](#) *Coccidioides immitis* 2000, 2002, 2003, [PDA/1](#) *Coccidioides posadasii* 2000)
2154. Soboto, L., Naval Surface Warfare Center, Dahlgren, Virginia ([PDA/1](#) *Bacillus anthracis* 2005)
2155. Sofi Ibrahim, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland ([EDA/1](#) Variola virus 2003, [PDA/1](#) Camelpox virus 2003, [PDA/1](#) *Francisella tularensis* 2000, [PDA/1](#) Monkeypox virus 2003, [PDA/1](#) Rift Valley fever virus 2005)
2156. Soike, K., Sierra Biomedical Inc., Sparks, Nevada ([PDA/1](#) Japanese encephalitis virus 2000)
2157. Sokhansanj, B. A., Lawrence Livermore National Laboratory, Livermore, California ([PDA/1](#) *Yersinia pestis* 2002, 2004)
2158. Solfrosi, L., Scripps Research Institute, La Jolla, California ([PDA/1](#) Bovine spongiform encephalopathy prion 2002)
2159. Solomon, D., Northern Arizona University, Flagstaff, Arizona ([PDA/1](#) *Bacillus anthracis* 2002)
2160. Solomon, H. A., United States Food and Drug Administration, Summit-Argo, Illinois ([PDA/1](#) *Clostridium botulinum* 2000)

2161. Solomon, H. M., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2003)
2162. Solomon, T., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2003)
2163. Sondervan, D., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2004)
2164. Song, J., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2005)
2165. Sorensen, K. N., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
2166. Sorokulova, I. B., Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2004)
2167. Sout, G. W., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2000)
2168. Souza, B. Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
2169. Spackman, E., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2002, 2003, 2004, PDA/1 Newcastle disease virus 2003, 2004)
2170. Speck, R. F., Gladstone Institute of Virology and Immunology, San Francisco, California/University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2000, 2001, EDA/2 Zaire ebolavirus 2000, 2001)
2171. Speicher, J., National Institutes of Health, Bethesda, Maryland (EDA/2 Tick-borne encephalitis virus 2001)
2172. Spiropoulou, C. F., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Guanarito virus 2002, EDA/2 Lassa virus 2005, EDA/2 Machupo virus 2002, EDA/2 Sudan ebolavirus 2004, PDA/1 Sabiá virus 2002, PDA/1 Flexal virus 2002)
2173. Spitalny, G., Elusys Therapeutics Inc., Pine Brook, New Jersey (MDA/4/5 *Bacillus anthracis* 2005)
2174. Splitter, G. A., University of Wisconsin, Madison, Wisconsin (PDA/1 *Brucella melitensis* 2000, 2002, 2003, 2004, 2005)
2175. Springfield, T., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 Japanese encephalitis virus 2003)
2176. Spron, L. A., University of Maryland, Baltimore, Maryland/University of Rochester, Rochester, New York (PDA/1 *Rickettsia rickettsii* 2000, 2003)
2177. Sreevatsan, S., ClinCyte, LLC, San Diego, California (PDA/1 *Brucella melitensis* 2000)
2178. Sriranganathan, N., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2001, 2003)
2179. Srivastava, A. K., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
2180. Srivastava, A., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)

2181. Stabler, K., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001)
2182. Stahl, D. A., Northwestern University, Evanston, Illinois/University of Washington, Seattle, Washington (PDA/1 *Bacillus anthracis* 2001, 2004)
2183. Stalis, I. H., Zoological Society of San Diego, San Diego, California (PDA/1 *Mycoplasma mycoides mycoides* 2005)
2184. Stallknecht, D. E., University of Georgia, Athens, Georgia (PDA/1 Influenza A virus 2004)
2185. Stanley, M., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004)
2186. Steel, A., MetriGenix, Inc., Gaithersburg, Maryland (PDA/1 Influenza A virus 2004)
2187. Steele, K. E., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2000, EDA/2 Zaire ebolavirus 2000, 2001, PDA/1 Venezuelan equine encephalitis virus 2000)
2188. Steele, P. T., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus athropaeus* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
2189. Steele, R., St. Louis University, St. Louis, Missouri (PDA/1 Newcastle disease virus 2003)
2190. Steichen, C., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003, 2004)
2191. Steigerwalt, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2192. Stephenson, I., National Veterinary Services Laboratories, U.S. Department of Agriculture, Animal and Health Inspection Services, Ames, Iowa/Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2005)
2193. Stevens, D. A., California Institute for Medical Research, San Jose, California (PDA/1 *Coccidioides immitis* 2000, 2002, 2003, PDA/1 *Coccidioides posadasii* 2000)
2194. Stevens, D., University of Washington, Seattle, Washington (PDA/1 *Bacillus anthracis* 2002)
2195. Stevenson, H. L., Centers for Disease Control and Prevention, Atlanta, Georgia/Ft. Collins, Colorado (PDA/1 *Yersinia pestis* 2003)
2196. Stinchcomb, D. T., Heska Corporation, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2003, 2004)
2197. Stoffregen, W. C., United States Department of Agriculture, Agricultural Research Service, Ames, Iowa (PDA/1 *Brucella melitensis* 2003, 2004)
2198. Stopa, P. J., United States Army Edgewood Chemical and Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2000)
2199. Stout, G., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2002)
2200. Stoutland, P. O., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
2201. Strachan, S. D., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2004)

2202. Straley, S. C., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2003, 2004, 2005)
2203. Strauss, E. G., California Institute of Technology, Pasadena, California (PDA/1 Venezuelan equine encephalitis virus 2001)
2204. Strauss, J. H., California Institute of Technology, Pasadena, California (PDA/1 Venezuelan equine encephalitis virus 2001)
2205. Strecker, K., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Crimean-Congo hemorrhagic fever virus 2005)
2206. Stribling, L. J. V., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2000, 2002)
2207. Strobel, G. A., Montana State University, Bozeman, Montana (PDA/1 *Bacillus anthracis* 2002, 2003)
2208. Suarez, D. L., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2000, 2002, 2003, 2004, PDA/1 Newcastle disease virus 2004)
2209. Subbarao, K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Influenza A virus 2003)
2210. Subrahmanyam, Y. V. B. K., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
2211. Succi, J., University of Texas, Houston, Texas (PDA/1 *Bacillus anthracis* 2003)
2212. Suderman, M. T., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2004)
2213. Suhan, M. L., West Virginia University, Morgantown, West Virginia (EDA/5 *Coxiella burnetii* 2000)
2214. Sullivan, L. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Venezuelan equine encephalitis virus 2005)
2215. Sullivan, N. J., National Institutes of Health, Bethesda, Maryland (EDA/2 Zaire ebolavirus 2000, 2005)
2216. Sullivan, S. A., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2217. Sullivan, V. J., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)
2218. Sultana, A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Yersinia pestis* 2004)
2219. Sun, Y.-H., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2002, 2004)
2220. Sunyer, J. O., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2221. Sur, J. H., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2002, PDA/1 Goatpox virus 2002, PDA/1 Sheeppox virus 2002)
2222. Suresh, M., University of Wisconsin, Madison, Wisconsin (EDA/1 “1918 Influenza virus” 2004)

2223. Sutton, D. A., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002)
2224. Sutton, F. N., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
2225. Sviat, S. L., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2004)
2226. Svitkina, T. M., North-Western University, Chicago, Illinois (PDA/1 *Rickettsia rickettsii* 2004)
2227. Swanson, J. A., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2000)
2228. Swayne, D. E., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (EDA/1 “1918 Influenza virus” 2001, 2002, 2004, PDA/1 Influenza A virus 2000, 2001, 2002, 2003, 2004, 2005, PDA/1 Newcastle disease virus 2004)
2229. Swearingen, J. R., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Monkeypox virus 2001)
2230. Swenson, D. L. United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2004, 2005, EDA/2 Zaire ebolavirus 2004, 2005)
2231. Szymajda, U., University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001)
2232. Tafaro, A., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003)
2233. Tagaya, Y., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2000)
2234. Taylor, P., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2004)
2235. Taitt, C. R., Naval Research Laboratory, Center for Bio, Washington, D. C. (PDA/1 *Bacillus anthracis* 2002)
2236. Takimoto, T., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Newcastle disease virus 2000, 2002)
2237. Tall, B. D., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
2238. Tamin, A., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Hendra virus 2002, PDA/1 Nipah virus 2000, 2001, 2002)
2239. Tammariello, R. F., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, MDA/4/5 *Coxiella burnetii* 2002, MDA/4/5 Venezuelan equine encephalitis virus 2001, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, PDA/1 *Yersinia pestis* 2002)
2240. Tan, L., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Yersinia pestis* 2004)
2241. Tang, D. B., Walter Reed Army Medical Center, Washington, D.C. (PDA/1 Japanese encephalitis virus 2000)

2242. Tang, D.-C. C., University of Alabama at Birmingham, Birmingham, Alabama/Vaxin Inc., Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
2243. Tang, Y.-W., Vanderbilt University Medical Center, Nashville, Tennessee (EDA/2 Crimean-Congo hemorrhagic fever virus 2003)
2244. Tang, Z., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
2245. Tarcha, E., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides posadasii* 2003)
2246. Targonski, P. V., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 Bovine spongiform encephalopathy prion 2002)
2247. Tassello, J., V. I. Technologies, Inc., Watertown, Massachusetts (PDA/1 Foot and mouth disease virus 2002)
2248. Tatti, K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2003)
2249. Taubenberger, J. K., Armed Forces Institute of Pathology, Washington, D.C. (EDA/1 “1918 Influenza virus” 2001, 2002, 2003, 2004, 2005)
2250. Taus, N. S., Washington State University, Pullman (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
2251. Taylor, J. W., University of California at Berkeley, Berkeley, California (PDA/1 *Coccidioides immitis* 2000, 2003, PDA/1 *Coccidioides posadasii* 2000, 2003)
2252. Taylor, L., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2253. Teale, J. M., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Francisella tularensis* 2004)
2254. Temenak, J. J., Naval Medical Research Center, Silver Spring, Maryland/University of South Florida, Tampa, Florida/University of Missouri–Columbia, Columbia, Missouri/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2003, 2004, PDA/1 *Rickettsia rickettsii* 2001)
2255. Temple, R. M. S., Pukkerbush Veterinary Clinic, Bristolville, Ohio (PDA/1 *Brucella melitensis* 2001)
2256. Templeton, J. W., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2001)
2257. Tenover, F. C., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, 2003, 2004)
2258. Teplow, D. B., Harvard Medical School, Boston, Massachusetts/University of Washington, Seattle, Washington (PDA/1 *Bacillus anthracis* 2002, 2003)
2259. Tepp, W. H., University of Wisconsin, Madison, Wisconsin (PDA/1 *Clostridium botulinum* 2001, 2005)
2260. Tesh, R. B., University of Texas Medical Branch, Galveston, Texas (EDA/2 Guanarito virus 2000, PDA/1 Japanese encephalitis virus 2002)
2261. Tettelin, H., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004, PDA/1 *Coxiella burnetii* 2003)

2262. Tetzloff, R. C., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2003)
2263. Thakar, J. H., Armed Forces Radiobiology Research Institute, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2001)
2264. Thanassi, D. G., Stony Brook University, Stony Brook, New York (PDA/1 *Francisella tularensis* 2004)
2265. Thoen, C. O., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2000, 2001)
2266. Thomas, P. W., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000)
2267. Thomason, B., Johns Hopkins University, Baltimore, Maryland/University of Michigan Medical School, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003, 2004)
2268. Thompson, H. A., Centers for Disease Control and Prevention, Atlanta, Georgia/West Virginia University, Morgantown, West Virginia (EDA/5 *Coxiella burnetii* 2000, PDA/1 *Coxiella burnetii* 2002, 2003, 2004)
2269. Thompson, J. M., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2003)
2270. Thompson, J., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Francisella tularensis* 2003)
2271. Thorkildson, P., University of Nevada School of Medicine, Reno, Nevada (PDA/1 *Bacillus anthracis* 2004)
2272. Thorne, E. T., Wyoming Game and Fish Laboratory, University Station, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2000, 2002)
2273. Thorpe, P., University of Texas SW Med Ctr., Dallas, Texas (EDA/2 Lassa virus 2003, 2004, 2005)
2274. Thudium, K., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
2275. Thulasiraman, V., CIPHERGEN Biosystems, Fremont, California (PDA/1 *Yersinia pestis* 2001)
2276. Thwaite, J. E., University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003)
2277. Ticknor, L. O., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2003, 2004)
2278. Tijerina, R., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2002)
2279. Tims, T. B., University of South Florida, Tampa, Florida (PDA/1 *Bacillus anthracis* 2004)
2280. Tinsley, E., University of Pittsburgh, Pittsburgh, Pennsylvania (PDA/1 *Bacillus anthracis* 2003, 2004)
2281. Tipton-Hunton, C., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2002)
2282. Tirrell, M. V., University of California Santa Barbara, Santa Barbara, California (PDA/1 *Bacillus anthracis* 2004)

2283. Tobery, S. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2004)
2284. Toboias, H. J., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2004, MDA/4/5 *Bacillus thuringiensis* 2004)
2285. Todd III, Robert F., University of Michigan, Ann Arbor, Michigan (EDA/2 Zaire ebolavirus 2000)
2286. Toledo, R. T., University of Georgia, Athens, Georgia (PDA/1 *Clostridium botulinum* 2003)
2287. Tomasula, P., United States Department of Agriculture, Agricultural Research Service, Wyndmoor, Pennsylvania (PDA/1 *Bacillus anthracis* 2005)
2288. Tompkins, S. M., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 Influenza A virus 2004)
2289. Tong, M., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Rickettsia prowazekii* 2004)
2290. Tonks, M., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 *Bacillus anthracis* 2004)
2291. Tonsky, K., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
2292. Torres-Velaz, F., University of Georgia, Athens, Georgia (EDA/2 Nipah virus 2004, 2005)
2293. Toth, T. E., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2002)
2294. Tourasse, N., George Washington University, Washington D.C. (PDA/1 *Bacillus anthracis* 2003)
2295. Towle, A. C., CJ America, Ridgefield Park, New Jersey/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
2296. Towner, J. S., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2005)
2297. Towner, J. S., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Sudan ebolavirus 2004, EDA/2 Zaire ebolavirus 2003, 2004, 2005)
2298. Traul, D. L., Washington State University, Pullman (MDA/4/5 Alcelaphine herpesvirus 1,2 2004, 2005)
2299. Travassos da Rosa, A. P. A., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2002, PDA/1 Venezuelan equine encephalitis virus 2004)
2300. Tremblay, M. E., Procter and Gamble, St. Bernard, Ohio (PDA/1 *Bacillus anthracis* 2004, 2005)
2301. Trent, D. W., Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2004)
2302. Trgovcich, J., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2001)
2303. Tripathi, A., Geo-Centers, Inc., Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2004)
2304. Trock, S., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Influenza A virus 2003)

2305. Tropea, J. E., National Cancer Institute Frederick, Maryland (PDA/1 *Yersinia pestis* 2005)
2306. Tsai, M.-H., National Cancer Institute, National Institutes of Health, Gaithersburg, Maryland (PDA/1 *Rickettsia prowazekii* 2004)
2307. Tsai, P., University of Maryland Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2005)
2308. Tsang, K. W., United States Army Dugway Proving Grounds, Dugway, Utah (MDA/4/5 *Bacillus anthracis* 2003, MDA/4/5 *Yersinia pestis* 2003)
2309. Tsois, R. M., Texas A&M University, College Station, Texas (PDA/1 *Brucella melitensis* 2000, 2002, 2004)
2310. Tucker, A. M., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000, 2004, PDA/1 *Rickettsia prowazekii* 2003)
2311. Tulman, E. R., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut, Storrs, Connecticut (PDA/1 Camelpox virus 2002, PDA/1 Classical swine fever virus 2003, PDA/1 Foot and mouth disease virus 2005, PDA/1 Goatpox virus 2002, PDA/1 Lumpy skin disease virus 2001, PDA/1 Sheeppox virus 2002)
2312. Tumas, D. B., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
2313. Tumpey, T. M., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia/Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/1 "1918 Influenza virus" 2002, 2004, PDA/1 Influenza A virus 2000, 2001, 2002, 2003, 2004, PDA/1 Newcastle disease virus 2003)
2314. Tung, C.-H., Harvard Medical School, Boston, Massachusetts (PDA/1 *Coxiella burnetii* 2002)
2315. Tupin, E. A., Agency for Toxic Substances and Disease Registry, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2316. Turell, M. J., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland/Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2000, 2003, PDA/1 Rift Valley fever virus 2000, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004)
2317. Turnbough Jr., C. L., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2003, 2004)
2318. Turnbull, P. C. B., Naval Medical Research Center, Silver Spring, Maryland (PDA/1 *Bacillus anthracis* 2004)
2319. U'Ren, J. M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004)
2320. Ueda, Masahiro, Oklahoma State University, Stillwater, Oklahoma (PDA/1 Cercopithecine herpesvirus 1 2002)
2321. Uhl, J. R., Mayo Clinic Foundation, Rochester, Minnesota (PDA/1 *Bacillus anthracis* 2002)
2322. Ulaszek, J., United States Food and Drug Administration, Summit-Argo, Illinois (PDA/1 *Clostridium botulinum* 2000)
2323. Ulmer, J. B., Chiron, Emeryville, California (PDA/1 *Bacillus anthracis* 2005)

2324. Ulrich, M. P., Goldbelt Raven, LLC, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
2325. Ulrich, R. G., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003, PDA/1 *Bacillus anthracis* 2005, PDA/1 *Yersinia pestis* 2004)
2326. Ulrich, R.L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia mallei* 2005, PDA/1 *Bacillus anthracis* 2004)
2327. Ulrich, S. K., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Francisella tularensis* 2002)
2328. Umayam, L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2002)
2329. Vagnozzi, A., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York/University of Connecticut, Storrs, Connecticut (PDA/1 Foot and mouth disease virus 2005)
2330. Vajdy, M., Chiron, Emeryville, California (PDA/1 Venezuelan equine encephalitis virus 2003)
2331. Valdes, J. J., United States Army Edgewood Research, Aberdeen Proving Ground, Maryland University of Texas San Antonio, San Antonio, Texas
2332. van de Verg, L. L., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 *Brucella melitensis* 2001, 2002)
2333. van Ert, M. N., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004, 2005)
2334. van Kampen, K. R., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
2335. van Kessel, J. A., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2336. van Kirk, L. S., University of Wyoming, Laramie, Wyoming (PDA/1 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia rickettsii* 2000)
2337. van Rensburg, H. G., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2004)
2338. Vandenberg, J. G., North Carolina State University, Raleigh, North Carolina (PDA/1 *Rickettsia rickettsii* 2003)
2339. Vandenberghe, L. H., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2340. VanderZanden, L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2003, PDA/1 Venezuelan equine encephalitis virus 2003)
2341. Varghees, S., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2002)
2342. Varma-Basil, M., University of Medicine and Dentistry of New Jersey, Newark, New Jersey (PDA/1 *Bacillus anthracis* 2004, PDA/1 *Yersinia pestis* 2004)
2343. Vasconcelos, D., Battelle, Columbus, Ohio (MDA/4/5 *Bacillus anthracis* 2003)

2344. Vaughn, D. W., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
2345. Vazquez, J. A., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
2346. Vazquez, S., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
2347. Vemulapalli, R., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2000, 2001, 2002, 2003)
2348. Venkateswaran, K. S., Lawrence Livermore National Laboratory, Livermore, California (MDA/4/5 *Bacillus anthracis* 2003, 2005, MDA/4/5 *Bacillus globigii* 2005, MDA/4/5 *Yersinia pestis* 2003, 2005)
2349. Vennari, J., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
2350. Venter, J. C., Institute for Biological Energy Alternatives, Rockville, Maryland (PDA/6 Enterobacteria phage ϕ X174 2003)
2351. Verardi, P. H., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2002, 2003)
2352. Vergara, J., University of California, San Francisco, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
2353. Vergez, L. M., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Francisella tularensis* 2005, PDA/1 *Yersinia pestis* 2004)
2354. Versage, J. L., Centers for Disease Control and Prevention, Fort Collins, Colorado (PDA/1 *Francisella tularensis* 2003)
2355. Vetter, S. M., University of Minnesota Medical School, Minneapolis, Minnesota (PDA/1 *Bacillus anthracis* 2005)
2356. Vidal, P., University of California Berkeley, California (PDA/1 *Coccidioides immitis* 2003, PDA/1 *Coccidioides posadasii* 2003)
2357. Vidaver, Anne K., University of Nebraska, Lincoln, Nebraska (PDA/1 *Xylella fastidiosa* 2002)
2358. Villasmil, R., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002)
2359. Villinger, F., Emory University, Atlanta, Georgia (EDA/2 Reston ebolavirus 2001)
2360. Vimr, E. R., University of Illinois at Urbana-Champaign, Urbana, Illinois (PDA/1 *Yersinia pestis* 2002)
2361. Vincent, M. J., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Crimean-Congo hemorrhagic fever virus 2002, EDA/2 Sudan ebolavirus 2004, PDA/1 Rift Valley Fever virus 2002)
2362. Viriyakosol, S., University of California, San Diego, California (PDA/1 *Coccidioides posadasii* 2005)
2363. Vivekanada, J., Brooks Air Force Base, San Antonio, Texas (PDA/1 *Bacillus anthracis* 2002)
2364. Vlasuk, G. P., Corvas International, San Diego, California (EDA/2 Zaire ebolavirus 2003)

2365. Vogel, P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Burkholderia mallei* 2000, PDA/1 Eastern equine encephalitis virus 2005, PDA/1 Venezuelan equine encephalitis virus 2001, PDA/1 *Yersinia pestis* 2002)
2366. Vogler, A. J., Northern Arizona University, Flagstaff, Arizona (EDA/5 *Bacillus anthracis* 2003, PDA/1 *Bacillus anthracis* 2002, PDA/1 *Yersinia pestis* 2004, 2005)
2367. Volokhov, D., Center for Biologics Evaluation and Research, Food and Drug Administration, Kensington, Maryland (PDA/1 *Bacillus anthracis* 2004)
2368. Voss, T., Southern Research Institute, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2004)
2369. Waag, D. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Burkholderia mallei* 2005, MDA/4/5 *Burkholderia pseudomallei* 2003, MDA/4/5 *Coxiella burnetii* 2002, PDA/1 *Burkholderia mallei* 2000, 2001, 2002, PDA/1 *Coxiella burnetii* 2000)
2370. Wagg, J. K., SRI International, Menlo Park, California (PDA/1 *Francisella tularensis* 2005)
2371. Wagner, D. M., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2004, 2005, PDA/1 *Yersinia pestis* 2004, 2005)
2372. Wagner, M. A., Mujer, C., University of Scranton, Scranton, Pennsylvania (PDA/1 *Brucella melitensis* 2002)
2373. Wagoner, K. D., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Lassa virus 2000, EDA/2 Sudan ebolavirus 2004)
2374. Waldmann, T. A., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2000)
2375. Walfield, A. M., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001, 2002)
2376. Walker, B., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2000)
2377. Walker, D. H., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2000, 2001, PDA/1 *Rickettsia rickettsii* 2005)
2378. Walker, G. C., Massachusetts Institute of Technology, Cambridge, Massachusetts (PDA/1 *Brucella melitensis* 2000, 2004)
2379. Walker, J. V. Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2001, 2002, 2003)
2380. Walker, T., Agency for Toxic Substances and Disease Registry, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2381. Waller, L. N., University of South Carolina, Columbia South Carolina (PDA/1 *Bacillus anthracis* 2004)
2382. Walls, L., University of California, San Diego, California (PDA/1 *Coccidioides immitis* 2000)
2383. Walter, M. H., University of Northern Iowa, Cedar Falls, Iowa (PDA/1 *Bacillus anthracis* 2003)
2384. Walter, R. J., Cook County Hospital, Chicago, Illinois (PDA/1 Newcastle disease virus 2001)

2385. Wamwayi, H., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
2386. Wang, C. Y., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001, 2002)
2387. Wang, E., University of Louisville, Louisville, Kentucky (PDA/1 *Bacillus anthracis* 2004)
2388. Wang, E., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003)
2389. Wang, H., University of Connecticut, Storrs, Connecticut (PDA/1 Newcastle disease virus 2002)
2390. Wang, H.-Q., University of Texas Medical Branch, Galveston, Texas (PDA/1 Eastern equine encephalitis virus 2004)
2391. Wang, J., University of Georgia, Athens, GA (EDA/1 Variola virus 2003, PDA/1 Monkeypox virus 2003)
2392. Wang, J., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2393. Wang, J.-G., Bayer Corporation, Clayton, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2001)
2394. Wang, R., Illinois Institute of Technology, Chicago, Illinois (PDA/1 *Bacillus anthracis* 2003)
2395. Wang, S., University of Massachusetts, Worcester, Massachusetts (PDA/1 *Yersinia pestis* 2004)
2396. Wang, T. T., Oakland Research Institute, Oakland, California (PDA/1 *Bacillus anthracis* 2004)
2397. Ward, M. D., North Carolina State University, Raleigh, North Carolina (PDA/1 Newcastle disease virus 2000)
2398. Ward, N. L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Coxiella burnetii* 2003)
2399. Warfield, K. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2004, 2005, EDA/2 Zaire ebolavirus 2003, 2004, 2005)
2400. Warnock, D. W., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coccidioides immitis* 2000)
2401. Warren, R. L., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2000)
2402. Warscheid, B., University of Maryland, Baltimore, Maryland (PDA/1 *Bacillus anthracis* 2003, 2004)
2403. Wasieloski Jr., L. P., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2004)
2404. Watanabe, S., University of Wisconsin, Madison, Wisconsin (EDA/1 “1918 Influenza virus” 2004, EDA/2 Zaire ebolavirus 2003)
2405. Waterston, A. M., BD Technologies, Research Triangle Park, North Carolina (PDA/1 *Bacillus anthracis* 2005)

2406. Watkins, K. L. Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2407. Watowich, S. J., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2001, 2003)
2408. Watson, R. P., University of Maryland, College Park, Maryland (PDA/1 *Yersinia pestis* 2001)
2409. Watts, D. M., Naval Medical Research Center Detachment, NAMRID, Peru/ United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 Venezuelan equine encephalitis virus 2000, 2004)
2410. Waugh, D. S., National Cancer Institute Frederick, Maryland (PDA/1 *Yersinia pestis* 2005)
2411. Weaver, S. C., University of Texas Medical Branch, Galveston, Texas (EDA/2 Guanarito virus 2000, PDA/1 Eastern equine encephalitis virus 2004, PDA/1 Venezuelan equine encephalitis virus 2000, 2001, 2002, 2003, 2004, 2005)
2412. Webb, C. P., Van Andel Research Institute, Grand Rapids, Missouri (PDA/1 *Bacillus anthracis* 2001)
2413. Webb, K., United States Department of Agriculture, Agricultural Research Service, Appalachian Fruit Research Station, Kearneysville, West Virginia (PDA/1 Plum pox virus 2001)
2414. Webby, R. J., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2005)
2415. Webster, R. G., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000, 2002, 2003, 2004, 2005)
2416. Weeks, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2002)
2417. Weiden, M. D., New York University, New York, New York (PDA/1 *Bacillus anthracis* 2004)
2418. Weidman, J. F., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2419. Weigend, S., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
2420. Weil, R., Vitruvius Biosciences, The Woodlands, Texas (PDA/1 *Bacillus anthracis* 2004)
2421. Weinstein, R. S., George Mason University, Fairfax, Virginia (PDA/1 *Bacillus anthracis* 2005)
2422. Weis, C. P., United States Environmental Protection Agency, Denver, Colorado (MDA/4/5 *Bacillus anthracis* 2002)
2423. Weissman, S. M., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
2424. Welch, M. D., University of California, Berkeley, California (PDA/1 *Rickettsia rickettsii* 2004)
2425. Welcher, B. C., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003)

2426. Welkos, S., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (PDA/1 *Bacillus anthracis* 2001, 2002, 2003, 2004, PDA/1 *Yersinia pestis* 2002, 2004)
2427. Wells, J., Southern Research Institute, Frederick, Maryland (PDA/1 *Bacillus anthracis* 2004)
2428. Welte, F. J., University of California, San Francisco, California (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Zaire ebolavirus 2001)
2429. Weltman, G., University of Miami, Miami, Florida (PDA/1 *Yersinia pestis* 2005)
2430. Weltzin, R., Orovax Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000)
2431. Werther, W., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
2432. West, M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Cowpox virus 2002)
2433. Weyant, R. S., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
2434. Whaley, D. N., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2435. Wheeler, K., Oakland Research Institute, Oakland, California (PDA/1 *Bacillus anthracis* 2005)
2436. Whelan, S. P., Harvard Medical School, Boston, Massachusetts (EDA/2 Zaire ebolavirus 2005)
2437. Whistler, Toni, Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 Nipah virus 2003)
2438. Whitbeck, J. C., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2439. Whitcomb, R. F. United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
2440. White, L. J., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Venezuelan equine encephalitis virus 2001)
2441. White, O., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003, PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2442. White, P. S., Los Alamos National Laboratory, Los Alamos, New Mexico (PDA/1 Newcastle disease virus 2004)
2443. White, S. W., St. Jude Children's Research Hospital, Memphis, Tennessee/University of Tennessee, Memphis, Tennessee (PDA/1 *Bacillus anthracis* 2004)
2444. White, T. J., Roche Molecular Systems, Alameda, California (PDA/1 *Coccidioides immitis* 2000, PDA/1 *Coccidioides posadasii* 2000)
2445. Whiteheart, S. W., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2003)

2446. Whitehouse, C. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Crimean-Congo hemorrhagic fever virus 2004)
2447. Whiting, R. C., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Clostridium botulinum* 2005)
2448. Whitlow, V., Vical Inc., San Diego, California (MDA/4/5 *Bacillus anthracis* 2004)
2449. Whitmire, W. M., University of Florida, Gainesville, Florida (PDA/1 *Ehrlichia ruminantium* 2001)
2450. Whitney, A. M., Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002, PDA/1 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2002, PDA/1 *Burkholderia pseudomallei* 2002)
2451. Whitney, A. R., National Institutes of Health, Hamilton, Montana (PDA/1 *Yersinia pestis* 2004)
2452. Whitney, R. W., Stanford University, Stanford, Connecticut (EDA/1 Variola virus 2004)
2453. Whittaker, P., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003)
2454. Whitworth, T., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia rickettsii* 2005)
2455. Wick, C. H., United States Army Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland (PDA/1 *Bacillus anthracis* 2004)
2456. Wiegand, E., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2002, EDA/2 Zaire ebolavirus 2002, PDA/1 *Burkholderia pseudomallei* 2001)
2457. Wild, M. A., Wildlife Research Center, Fort Collins, Colorado (PDA/1 *Brucella melitensis* 2000)
2458. Wildes, M. J., Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
2459. Wilhelmsen, C. L., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Brucella melitensis* 2004, PDA/1 *Burkholderia mallei* 2003, PDA/1 *Coxiella burnetii* 2000)
2460. Will, A. B., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2002, EDA/2 Zaire ebolavirus 2002, 2005)
2461. Williams, A. W., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2002)
2462. Williams, D. D., University of Alabama at Birmingham, Birmingham, Alabama/Auburn University, Auburn, Alabama (PDA/1 *Bacillus anthracis* 2003, 2004)
2463. Williams, E. S., University of Wyoming, Laramie, Wyoming (PDA/1 *Brucella melitensis* 2000, 2002)
2464. Williams, L. E., University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001, 2002, 2004)
2465. Williams, P. L., California Institute for Medical Research, San Jose, California/Kaweah Delta District Hospital, Visalia, California (PDA/1 *Coccidioides immitis* 2000, 2002, PDA/1 *Coccidioides posadasii* 2000)

2466. Williamson, C., University of North Carolina at Chapel Hill, Chapel Hill, North Carolina (PDA/1 Influenza A virus 2000)
2467. Williamson, D. L., State University of New York at Stony Brook, Stony Brook, New York (PDA/1 *Mycoplasma capricolum capripneumoniae* 2004, PDA/1 *Mycoplasma mycoides mycoides* 2004)
2468. Williamson, R. A., Scripps Research Institute, La Jolla, California (PDA/1 Bovine spongiform encephalopathy prion 2002)
2469. Wilson, J. A., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2000, 2001)
2470. Wilson, K. E. Centers for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Bacillus anthracis* 2002)
2471. Wilson, W. C., United States Department of Agriculture, Arthropod-borne Animal Diseases Research Laboratory, Laramie, Wyoming (PDA/1 Bluetongue virus 2000, 2001)
2472. Wimmer, E., State University of New York at Stony Brook, Stony Brook, New York (MDA/6 Poliovirus 2002)
2473. Wimsatt, J., Colorado State University, Fort Collins, Colorado (PDA/1 *Yersinia pestis* 2001)
2474. Winfield, M. D., Washington University, St. Louis, Missouri (PDA/1 *Yersinia pestis* 2005)
2475. Winkler, H. H., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000, PDA/1 *Rickettsia prowazekii* 2003)
2476. Wirtz, R., Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Eastern equine encephalitis virus 2003)
2477. Wise, M. G., Southeast Poultry Research Laboratory, United States Department of Agriculture, Athens, Georgia (PDA/1 Newcastle disease virus 2004, 2005)
2478. Woitanske, M. D., University of Texas San Antonio, San Antonio, Texas (PDA/1 *Coccidioides immitis* 2003)
2479. Wolf, A. M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2480. Wolfe, K. A., University of Virginia, Charlottesville, Virginia (PDA/1 *Bacillus anthracis* 2003)
2481. Wong, A. C. L., University of Wisconsin, Madison, Wisconsin (PDA/1 *Bacillus anthracis* 2004)
2482. Wong, J. D., California Department of Health Services, Berkeley, California (PDA/1 *Francisella tularensis* 2001, PDA/1 *Yersinia pestis* 2000, 2001)
2483. Wood, D. O., University of South Alabama, Mobile, Alabama (EDA/5 *Rickettsia prowazekii* 2000, 2004, PDA/1 *Rickettsia prowazekii* 2003)
2484. Wood, T. K., University of Connecticut, Storrs, Connecticut (PDA/1 *Bacillus anthracis* 2005)
2485. Woodland, D. L., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2000)
2486. Woolcock, P. R., University of California Davis, Davis, California (PDA/1 Influenza A virus 2004, PDA/1 Newcastle disease virus 2004)

2487. Woolfit, A. R., Center for Disease Control and Prevention, Atlanta, Georgia (PDA/1 *Coxiella burnetii* 2004)
2488. Woollen, N., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Lake Victoria marburgvirus 2001, EDA/2 Sudan ebolavirus 2001, EDA/2 Zaire ebolavirus 2001, 2002)
2489. Worsham, P. L., U.S. Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 *Yersinia pestis* 2003, PDA/1 *Yersinia pestis* 2000, 2001, 2002, 2004)
2490. Wright Valderas, M., East Carolina University, Greenville, North Carolina (PDA/1 *Brucella melitensis* 2004)
2491. Wright, N. T., University of Pennsylvania, Philadelphia, Pennsylvania (EDA/2 Zaire ebolavirus 2003)
2492. Wright, R., Louisiana State University, Shreveport, Louisiana (PDA/1 *Brucella melitensis* 2000)
2493. Wrin, T., Genentech, Inc, South San Francisco, California (MDA/4/5 Human respiratory syncytial virus 2001)
2494. Wu, A., Advanced Biosystems, Inc., Manassas, Virginia (PDA/1 *Bacillus anthracis* 2002, 2003)
2495. Wu, Q., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003, 2005)
2496. Wu, T., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2497. Wu, M., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Bacillus anthracis* 2003)
2498. Wulff-Strobel, C. R., University of Kentucky, Lexington, Kentucky (PDA/1 *Yersinia pestis* 2002, 2005)
2499. Wyrobek, A. J., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2004)
2500. Xiao, S.-Y., University of Texas Medical Branch, Galveston, Texas (PDA/1 Japanese encephalitis virus 2002)
2501. Xie, H., Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2004, 2005)
2502. Xu, W., University of Maryland, Baltimore, Maryland (PDA/1 *Rickettsia prowazekii* 2002)
2503. Xu, Y., Texas A&M University, Houston, Texas (PDA/1 *Bacillus anthracis* 2004)
2504. Xue, J., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides posadasii* 2003)
2505. Yamaga, S., Yale University, New Haven, Connecticut (PDA/1 *Yersinia pestis* 2001)
2506. Yamshchikov, V. F. University of Virginia, Charlottesville, Virginia (PDA/1 Japanese encephalitis virus 2001)
2507. Yang, Z.-Y., National Institutes of Health, Bethesda, Maryland/University of Michigan, Ann Arbor, Michigan (EDA/2 Zaire ebolavirus 2000)

2508. Yanoviak, S., University of Texas Medical Branch, Galveston, Texas (PDA/1 Venezuelan equine encephalitis virus 2004)
2509. Yates III, J., Scripps Research Institute, La Jolla, California (PDA/1 *Bacillus anthracis* 2004)
2510. Yaver, D., Novozymes Biotech Inc., Davis, California (PDA/1 *Bacillus anthracis* 2002, 2003)
2511. Ye, J., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001, 2002)
2512. Yeh, H. Y., University of Minnesota, St. Paul, Minnesota (PDA/1 Newcastle disease virus 2002)
2513. Yen, G., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2514. Yergey, A., National Institutes of Health, Bethesda, Maryland (PDA/1 *Bacillus anthracis* 2003)
2515. Yesus, M., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2003)
2516. Yilma, Tilahun D., University of California-Davis, Davis, California (PDA/1 Peste-des-petits-ruminants virus 2003, PDA/1 Rinderpest virus 2002, 2003)
2517. Yokoyama, W. M., Washington University, St. Louis, Missouri (EDA/2 Zaire ebolavirus)
2518. Yokum, T. S., Louisiana State University, Baton Rouge, Louisiana (PDA/1 *Brucella melitensis* 2002)
2519. Yoon, S.-S., University of Cincinnati, Cincinnati, Ohio (PDA/1 *Francisella tularensis* 2004)
2520. York, J., University of Montana, Missoula, Montana (EDA/2 Junín virus 2004)
2521. Young, A. M., Massachusetts Institute of Technology, Lexington, Massachusetts (PDA/1 *Yersinia pestis* 2003)
2522. Young, H. A., National Cancer Institute, Frederick, Maryland (EDA/2 Zaire ebolavirus 2002, 2003, 2004, 2005)
2523. Yu, J., IOMAI, Gaithersburg, Maryland (PDA/1 *Bacillus anthracis* 2004)
2524. Yu, J.-J., Medical College of Ohio, Toledo, Ohio (PDA/1 *Coccidioides immitis* 2000, 2001, 2002, PDA/1 *Coccidioides posadasii* 2003)
2525. Yu, Q., United States Department of Agriculture, Southeast Poultry Research Laboratory, Atlanta Georgia (PDA/1 Newcastle disease virus 2005)
2526. Yu, X. J., University of Texas Medical Branch, Galveston, Texas (PDA/1 *Rickettsia prowazekii* 2000)
2527. Yu, Y., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2528. Yuan, L., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2000, 2002)
2529. Yunus, A. S., University of Maryland, College Park, Maryland (PDA/1 Newcastle disease virus 2004)

2530. Yurawecz, M. P., Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, Maryland (PDA/1 *Bacillus anthracis* 2003) Reid, T. D., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2003)
2531. Yusibov, V., Fraunhofer USA Center for Molecular Biotechnology, Newark, Delaware (PDA/1 *Bacillus anthracis* 2005)
2532. Zafar, N., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2533. Zaffuto, K. M., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2004)
2534. Zahrt, T. C., Medical College of Wisconsin, Milwaukee, Wisconsin (PDA/1 *Francisella tularensis* 2004)
2535. Zakhariyev, V., Argonne National Laboratory, Argonne, Illinois (PDA/1 *Bacillus anthracis* 2004)
2536. Zaki, S. R., Centers for Disease Control and Prevention, Atlanta, Georgia (EDA/2 Zaire ebolavirus 2004, 2005, PDA/1 *Bacillus anthracis* 2003, PDA/1 Influenza A virus 2000, PDA/1 Nipah virus 2000, 2003, PDA/1 *Rickettsia rickettsii* 2003)
2537. Zakowska, D., University of Scranton, Scranton, Pennsylvania (PDA/1 *Bacillus anthracis* 2001, 2004)
2538. Zamboni, D. S., Yale University, New Haven, Connecticut (PDA/1 *Coxiella burnetii* 2003, 2004)
2539. Zaucha, G. M., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (MDA/4/5 Monkeypox virus 2001)
2540. Zelazowska, E. B., Armed Forces Institute of Pathology, Washington, D.C. (PDA/1 *Brucella melitensis* 2003)
2541. Zeng, H., University of Alabama at Birmingham, Birmingham, Alabama (PDA/1 *Bacillus anthracis* 2004)
2542. Zeytun, A., Virginia Polytechnic Institute and State University, Blacksburg, Virginia (PDA/1 *Brucella melitensis* 2001)
2543. Zhang, C. G., Lawrence Livermore National Laboratory, Livermore, California (PDA/1 *Yersinia pestis* 2005)
2544. Zhang, C., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)
2545. Zhang, G. Q., Texas A&M University, College Station, Texas (PDA/1 *Coxiella burnetii* 2003, 2004, 2005)
2546. Zhang, K., University of Michigan, Ann Arbor, Michigan (PDA/1 *Bacillus anthracis* 2004)
2547. Zhang, L., Allergan Inc., Irvine, California (PDA/1 *Clostridium botulinum* 2003)
2548. Zhang, L., University of Texas Medical Branch, Galveston, Texas (MDA/1 Pichinde virus 2001)
2549. Zhang, M. L., United Biomedical, Inc., Hauppauge, New York (PDA/1 Foot and mouth disease virus 2001)
2550. Zhang, M., University of Nebraska, Lincoln, Nebraska (PDA/1 *Francisella tularensis* 2004)

2551. Zhang, T., Thermo Finnigan, San Jose, California (PDA/1 *Rickettsia prowazekii* 2004)
2552. Zhang, Y., St. Jude Children's Research Hospital, Memphis, Tennessee (PDA/1 Influenza A virus 2003)
2553. Zhang, Z.-X., Orovax Inc./ Acambis Inc., Cambridge, Massachusetts (PDA/1 Japanese encephalitis virus 2000, 2001, 2002)
2554. Zhao, B. Walter Reed Army Institute of Research, Silver Spring, Maryland (PDA/1 Japanese encephalitis virus 2001)
2555. Zhao, B. Y., Kansas State University, Manhattan, Kansas (PDA/1 *Xanthomonas oryzae* 2004)
2556. Zhao, K., National Institutes of Health, Bethesda, Maryland (PDA/1 Newcastle disease virus 2004)
2557. Zhao, L., Rutgers - The State University of New Jersey, New Brunswick, New Jersey (PDA/1 *Clostridium botulinum* 2002)
2558. Zhao, Q.-Z., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 Foot and mouth disease virus 2003)
2559. Zhao, S., National Cancer Institute, National Institutes of Health, Gaithersburg, Maryland (PDA/1 *Rickettsia prowazekii* 2003, 2004)
2560. Zhao, Y., United States Department of Agriculture, Agricultural Research Service, Beltsville, Maryland (PDA/1 Newcastle disease virus 2005)
2561. Zheng, H., Mount Sinai School of Medicine, New York, New York (EDA/1 "1918 Influenza virus" 2001, PDA/1 Newcastle disease virus 2001)
2562. Zhou, E.-M., Iowa State University, Ames, Iowa (PDA/1 Foot and mouth disease virus 2004)
2563. Zhou, H., Iowa State University, Ames, Iowa (PDA/1 *Brucella melitensis* 2001)
2564. Zhou, L., Institute for Genomic Research, Rockville, Maryland (PDA/1 *Burkholderia mallei* 2004, PDA/1 *Burkholderia pseudomallei* 2004)
2565. Zhou, S. S., University of California-Davis, Davis, California (PDA/1 Cercopithecine herpesvirus 1 2003)
2566. Zhou, S., University of Wisconsin, Madison, Wisconsin (PDA/1 *Yersinia pestis* 2002)
2567. Zhou, Y., University of Massachusetts Dartmouth, North Dartmouth, Massachusetts (PDA/1 *Clostridium botulinum* 2004)
2568. Zhu, Li, Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2003)
2569. Zinser, G., Northern Arizona University, Flagstaff, Arizona (PDA/1 *Bacillus anthracis* 2000)
2570. Zollinger, W. D., Walter Reed Army Institute of Research, Washington, D.C. (PDA/1 *Brucella melitensis* 2002)
2571. Zsak, A., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2005)
2572. Zsak, L., Plum Island Animal Disease Center, United States Department of Agriculture, Greenport, New York (PDA/1 African swine fever virus 2000, 2001, 2002,

- 2004, 2005, PDA/1 Camelpox virus 2002, PDA/1 Goatpox virus 2002, PDA/1 Lumpy skin disease virus 2001, 2003, PDA/1 Sheeppox virus 2002)
2573. Zurkuhlen, Holley, Georgia State University, Atlanta, Georgia (PDA/1 Cercopithecine herpesvirus 1 2002, 2003)
2574. Zwiers, S. H., United States Army Medical Research Institute of Infectious Diseases, Fort Detrick, Maryland (EDA/2 Zaire ebolavirus 2003)

CONCLUSIONS

Specific:

Qualitative Assessment:

Overall, the proposed oversight system (“CISSM Controlling Dangerous Pathogens Project”) would have had little impact on overall US research activities had the system existed between 2000 and 2005

1. The majority (>99%) of US research publications related to unlisted agents (several thousand) and related agents (appr. 1,725) would not have been affected at all by the proposed system
2. However, the oversight system would have had some impact on research with listed agents (appr. 56), although mostly on a local (PDA/LPRC), and NOT on a national (MDA/NPRA) or international (EDA/IPRA) level
3. The proposed oversight system would have had considerable impact on research activities with “eradicated” (2) and BSL-4 agents (15), and on research using aerosols, most of which, however, is conducted at few facilities by few people
4. Only a handful of published US research projects of 2000-2005 fall into the created Dangerous Activity subcategories other than PDA/1, PDA/6, MDA/6, or EDA/2, emphasizing that the proposed oversight system would mostly affect individual projects only

5. **With the exception of research projects performed at US military institutions, which may be considered as biodefense projects by definition, almost no project falling under the oversight system was a definite biodefense project (although, after 9/11/2001, many research papers refer to the relevance to biodefense of the results presented)**
6. **Almost all US research classified as a Dangerous Activity under the proposed oversight system was obviously performed with “good” intentions with public health aspects being addressed. Few “controversial” US papers, *e.g.* the creation of antibiotic-resistant poxviruses and certain aerosol challenge studies, were identified by the author. The author also has the impression that, considering the overall number of US research publications on a particular agent, most “dangerous” activities are performed with agents that are classified as “dangerous”.**

Quantitative Assessment:

Had the proposed oversight system existed between 2000 and mid-2005, a total of at least 310 US facilities and 2,574 US researchers would have been affected (at least 231 US facilities and 2,119 US researchers were involved in **PDA; 14 US facilities and 133 US researchers were involved in **MDA**; 12 US facilities and 185 US researchers were involved in **EDA**; and 53 US facilities and 137 US researchers were involved in **PDA + MDA**, **PDA + EDA**, **MDA + EDA**, or **PDA + MDA + EDA**). Of all the facilities affected, at least 54 were industrial/commercial.**

General Observations:

- 1. Screening for “US publications” was a rather simple albeit very time-consuming process because the majority of these publications are listed in the most commonly used and openly accessible databases; and because the author had full-text access to >75% of these articles. Screening “foreign” publications would be much harder and impossible without visiting libraries in foreign countries. This is because many foreign publications are still published in foreign languages in journals with low impact factor (which, in turn, are not listed in common electronic databases), and because full-text access is almost never provided**
- 2. Most of the “US publications” reviewed for this working paper fit neatly into the different Dangerous Activity subcategories defined by the CISSM Controlling Dangerous Pathogens Project. The author did not find publications that would have to be defined borderline between the three major categories, PDA, MDA, or EDA. However, several publications fit into several subcategories (e.g. publications that addressed several select agents at the same time)**
- 3. The number of publications addressing a given agent differs dramatically from country to country and most often directly reflects the endemicity of this agent. For example, many “exotic” livestock pathogens, for which almost no “US” publications were identified, are heavily researched in other countries in which these pathogens are not “exotic” but common pests**

4. The number of “dubious” research papers, *i.e.* papers that report experiments that could be considered offensive bioweapons research or at least borderline/dual-use differs dramatically from country to country
5. Most agents are tightly associated with a particular kind of research (*e.g.* most research employing lymphocytic choriomeningitis virus is immunology-related; most research employing bacilli is related to the identification of novel enzymes; most research employing listed agents infecting animals are epidemiological and related to livestock industry, most research on avian influenzaviruses and brucellae is vaccine-related etc.)
6. There was no obvious difference in the amount of publications fitting the various subcategories prior and post 9/11. An overall slight increase in publications was noted, probably reminiscent of the overall growing research activities in the US. However, notable exceptions are *Bacillus anthracis*, *Francisella tularensis*, and *Yersinia pestis*, all of which have substantially been more researched post 9/11 compared to pre 9/11; and *Brucella melitensis*, on which considerably less papers have been published after 9/11
7. Most institutions/people affected were either associated with one particular listed or non-listed agent only and work on it consistently over the years, employing the same principal researchers; or were involved in particular projects only. However, some institutions (CDC, UC Davis, UTMB, USAMRIID etc.) were involved in work with many listed and related agents and published numerous papers over the years

- 8. The number of collaborations, *i.e.* the number of articles written by authors from several different institutions (all from the US or from US and from other countries), seems to be increasing by the year**

Observed Shortcomings of the Oversight System:

- 1. Research on emerging or novel agents might not be covered by the system as long as the agents are not classified as select agents/BSL-4 agents (e.g., research on severe acute respiratory syndrome coronavirus is only covered by the **PDA** categories (unlisted agent) at the moment)**
- 2. The term “exotic” in the US Select Agent list needs to be specified for the system. Likewise, the terminus “large quantities” for BSL-4 agents needs to be specified**
- 3. A definition of “*de novo* synthesis” needs to be established**
- 4. The problem of changing taxonomy of agents needs to be addressed**
- 5. Some obvious dual-use articles would only fall into the **PDA/1** category (e.g. the challenge of irradiated animals with listed agents)**