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Library Award for Undergraduate Research

 I chose my research topic in accordance with the requirements of the final paper assignment for BSST332 Practice of Terrorism Studies. The final paper assignment asked for an in-depth exploration of a subject pertinent to each student's required internship. I interned at the National Consortium for the Study of Terrorism and Responses to Terrorism (START) on the campus of the University of Maryland, College Park in the Special Projects Division. I had worked at Special Projects for about eight months before being assigned to the Nuclear Security Team in late-August last year. In the Nuclear Security Team, I worked with three other interns to create and direct a new project for the US Department of Homeland Security's Domestic Nuclear Detection Office (DNDO) assessing the security of nuclear reactors and facilities in Western Europe. In addition to data provided by the International Atomic Energy Association's PRIS database, we also utilized facility specific documents, sometimes in foreign languages, in order to find the variables we needed. The one of the most important components of the project, and the one that captured my imagination, was the use of open source satellite imagery intelligence from programs like Google Earth, Wikimapia, and Bing's Bird's Eye View feature which allowed us to save 45° photographs taken from various perspectives in low-flying aircraft. Navigating and experimenting with a virtual space rather than processing page after page of text was new and exciting for me.

 When I begin a project, I always start by searching key words in the research port at the library website. For this paper, "satellite imagery," "satellite intelligence," "surveillance," "open source," "military," "terrorism," "nuclear proliferation," "nuclear security," and "geospatial," were some of the key terms that led me to the sources listed in my bibliography. In selecting sources, I start with the most broad works, usually books, that cover the topic in general in order to form a structure, then I go on to find more specific angles on the topic with scholarly journals and articles. I only use sources that are from or published by credible institutions like university publishing groups or journal databases. Reading the background information of each author and their affiliations helps me select the lens with which I read their works. With regards to the types of sources, I am open to all forms. However, I like to begin with as many books on my topic as I can possibly acquire from the library. I prefer having a physical text to read through so that I can take notes and go through with my pen. Additionally, books provide very detailed sections and perspectives with a variety of sources conveniently listed at the end. The book indexes are also quite helpful in finding only the most useful information. The detailed and comprehensive nature of some books helps the researcher better frame the project's argument. For my project, I chose Pat Norris' books *Watching Earth from Space: How Surveillance Helps Us – and Harms Us* and *Spies in the Sky: Surveillance Satellites in War and Peace* because it provided much of the background information and essentials of the current debate surrounding the use of satellite imagery in the intelligence community and security sector in general. With the more nuanced pieces from anthology books from fields such as the history of satellite surveillance technology,

nuclear non-proliferation, nuclear information management, UN Peacekeeping, and US imagery intelligence, I could introduce other ideas on the topic and specific uses for satellite imagery that scholars have introduced. These sources provided much more specialized perspectives on the topic.

After reading through books, I turned to scholarly articles on the subject pertaining to the geopolitical dimension of satellite imagery on North Korea and possible uses of surveillance satellites in the military. These articles, in conjunction with the books from the library, and my personal experience at START helped me further situate my arguments, namely, that the wide availability of satellite imagery poses a threat to national security and private privacy, that these threats can be mitigated with careful and creative safeguards that strengthen resilience against eyes in the sky, and that governments would be wise to strengthen satellite imagery intelligence and the understanding of the technology, especially against the threat of terrorism and nuclear threats. As this paper was due at the end of the semester, I did not seek assistance from anyone else, but I was inspired by my internship supervisor as well as the three other interns I worked with as we shaped and transformed the Nuclear Security Project from the ground up. This experience and my interaction with my colleagues opened my eyes to the incredible capabilities of satellite imagery and the problems that face the technology today.

During the research process, I was delighted to discover a link between science and technology, and my studies in global terrorism and military affairs within the field of political and behavioral sciences. In presenting my project and internship to my BSST332 classmates, I got a taste of providing short, quick briefings that are so crucial to work in the government. Together with my internship experience in the Nuclear Security Team and my studies as a Germanic Studies Minor, this project has helped foster an interest in pursuing a career in security and intelligence in German speaking countries. Next fall, I am scheduled to study abroad in Berlin, Germany to close my undergraduate career. While writing the paper, I attended a University of Maryland Career Fair and spoke to a representative from the US Defense Intelligence Agency about my research and experience. He pointed me to possible opportunities in the National Geospatial-Intelligence Agency, the combat support team that helped provide geospatial information on Operation Neptune Spear which resulted in the takedown of Osama Bin Laden. After graduation, I plan to work toward further studies at the Johns Hopkins School of Advanced International Studies in Washington D.C. with a focus in Strategic Studies.