



BACKGROUND

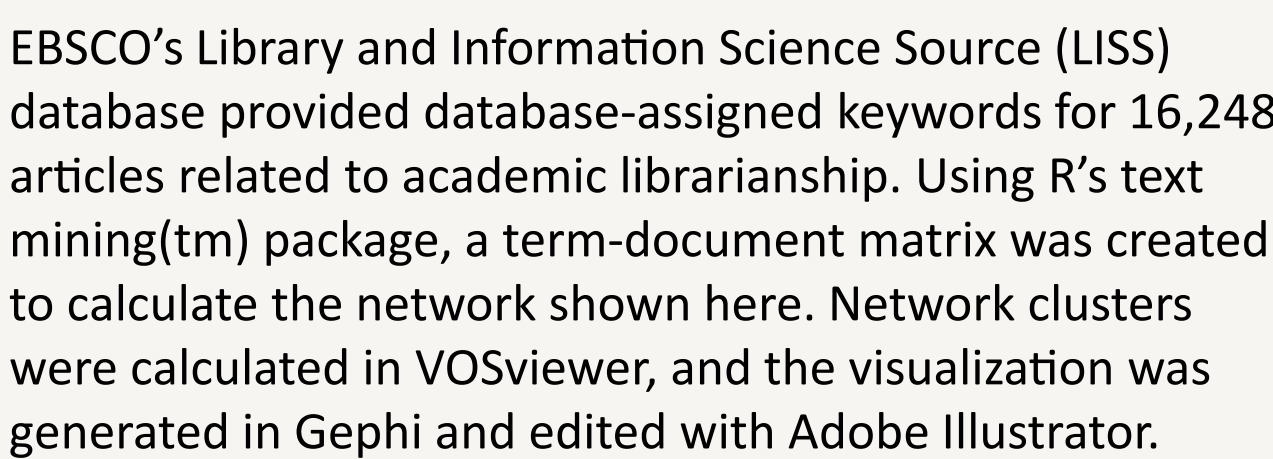
from two separate disciplines—academic librarianship and translational science research—attempt to answer the following research questions:

1. Can the co-occurrence of thesaurus terms be used to map the research landscape in a specific discipline?
2. How is the research focus of a specific institution within the University of Maryland different from the focus of the broader collection of documents?
3. How can other librarians who practice bibliometrics implement these techniques into their portfolio of services?

This research explores potential use cases for a more narrative style of bibliometric analysis and outlines six guidelines for librarians and others who practice bibliometrics as a service for researchers and managers. Case studies

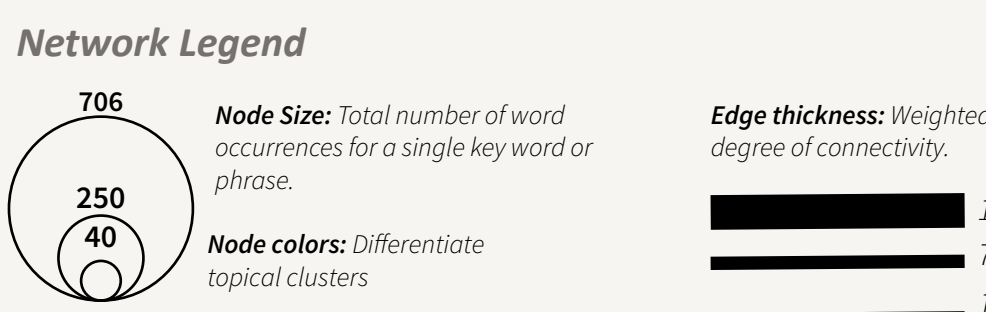
NETWORK VISUALIZATIONS

Co-occurrence of the most commonly assigned keywords related to academic librarianship, 2008-2019

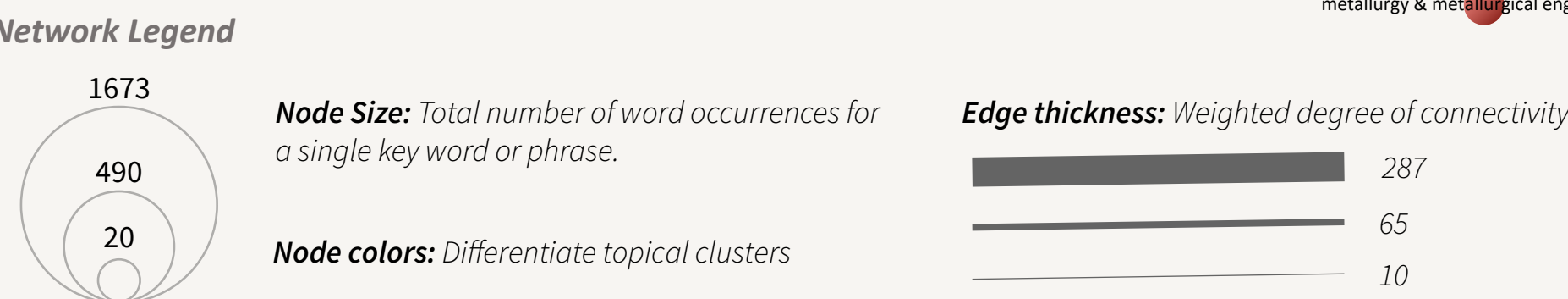


Roughly a dozen very common terms (e.g., libraries, academic librarians, etc.) were removed from the final visualization. Six major clusters reveal some surprising connections among the sub-disciplines within academic librarianship.

Digital and technical services are scattered throughout all six clusters. Scholarly publishing and digitization is split between two clusters (deep green and light blue). Professional associations and conferences (dark blue) are linked with public libraries, while many of the terms associated with staffing and development are in a separate (brown) cluster. Information literacy, the largest node in the network, anchors a cluster (light green) that is strongly linked to library instruction-related topics.



Research area co-occurrence in translational science, 2019



Translational research is a form of applied research that aims to transform basic scientific research into clinically useful results. A degree program in Translational Life Science & Technology (TLST) was launched at the Universities at Shady Grove in late 2018, the first of its kind in the United States.

In order to understand the research areas in this emerging field and how they relate to one another, a search in Web of Science for all records containing the term “translational” as a title, keyword, or abstract terms was conducted for 2019. 117 subject categories for 9,698 results were analyzed and visualized using the same tools and software that were outlined in the previous example. A similar analysis with author-designated keywords was conducted as well.

Seven clusters illustrate the disciplinary structure of translational research. Most records connect pure and applied science, with significant groups of papers connected to applied disciplines such as engineering, materials science, and computer science. Dozens of medical research areas are also represented.

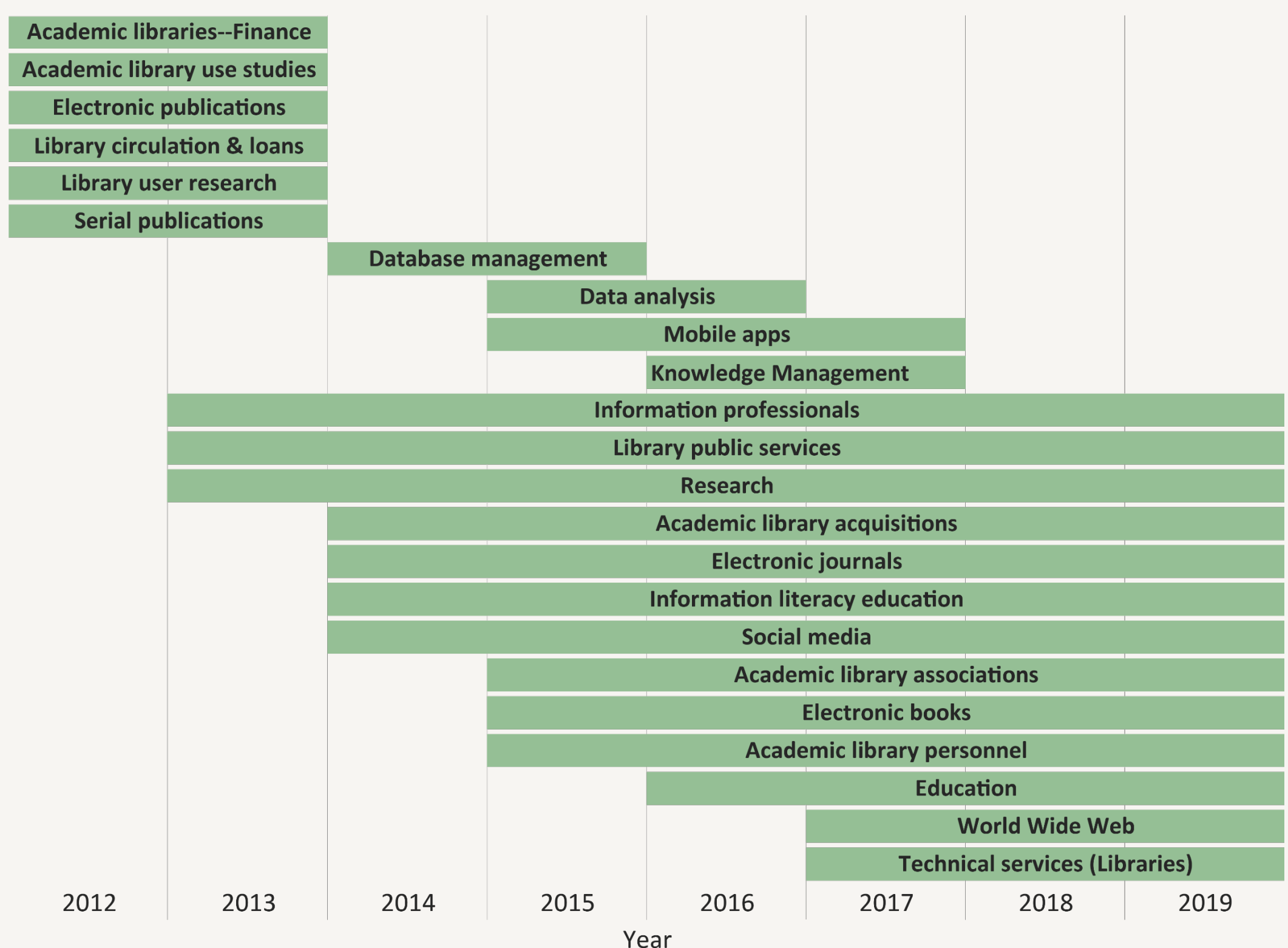
KEYWORD ANALYSES

Comparing commonly assigned keywords in translational science research, 2019

Both NIH and General Paper Collection		NIH Collection Only	General Collection only
Biochemistry & Molecular Biology	Research & Experimental Medicine	Public, Environmental & Occupational Health	Engineering
Cell Biology	Genetics & Heredity	Psychiatry	Physics
Chemistry	Biotechnology & Applied Microbiology	Hematology	Materials Science
Neurosciences & Neurology	Immunology	Virology	Ophthalmology
Pharmacology & Pharmacy	Surgery	Infectious Diseases	Plant Sciences
Oncology	Cardiovascular System & Cardiology	Transplantation	Endocrinology & Metabolism
Science & Technology - Other Topics		Computer Science	Life Sciences & Biomedicine - Other Topics

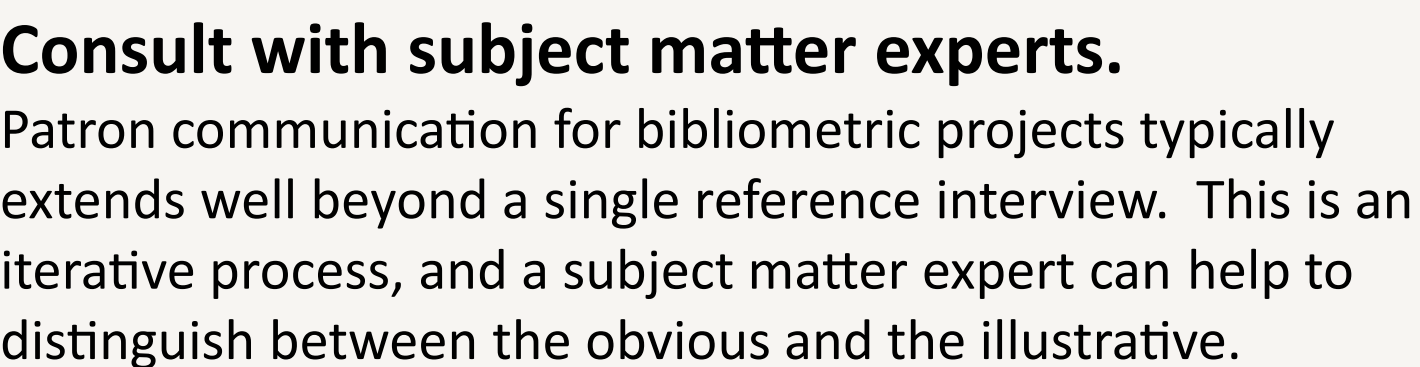
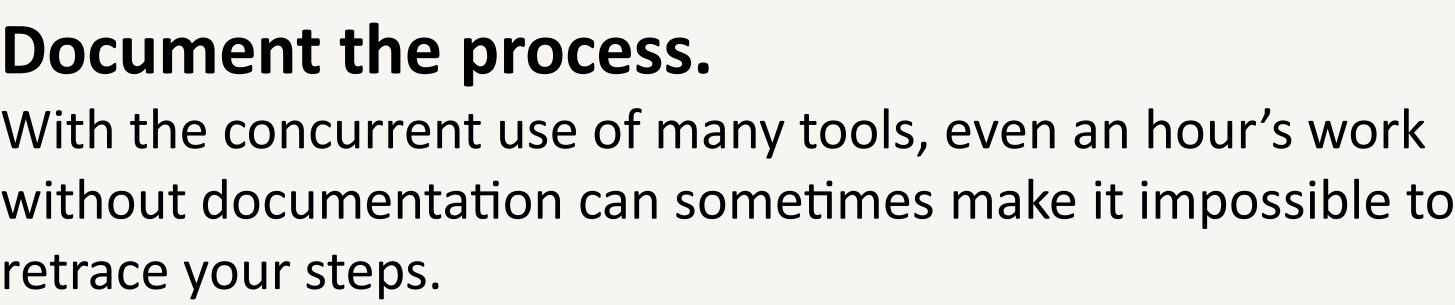
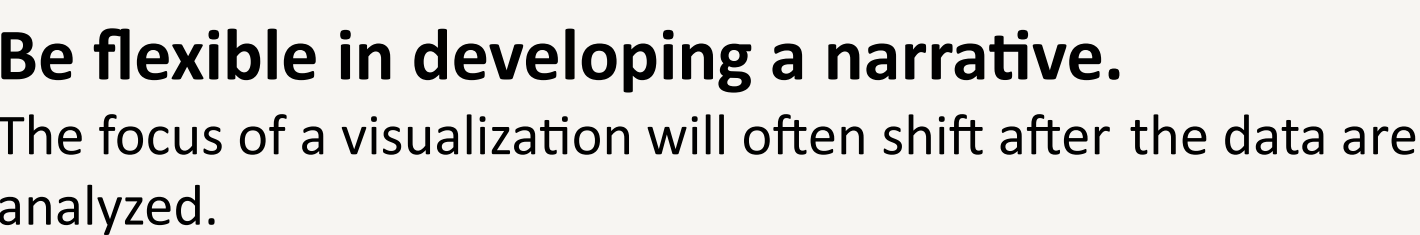
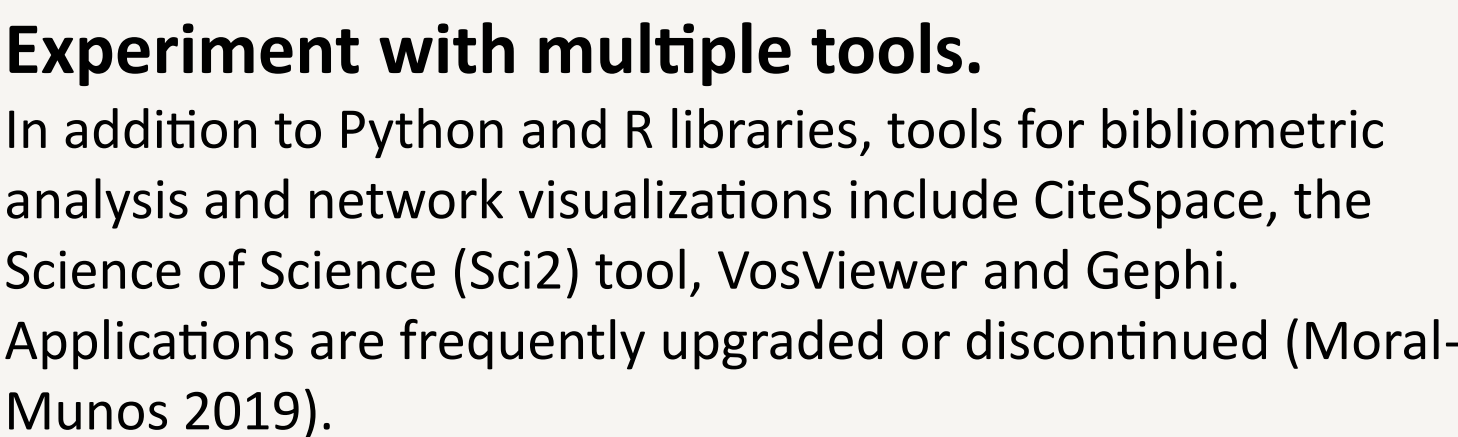
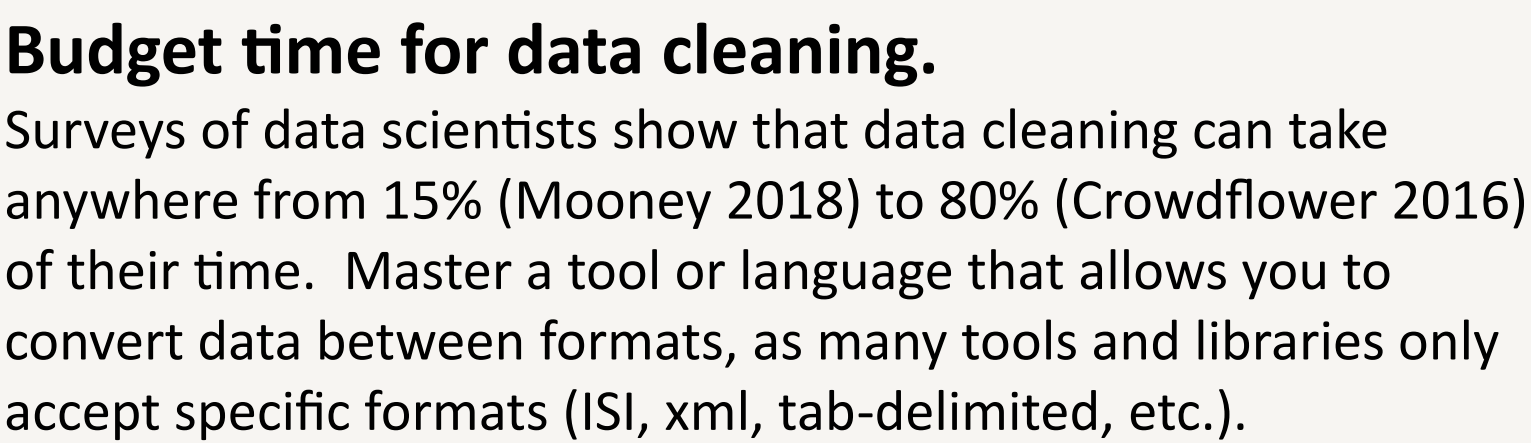
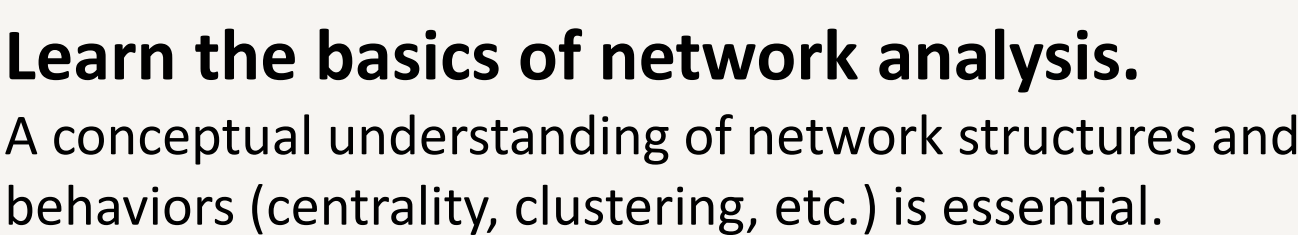
This table shows the most commonly assigned subject categories for translational research in both the full result set and among the 227 records that listed the National Institutes of Health (NIH) as an author affiliation. NIH was chosen here as a proxy for the types of research activity occurring in Montgomery County, MD; every TLST student at Shady Grove must complete a professional internship and project-based research experience in the region. Roughly two-thirds of the subject categories assigned to NIH authors are broadly used in the general collection.

Keyword burst detection in academic librarianship, 2012-2019



Burst detection algorithms identify periods of increased activity over time. The Sci2 tool uses Kleinberg's burst detection algorithm to identify any keywords in the academic library paper set that occurred with more frequency than would be statistically expected for a given year. The algorithm identified 156 instances of increased keyword usage from 2012-2019. The twenty-three most frequently used terms are pictured at left. Along with the expected technology-related terms, there are a few surprises on this list, including terms related to library associations and public services.

PRELIMINARY GUIDELINES FOR PRACTITIONERS



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