Creating a Publishing Legacy: Managing Your Digital Profile

Julia Gelfand
Applied Sciences Librarian & Bibliographer
University of California, Irvine Libraries, Irvine, CA

Laura Bowering Mullen
Behavioral Sciences Librarian; Open Access Specialist
Rutgers University Library of Science and Medicine, Piscataway, N.J.
Introduction; why we’re here (and how academic research librarians can assist you)

• Role of science librarian
• Guidance/assistance
• Familiar with the literature – both commercial and OA
  • Indexing sources
• Expertise in vetting publishers/sources; data management
  • Scholarly, academic, commercial, open
• Author responsibilities
  • Self-archiving practices
Building your reputation strategically

• Component parts:
  • Establishing a research identify
  • Creating a legacy for your reputation
  • Knowing your publishing choices

• Caveats or influences
  • Realizing disciplinary differences – also trans/cross/inter/multi-disciplinary/emerging fields
  • Publishing culture & choices
    • Retaining copyright
  • Sharing data
  • Institutional culture
  • Global reach
Establish your research identity (and do it early)

• Researchers at all levels need to have a researcher ID in order to disambiguate (and distinguish) themselves from every other person that has a similar name in order to attach their identity to all research outputs and systems (for publications, grant applications, manuscript submission systems, patent applications, research data management, citation systems, etc.

• ORCID (Open, non-profit, community-driven) is an initiative that creates and maintains a registry of unique researcher identifiers. Other systems have now coalesced around ORCID, making it necessary for every researcher.

• ORCID also supports automated linkages between you and your professional activities ensuring that your work is recognized.

• You can get one right here if you don’t have one already; it takes only 30 seconds or so. Go to https://orcid.org/register
Choosing the publication outlet for your work: where to submit

• Consider optimal impact of your work; everything is about impact (but not necessarily Impact Factor..)

• Placing your work for impact will mean considering maximum readership, citations, visibility.

• (Caveat: be honest with yourself about the potential for any particular paper, get advice from mentors, advisers, colleagues)

• Tools in this arena: Journal Citation Reports (what are the highest impact factor journals in your field?), Scopus Journal Analyzer, but especially consultation with faculty advisers or leaders in the field.

• Know the subject databases in your field (libraries usually have subject lists), and don’t only rely on Google Scholar. The subject databases vet the journals they include for quality. Role of peer review.
Open Access: Considering gold and green

• Don’t worry about “business model” as a journal’s status does not depend on its business model, but more on indicators of quality and uptake in the field.

• Beware of solicitations for non-credible (predatory) journal outlets; always investigate very carefully any journal (or new conference) that is not familiar to you;

• ALWAYS make your work open access; this usually means self-archiving an earlier version of your article (such as your author final version). Use your institutional repository if possible for self-archiving. Learn how to submit.

• Many libraries have subject specialists/liaisons that are available to talk to you about all of the various tools that you can use to ascertain quality of journals. Reach out to your librarians anytime!
Federal funder mandates rolling out now; noncompliance jeopardizes future funding

• The White House Directive of 2013 means not only publications, but in some cases, also the data generated from taxpayer funded research will need to be made open access. Many are familiar with NIH, but new funding mandates will now involve researchers in many new fields. NSF issuing new directives beginning in late January 2016; many federal agencies moving in this direction

• This involves any agency with more than 100 million dollars R&D expenditure and greatly expands the number of researchers (and institutions) that will have to comply with federal mandates

• You will need to make sure you are able to make your work open access, and you may need to submit data management plans

• Your library can often advise on these matters, and some universities are able to archive the data and publications that results from your research in their institutional repository. Most agencies will want to see institutional compliance (not just PI, but institution)
Institutional Open Access Policies; compliance is necessary (and benefits you!)

• Open access increases research impact (studies at http://sparceurope.org/oaca)
• Rutgers and the University of California system (our institutions) have similar “Harvard-style” open access policies.
• Deposit your work at the time of acceptance for publication into your institutional repository and watch usage statistics show global readership
• Link your publication with supplementary (or even underlying) data when possible through your institution.
• Redundancy is fine; many services are out there, but your institution is likely going to ensure access over time and will remain non-profit. Think of your institution first, even if you use other scholarly networking services as a complement.
Tracking your impact

• Building your reputation – academe vs industry vs government

• Sharing & protecting intellectual outputs widely –
  • Dissertation, papers, research results, patents
  • Progression through the ranks – graduate student, post-doc, tenure track faculty, consultant, researcher, mentor

• Role of repositories - multiple
  • Institutional
  • Subject or Disciplinary

• Relationship to source of grants – best practices
  • Seeking renewals, multiple submissions
Tools to track impact – differences abound – comparing & contrasting

- Subject Guides (most libraries create & maintain them)
- Commercial tools (subscription & free)
  - Web of Science - JCR
  - Scopus - SJR
  - Google Scholar
- Repository discovery & outputs
  - Usage data/downloads
- Special data points
  - H-Index
  - Highly cited lists generated by Thomson Reuters
- Altmetrics
Ongoing awareness and marketing strategy – establishing a following

• Conducting an annual check up – updating information
• Practice Self-Archiving
• Scholarly networking services
  • Linked-In personas
  • Academia.edu – not monetized for future/venture capitalism
• Being engaged online – maintain websites
  • Social media
  • Tweeting articles and observations
• Watch the ego – creating self-awareness not self-promotion
• Good for & compatible with academic review – maintain CV, websites, etc
Questions?

Additional references & information captured at:
http://guides.lib.uci.edu/researchimpact-metrics

Thank you; please contact us at....

• Julia Gelfand (jgelfand@uci.edu)
• Laura Bowering Mullen (lbmullen@rci.rutgers.edu)
Flipping a Science Information Literacy Course

Sarah H. Jeong
AAAS National Meeting
February 14, 2016
Overview

• Institutional Background
• Pre-course Design
• Course Redesign
• Flipped Course Model
• Summary
• Located in Winston-Salem, NC (since 1956)
• Private, co-ed liberal arts university
• Traditional campus setting, with the majority of undergraduates living on campus

• Medical School
• Business School
• Law School
• Master’s & Ph.D. programs in the sciences
• 4,867 undergraduates
• 2,921 graduate students (2014-2015)
LIB100 Introductory Information Literacy Course

• Developed in 2003 to provide basic instruction on using databases for research
• 1.5 hour elective course
• 12 sections in Fall and 11 sections in Spring
• 15-18 students per class
• More demand than we can supply
• 2004 - 2007  LIB100 course taught
• 2007  LIB220 Science course developed and approved
• 2008 - present  LIB220 course taught

• Fall 2013  Fundamentals of Bioinformatics course
• Spring 2014  A Librarian’s Guide to NCBI course
• Spring 2015  WFU Course Redesign Program
• Summer-Fall 2015  WFU STEP Grant
LIB 220 Science Research Sources & Strategies

LIB220 students
Spring 2013
Flipped Course Model
• Used Revised Bloom’s Taxonomy to redesign learning outcomes
• Learning outcomes mapped to assessment
• Incorporated flipped pedagogy
We do not learn from experience...we learn from reflecting on experience.

John Dewey
• Explore a couple areas of interest and find a health/science news article
• What about this is interesting to you?
• What would you like to know more about?

• Watch science/medical database video tutorials
• 1st attempt at searching
• Take a screenshot of your search strategy & results in 2 science/medical databases
• Take screenshots throughout the refinement process
• Document evolution of search strategy

Learning Outcome
Compare current approach to research with past approach

• Final Project
  – Poster Presentation
• Revisit blog posts from previous weeks & share how they have grown at the end of the course
• LIB220 Course Blog
• VoiceThread on Evidence-Based Medicine
“Metacognition is the act of thinking about about one’s own thinking, which is the underlying strategy behind reflective practice.”

-Char Booth
Special Thanks

Kristi Verbeke, Ph.D.
Associate Director, WFU Teaching & Learning Center

Sarah McCorkle, M.Ed.
WFU Instructional Technology Specialist

References
Image: www.flickr.com/photos/stanzim/22460283617
Thank you!

Sarah H. Jeong
Research & Instruction Librarian – Science
jeongsh@wfu.edu
Embedding Information Seeking in the Curriculum

INTRODUCTION

Information seeking is an essential skill for STEM students and closely relates to other essential "soft skills" like critical thinking, decision making, and communication. Libraries are uniquely prepared to address this need but, because of time limitations, frequently struggle for opportunities to meaningfully teach information seeking skills. In an effort to address this challenge across all disciplines, a group of librarians completed a syllabi-based review of the undergraduate curriculum at the University of Houston. Reviewing the syllabi for each course in relation to seven information literacy skill areas allowed the group to identify and prioritize skill gaps on a large scale. By combining that information with course plans those gaps can be addressed more strategically on a program level.

METHODS

1. Get syllabi from syllabi database
2. Relate assignments and outcomes to information skills
3. Create a flow chart for each program using course plans
4. Identify target courses
5. Review details of target courses
6. Review past information related instruction

RESULTS

TARGET COURSES

| CHEM 1303 composition | ENGL 1304 composition | ENGL 2304 communication | BIOE 4335 capstone | BIOE 4336 capstone |

CHALLENGES

- current structure supports only lower level skill development
- instruction for low level courses can’t accommodate more advanced skills
- project structure of capstones courses leads to wide variation in skill needs
- time for instruction is more limited in the project-based capstone

STRATEGY

- gather more information about capstone projects, and prioritize skill gaps
- identity and build online tools for teaching higher priority skills
- ensure that capstone students know they can get one-on-one help

TARGET COURSES

| ENGL 1303 composition | ENGL 1304 composition | ENGL 2304 composition | CHEE 4121 capstone | CHEE 4122 capstone |

CHALLENGES

- inconsistent opportunities for upper level instruction
- instruction in the capstone courses not possible
- skills taught in other upper level courses don’t match requirements well

STRATEGY

- ensure that capstone students know they can get one-on-one help
- stop teaching basic search strategy and sources in process courses
- start teaching evaluation and research methods in process courses

TARGET COURSES

| ENGL 1303 composition | ENGL 1304 composition | CHEM 3119 analytical lab | CHEM 4229 instruments lab |

CHALLENGES

- all opportunities for upper level skill development are labs
- instruction in labs is logistically difficult
- BS and BA programs have different requirements, with the BA program having fewer opportunities

STRATEGY

- look for alternative target courses including electives
- start conversations with lab coordinators about information skills in the lab
- start conversations with those doing curriculum development about skill needs

SKILL REQUIREMENTS AND INSTRUCTION

| ENGL 1303 | ENGL 1304 | ENGL 2304 | CHEE 4121 | CHEE 4122 |

Required:

- Basic Search Strategy
- Advanced Search Strategy
- Basic Sources
- Advanced Sources
- Research Methods
- Evaluation
- Organizing and Citing

Not Required:

- Basic Search Strategy
- Advanced Search Strategy
- Basic Sources
- Advanced Sources
- Research Methods
- Evaluation
- Organizing and Citing

Acknowledgements

Sergey Shevkoplyas, Yasmin Akay, Ting Chen, and Navin Varadarajan provided additional information on their courses. Jon Worstell worked collaboratively on changes based on this project.

Conclusions

The information gathered through this project has helped to highlight areas for improvement. The next step is to communicate with faculty, whether about taking advantage of an opportunity, a direction change, or about need to create a place for information seeking. Online learning techniques are likely to be vital to teaching information seeking.

Acknowledgments

Library

Katy Creahan, Christina Gole, and the Instruction Teams played the syllabi review process.

The Instruction Teams provided feedback and support during this project.

Faculty

Sergey Shevkoplyas, Trammi Alar, Ting Chen, and Nona Varadarajan provided additional information on their courses.

Jen Waddell worked collaboratively on changes based on the project.
1. **Measuring the impact of research** (beyond citation counts or altmetrics).
Use any and all available resources to measure impact, with a variety of data sources: WoS, Scopus, Google Scholar, PubMed, Academic Analytics, LibGuides, Thomson Reuter’s Insights. Interdepartmental collaboration is important, e.g., Grants office, sponsored programs, community engagement, to discover the impact of funded projects and funding possibilities.
Suggest: talk to researchers and faculty to discover how they can best use impact data and what they need. Create custom impact products to serve those needs.

2. **Promoting the value of science literacy & scientific thinking**
Traditional info lit of “how to search” is becoming evaluation of sources, scientifically; where does the info come from, what is their authority (and how important is that is their discipline?), are there issues with the science (e.g., retraction of published findings). Finding ways to make the link between students’ scientific topic and something personal, so they internalize new information. Helping students understand that undergraduate papers (e.g., honors’ theses) become accessible worldwide in IRs; they are “staking their reputation” on this work in a way not relevant a generation ago. Understanding that “evidence-based” thinking is essential for a healthy democracy, where citizens’ votes are not guided simply by emotional issues.

3. **Supporting scientists in their efforts to engage with general public/communicate to the public**
Library sponsored book discussions, with faculty and students, of science for the general reader (compelling and timely science topics). Libraries serve as crossroads in the institution; schedule events to bring people together (training, talks, book signing and book sales, movies, exhibits); host book clubs. Be a lively, engaging center for conversation and learning.

4. **Open education resources**

<table>
<thead>
<tr>
<th>Oercommons.org</th>
<th><a href="http://www.oercommons.org/community/rice-university-connexions">www.oercommons.org/community/rice-university-connexions</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Openstaxcollege.org</td>
<td>OER grants for faculty</td>
</tr>
<tr>
<td>iTunes University</td>
<td>Univ Minn offers stipend to review open textbooks</td>
</tr>
<tr>
<td>MOOCs</td>
<td>Direct faculty to already subscribed services</td>
</tr>
</tbody>
</table>

Issues to consider: Land Grant Univ obligations; Copyright questions
Course-specific LibGuides can point to open resources, esp. useful for study abroad

5. **Data visualization / data analysis** (in libraries or by librarians)
   a) Basic visual design, i.e. labeling graphs, differentiating columns; librarians are involved in several ways, from assisting students/faculty with assignments and teaching tools, to helping researchers communicate research results.
   b) Bibliometrics to show research productivity and connections with others in different labs/locations are more compelling when presented visually.
   c) Sharing the value of our own collections, making “hidden data” in research reports and field notes accessible through digitization and metadata, and connections to other data repositories.

--- Notes transcribed by Alison Ricker, Oberlin College, from summaries provided by each discussion group.
Brief Introduction to Data Visualization
Librarians Session: Association of College and Research Libraries

AAAS
February 14, 2016
Washington DC

Mary Frances Lembo
Research Librarian, Senior
Pacific Northwest National Laboratory
Data Visualization: Outline

- What is Data Visualization?
- Types of Visualization
- Resources
- Further Learning
Visualization: Norwood Viviano

New York  Newark  Philadelphia  Los Angeles
Types of Visualizations

- Topic-Based Visualization
- Network Visualization (With Whom?)
- Geospatial Visualization
- Temporal Visualization

Figure 1: Types of Data Visualizations

http://cmuscm.blogspot.com/2014/01/the-importance-of-visualizing-data-for.html
Topic-Based Visualization

Tableau Public

Tagxedo
Network Visualization

Sci2
This web application visualizes how successful universities or research-focused institutions collaborate.

Institutional network maps are shown for different subject areas. The positioning of the institutions reflects the extent of their collaboration activity.

Institutional network maps can be coloured by country or citation performance (proportion of highly cited papers).

Institutions can be laid out on a world map, in order to reveal geographic patterns of collaboration.

Click on individual institutions in order to see how successful they collaborate with other institutions.

SELECT A SUBJECT AREA TO START:

- Agricultural and Biological Sciences
- Biochemistry, Genetics and Molecular Biology
- Chemical Engineering
- Chemistry
- Computer Science
- Earth and Planetary Sciences
- Engineering
- Environmental Science
- Immunology and Microbiology
- Materials Science
- Mathematics
- Medicine
- Neuroscience
- Pharmacology, Toxicology and Pharmaceutics
- Physics and Astronomy
- Psychology
- Social Sciences
Network Visualization
Network Visualization
Geospatial Visualization

Interactive Mapping Tools

Maps

- RE Atlas
  - Explore basic renewable energy resources.
- MapSearch
  - Search for static maps related to renewable energy resources.
- NetH Atlas
  - Explore marine and hydrokinetic energy resources.
- FEMP Screening Map
  - Explore the market potential for various solar technologies.

Solar

- NARDE Viewer
  - Visualize, explore, and download solar resource data from the National Solar Radiation Database.
- PVWatts
  -Estimates the energy production and cost of energy of grid-connected photovoltaic (PV) energy systems.
- PVDAQ
  - Study solar array efficiency.

Transportation

- TransAtlas
  - Explore alternative fuel stations and production facilities.

Biomass

- BioFuels Atlas
  - See where biomass feedstocks can be used for biofuels production.
- BioPower Atlas
  - See where biomass feedstocks can be used for power production.

Geothermal

- The Geothermal Prospector
  - Find sites for developing large-scale geothermal plants.

Hydrogen

- HyDRA
  - Analyze hydrogen demand, resources, infrastructure, and cost.

Wind

- Wind Prospector
  - A tool to measure wind energy.
Geospatial Visualization
Geospatial Visualization
Geospatial Visualization
Temporal Visualization

- Penicillins: 17 years between discovery and first observed bacterial resistance
- Sulfonamides: 10 years
- Aminoglycosides: 3 years
- Tetracyclines: 6 years
- Phenics: 4 years
- Macrolides: 7 years
- Fidaxomicin: 29 years
- Glycopeptides: 7 years
- Oxazolidinones: 46 years
- Quinolones/Fluoroquinolones: 7 years
- Streptogramins: 1 year
- Diarylquinolines: 9 years

Timeline:
- 1920
- 1930
- 1940
- 1950
- 1960
- 1970
- 1980
- 1990
- 2000
- 2010
Further Learning

30+ Free Tools for Data Visualization and Analysis
http://www.computerworld.com/article/2506820


Information Visualization MOOC: Online course through Indiana University http://ivmooc.cns.iu.edu/
Further Learning


Kansas State University. Data Visualization. [http://guides.lib.k-state.edu/c.php?g=181742&p=1196015](http://guides.lib.k-state.edu/c.php?g=181742&p=1196015)


Additional Geospatial Resources

- **CartoDB**: Map and analyze your location data. [https://cartodb.com/](https://cartodb.com/)

- **Community Health Maps (NIH)**: Information on Low Cost Mapping Tools for Community-based Organizations


- **Google Fusion Tables**: Fusion Tables is an experimental data visualization web application to gather, visualize, and share data tables. [https://sites.google.com/site/fusiontablestalks/stories](https://sites.google.com/site/fusiontablestalks/stories)

- **OpenLayers 3**: OpenLayers is an open source JavaScript library for displaying map data in web browsers. [http://openlayers.org/](http://openlayers.org/)
Google Trends: Allows you to see what people are searching over time.  
http://www.google.com/trends

TimeFlow: Allows you to analyze temporal data with five different display modes.  
https://github.com/FlowingMedia/TimeFlow/wiki


TimeSearch: A tool to support interactive exportation of time-series data  
http://www.cs.umd.edu/hcil/timesearcher/

Resources Used


Elsevier. *Engineering Village 2*: EV2 provides a searchable index of the most comprehensive engineering literature and patent information available. The platform provides access to peer-reviewed, deeply indexed, relevant and accurate engineering research content. [http://www.engineeringvillage.com/](http://www.engineeringvillage.com/)

*Excellence Networks*: This web application visualizes how successful universities or research-focused institutions collaborate.

Indiana University. *Science of Science (Sci²)*: The Sci² Tool is a modular toolset specifically designed for the study of science. It supports the temporal, geospatial, topical, and network analysis and visualization of scholarly datasets at the micro (individual), meso (local), and macro (global) levels.
[https://sci2.cns.iu.edu/user/index.php](https://sci2.cns.iu.edu/user/index.php)
Resources Used

Leung, Hardy. *Tagxedo*: Tagxedo turns words into word clouds. Words are individually sized appropriately to highlight the frequencies of occurrence within the body of text. [http://www.tagxedo.com/](http://www.tagxedo.com/)


*Tableau Public*: *Tableau Public* is free software that can allow anyone to connect to a spreadsheet or file and create interactive data visualizations for the web. [https://public.tableau.com/s/](https://public.tableau.com/s/)

Wind Map

An invisible, ancient source of energy surrounds us—energy that powered the first explorations of the world, and that may be a key to the future. This map shows you the delicate tracery of wind flowing over the US.

Wind map prints are available from Point B Studio.
Read more about wind and about wind power.

http://hint.fm/wind/