Striking a Balance: Evidence Synthesis Support for Graduate Students

A presentation by:

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University of Iowa

What is evidence synthesis?

- Aim is to identify and synthesize all of the scholarly research on a particular topic, including both published and unpublished studies
- Methodical and comprehensive literature search guided by careful study design
- Based on well-formulated research question
- Unbiased, transparent, and reproducible

– Adapted from the Royal Society as cited in the Cornell University Library Guide, A Guide to Evidence Synthesis

Examples of evidence synthesis

What makes climate change adaptation effective? A systematic review of the literature

Gigi Owen

Systematic Review

Determinants of climate change policy adoption: A meta-analysis

Armin Jeddi Yeganeh, Andrew P. McCoy, Todd Schenk

Meta-analysis

Climate Change and Mental Health: A Scoping Review

Fiona Charlson, Sahalish Ali, Tarik Benmarhnia, Madeleine Pearl, Alessandro Massazza, Jura Augustinavicius, and James G. Scott

Scoping Review

Environmental sustainability scholarship and the efforts of the sport sector: A rapid review of literature

Sylvia Trendafilova, and Brian P. McCullough

Rapid Review

An Umbrella Review of Systematic Reviews on Food Choice and Nutrition Published between 2017 and-2019

Federico J. A. Perez-Cueto

Umbrella Review

and more…

Evidence Synthesis Institute (ESI)

- Funded by IMLS grant
- Partnership between Cornell, Carnegie Mellon, and University of Minnesota
- 6 total institutes beginning Spring 2021
- About the Institute & Application process
- Lots of great information and videos in their PressBooks

Where do we go from here?

University of Iowa

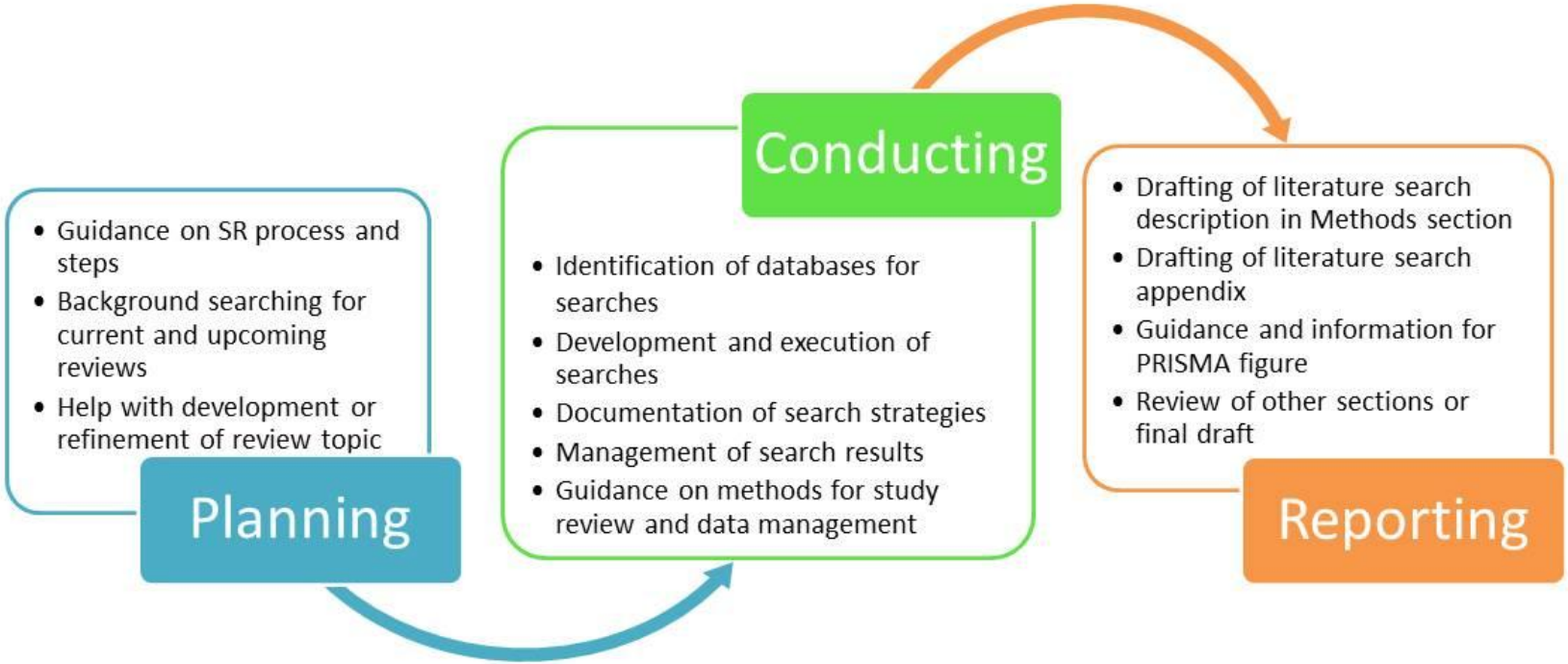
- Large public R1 institution
- Liaison areas
  - College of Education
  - Psychological & Brain Sciences
  - Linguistics

University of Iowa Special Collections

My experience with ES support

- Relatively new to ES
- Learn from Health Sciences Librarians
- EndNote
- Evidence Synthesis Institute (Aug 2021)
- Health Sciences Library already receiving requests from my liaison areas
- No advertising - just word of mouth (esp. among graduate students)
- Graduate students
    - Some are doing systematic review for a class
    - Some are conducting ES for comps

The Role of the Librarian Throughout the Systematic Review Process



– From UNC Health Sciences Library, How Can the Library Help?

Levels of Service

1. Training on conducting effective database searching, identifying sources, and/or using EndNote for citation management
2. Review of already completed search strategies for accuracy and
3. Collaboration to build effective search strategies*
4. Extensive assistance with development of protocol, design of search strategies, assistance with removing duplicates, managing citations, documenting process- including contribution to methods section write-up **

***= for this level of service, an acknowledgement is expected. **= Co-authorship is sometimes appropriate**

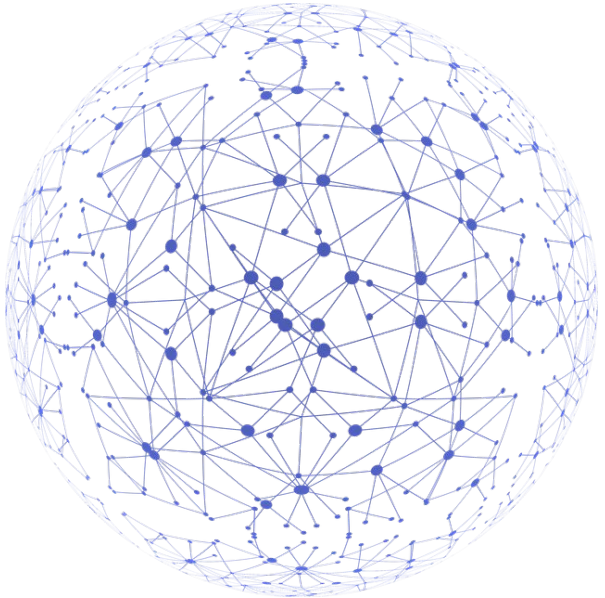
The search strategy

- Find balance between *sensitivity* (comprehensiveness) and *specificity* (precision) of search results
- The search strategy is shown to be of higher quality with the assistance of a librarian (Rethlefsen et al., 2015)
- Necessary to have in-depth understanding of Boolean operators, proximity searching, truncation, & subject terms
- Understand the nuances between databases

The initial meeting

- No intake form
- Explain my consultative role
- Go over resources from UI Hardin Library Systematic Review LibGuide
    - Protocols, protocol registration, PRISMA guidelines, timeline
- Learn about their research topic (normal reference interview)
- Do some preliminary searching
- Set action items for next meeting
    - Complete protocol worksheet
    - Find research articles that meet criteria (5-10)

Preliminary searching



- ES search strategies are complex
  - Encourage student to keep research log
- Identify library databases
  - Discipline-specific databases
    - PsycINFO
    - CINAHL
    - ERIC & Education Source
  - Large citation databases
    - PubMED
    - Web of Science
    - Scopus
    - Embase
- Discuss Google Scholar
  - Not transparent and reproducible
  - Use Google Scholar to search for similar ES papers (*“systematic review” topic*)
- Explain grey literature (dissertations, conference proceedings, reports, etc.)
- Clarify subject terms v. keywords

Time commitment

- 5 hour-long Zoom meetings over the course of a semester
  - Refining search query
  - Translating search query across databases
  - Identifying Subject Terms
- 10 substantive emails
  - Refining search query
  - Screening software (Covidence, Rayaan)
  - Accessing articles (during screening phase)
- Running final search and deduping with EndNote (about 2 hours)
  - I offer to do this for students – why?
  - Other approaches

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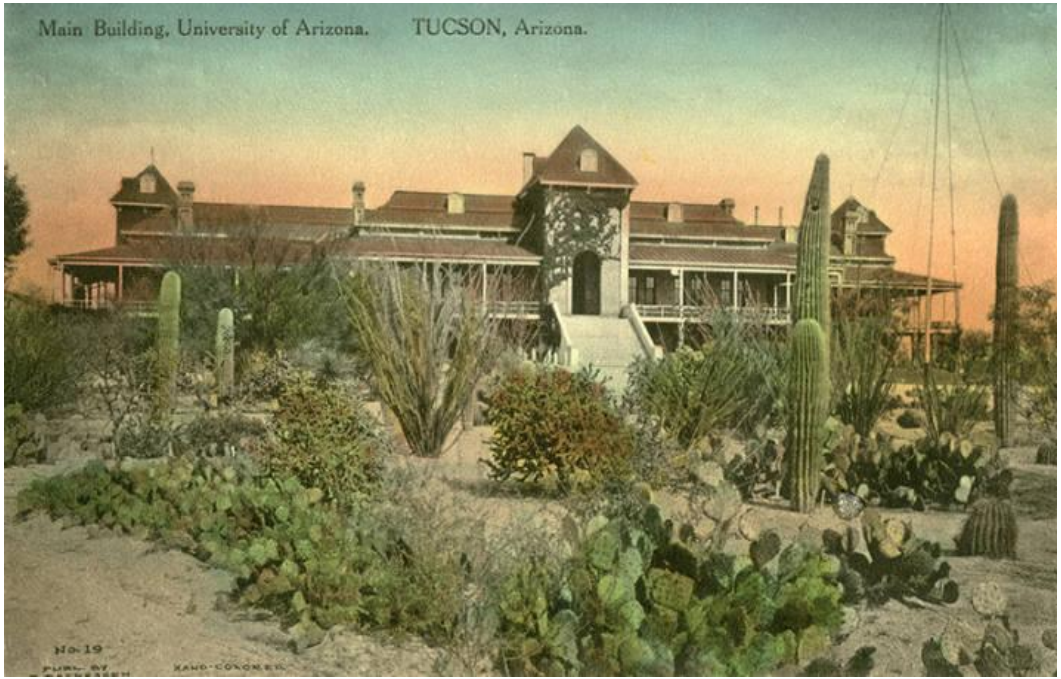
Final considerations

- You might be asked to “update the search” for publication. This can be more complicated than anticipated.
- This is what works for me. I enjoy assisting graduate students with their ES work and have not found it to be a burden or too overwhelming. By no means is this what will work for everyone

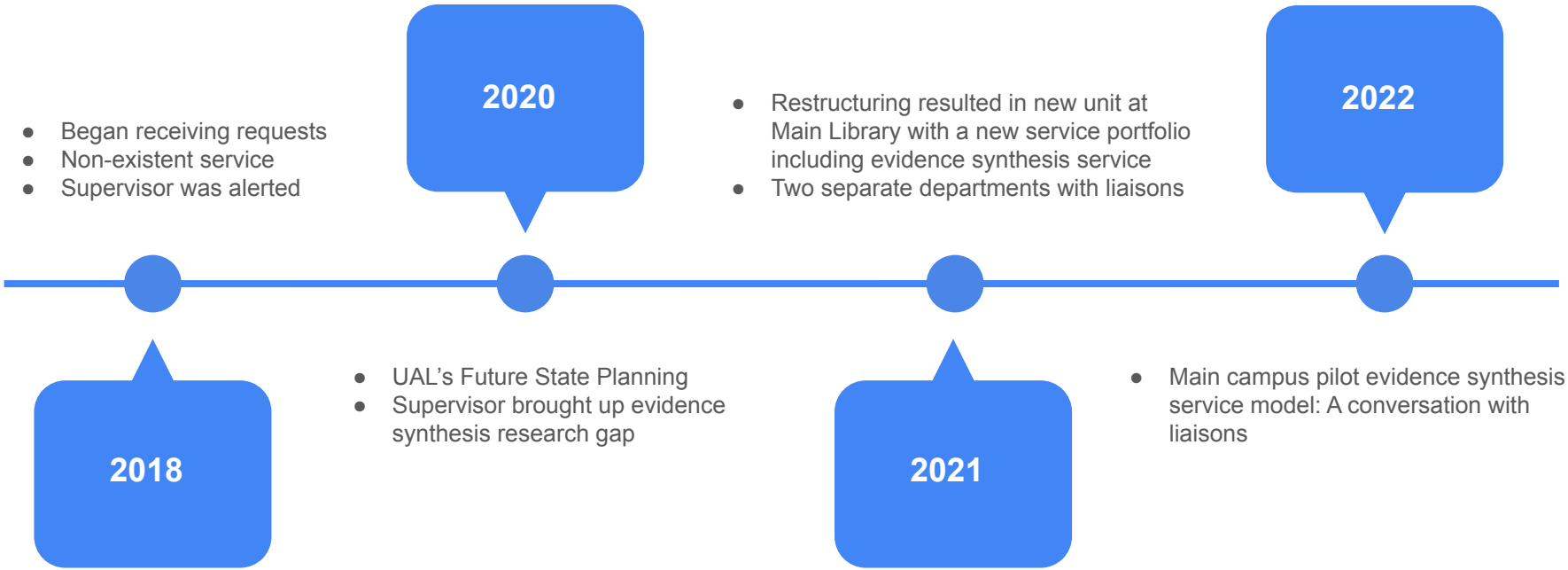
University of Arizona

- Large public R1, HSI institution
- HSL librarians providing ES service since ~2008
- Graduate student enrollment 2021: 10,943
- 130+ colleges, departments, and programs offering graduate programs in more than 150 areas of study



University of Arizona Photograph Collection

Timeline & evolution of evidence synthesis at UA Main Library to-date



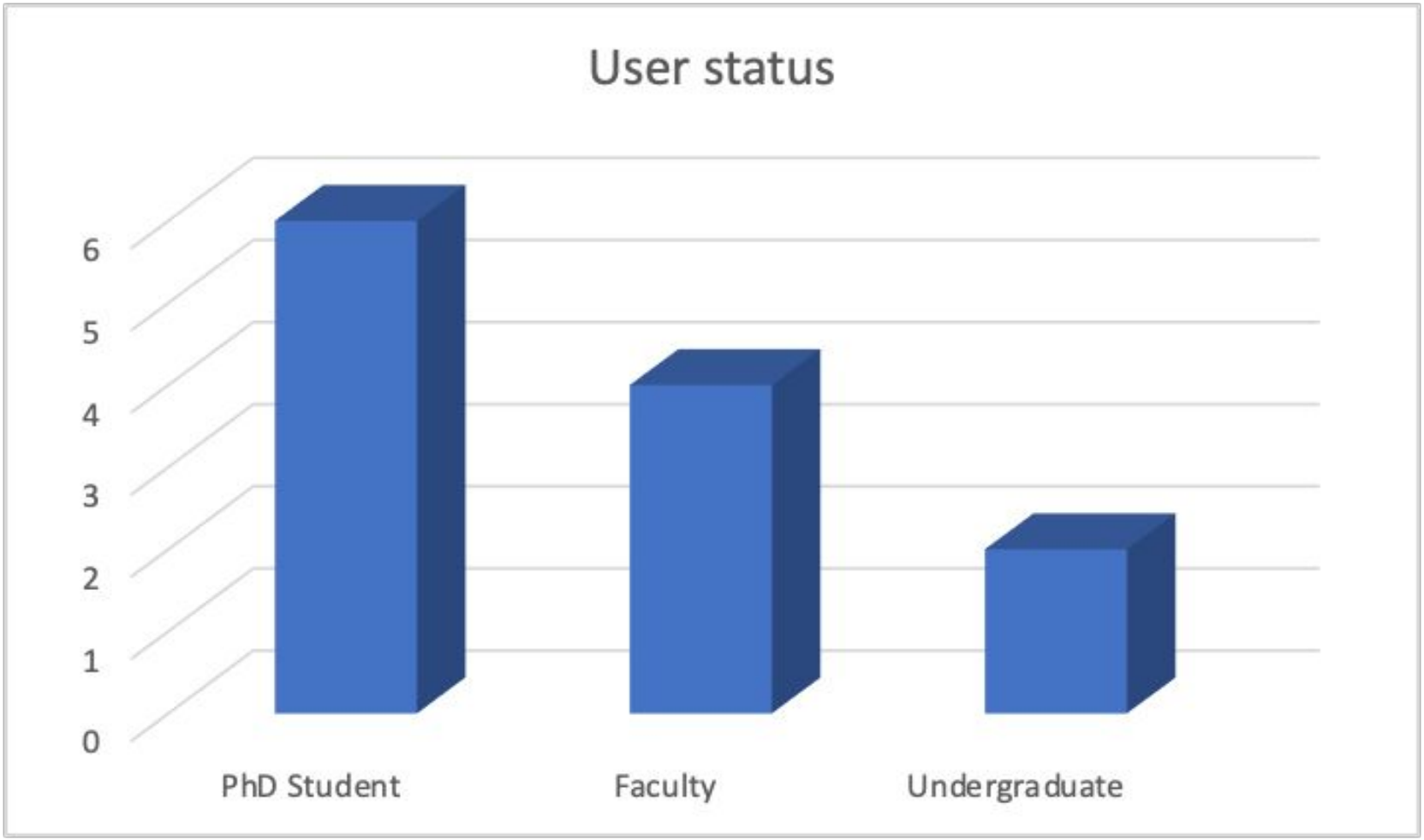
UAL's unpublished solo person model

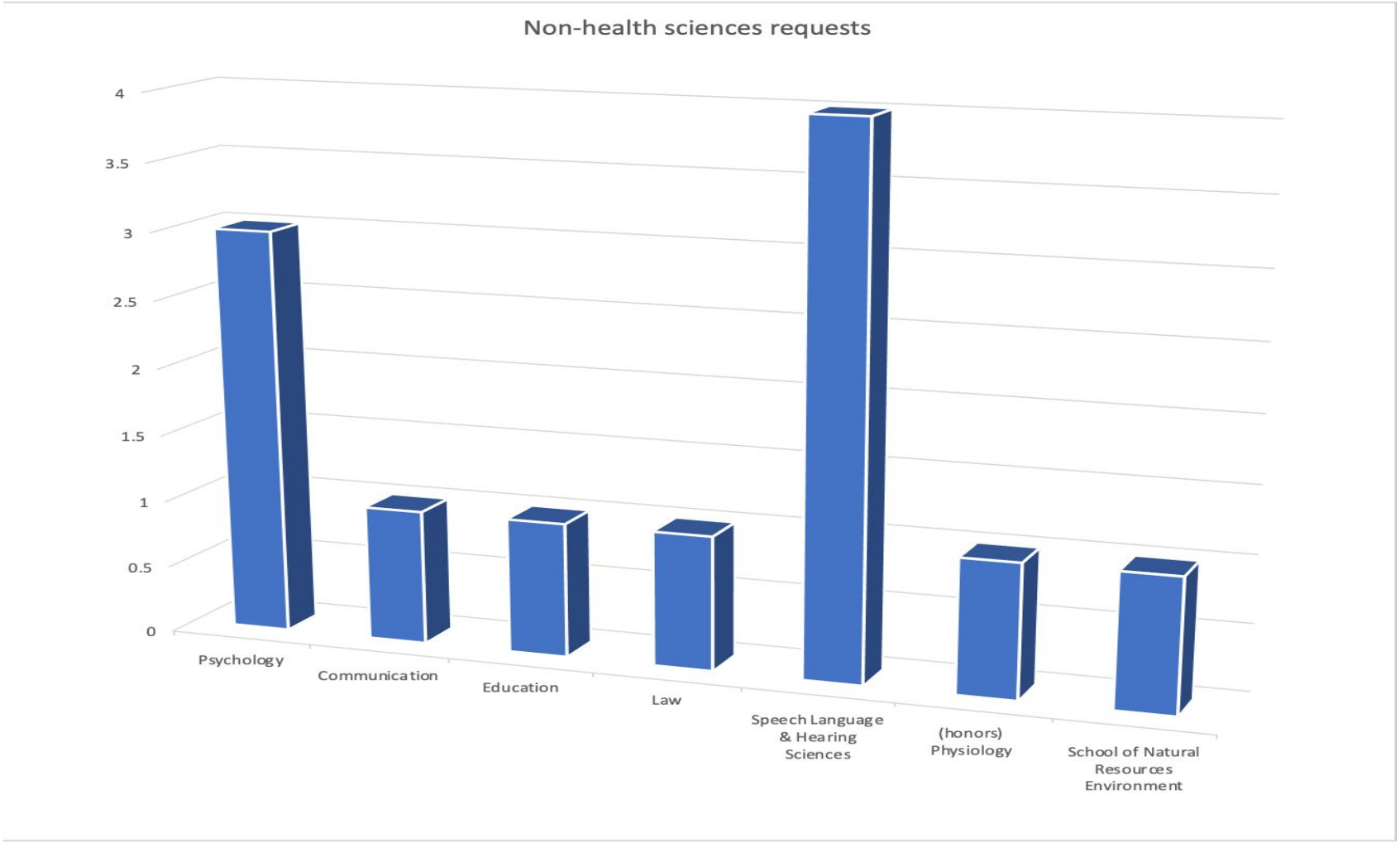
- Since July 2021 my efforts have gone towards designing a first-of-a-kind initiative service model to main campus users (non-health sciences fields) engaging in evidence synthesis research
- Institutional-driven support
- Single librarian providing consultative support by helping researchers navigate the systematic review process from protocol to publication*
    - **Preparation / Searching / Retrieval / Screening / Synthesizing / Write-up**
- Also, the solo librarian provides oversight, coordination, and ongoing development of the service

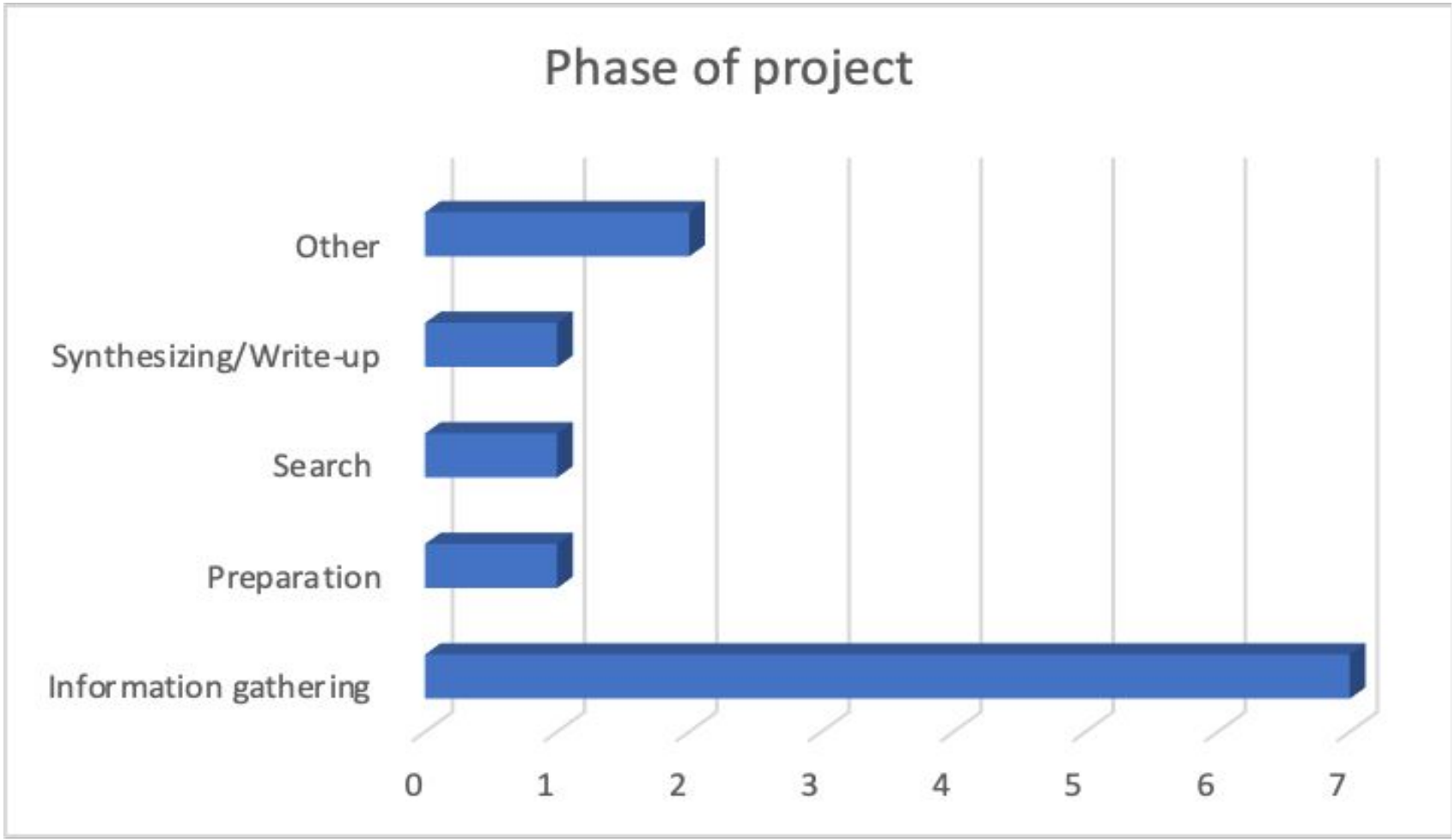
I was given full freedom to design the service. This model is rooted in my philosophy of librarianship.

What training did I receive?

- Circa ~2018-2020**:** I would just observe, digest, and analyze when HSL colleague assisted me with requests
- March-June 2020: HSL colleague guided me through hands-on training for a meta-analysis request received from a researcher right at the onset of COVID-19 pandemic
    - Resource: Institute of Medicine. 2011. *Finding What Works in Health Care: Standards for Systematic Reviews*. Washington, DC: The National Academies Press. https://doi.org/10.17226/13059
- August 3-5 2020: Attended Systematic Reviews and Evidence Synthesis Beyond the Health Sciences: A Training for Librarians (virtual training funded by IMLS)


User status
6
5
4
3
2
1
0
PhD Student
Faculty
Undergraduate


Non-health sciences requests
4
3.5
3
2.5
2
1.5
1
0.5
0
Psychology
Communication
Education
Law
Speech Language & Hearing Sciences
(honors) Physiology
School of Natural Resources Environment


Phase of project
Other
Synthesizing/Write-up
Search
Preparation
Information gathering
0
1
2
3
4
5
6
7

Most common request types from users

- Systematic reviews and scoping reviews are the most requested evidence synthesis requests
- Two meta-analysis requests from undergraduates doing semester term projects

How do researchers hear about the service if it is unpublished?

- Through liaison librarians
- Word of mouth
- AskUs service
- They just do!

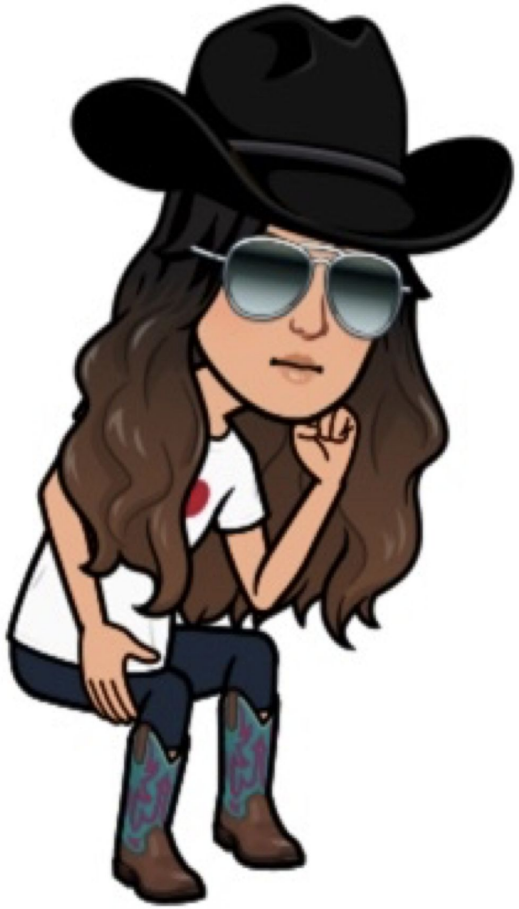
How do I spend the majority of my time?

Consulting

- Discussing the process, the required resources, and the available library support
- The heaviest time is spent in conversations centered around learning about their topic, study design, and protocol development
- Teaching and guiding researchers through the search phase (helping to identify resources, discussing indexing, MeSH or controlled vocabulary, strategizing the search, advising about database syntaxes, etc)
- Following each consultation, I find, compile, and share useful resources with researchers

Learning

- Reviewing notes and a variety of other resources (external library LibGuides, IOM ebook, etc)
- Learning more about registries, frameworks, guiding principles, etc
- Analyzing published protocols or templates
- Reading articles about evidence synthesis research
- Learning more about different review types
- Monitoring the expert searching listserv



- Additional time is spent anticipating activities downstream in the process
- As well as on observations shaping the ongoing development of the service

Observations part 1

- High number of requests originating from graduate students. Liaisons need to be in tune with *trending changes* in graduation requirements in their programs
- The amount and accuracy of knowledge graduate students have about evidence synthesis research is split evenly
  - Some know enough and I help expand their understanding better
  - Others do not have any idea what it involves or what it will take
- Graduate student mentors don’t realize the extent of work, skills, and resources (team project <2+ members required)
- Useful to have the mentor in discussions during consultations with graduate student

Observations part 2

- I lack the subject disciplinary expertise to assist researchers during the search phase in areas outside of my disciplines
- Similarly, I am not equipped with the expertise to help researchers identify appropriate information resources to search in areas outside of my disciplines
- Communicating effectively with researchers in different areas requires knowledge of disciplinary discourse practices

Successes

- The absolute most generous and helpful colleagues (UA HSL and ACRL)
- Researchers are comfortable and patient with my ongoing development
- Learning is happening in two-ways: researchers and myself
- My comfort and confidence is increasing and I can communicate effectively with researchers
- I have strong project management skills that are valuable when helping researchers navigate the process
- I can work with a diverse group of individuals
- I’m not afraid to ask for help
- This is in perfect alignment with my research interest in helping graduate students move through their training more easily

Challenges

- Infrastructure is needed in order for this service to be up and running officially
- The more I learn the less I know. Still a lot more things remaining to learn
- The volume and intensity of the required learning plus the turn around rate is overwhelming my mental capacity
- As requests increase will need to look at full workload and liaison duties

Stay tuned, TBD

- Don’t offer service until more resources are available
- Taper down consultative service where my only focus is to provide an overview of the process, subsequent questions from researchers will be fielded by liaisons
- Continue as-is and bring in liaisons to support with search phase in alignment with liaison duties
- Other

What is the balance?

- What is the appropriate level of service for graduate students?
- How to prioritize ES support for graduate students v. faculty?
- When organizing a service, how do you get liaisons on board?
- What kind of training can librarians provide faculty on ES?
- How can coordinators manage concerns around scope creep?

Thank you for your time!

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