

# The Design and Implementation of Integrated and Interdisciplinary Information Literacy Instruction for Science Majors

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## 1. BACKGROUND AND METHODS

- We were invited to teach information literacy in two required classes for undergraduate science and math majors.
- Course objectives were developed that drew from the ACRL Framework for Information Literacy for Higher Education.
- We collaborated closely with faculty to develop lesson plans that incorporated a number of active learning strategies.
- Feedback from faculty and a post-class assessment of student experience is being used to refine future lesson plans.

## 2. PROGRAM QUICK FACTS

**EUREKA (Fall 2017)**

- Year: Freshman
- Class size: >300
- Majors: undeclared
- Lecture: 1
- Recitations: 15
- Interdisciplinary recitations

**PROPEL (Spring 2018)**

- Year: Junior
- Class size: 156
- Majors: Physics, Math, Biology, Chemistry
- Lecture: 1
- Recitations: 8
- Discipline-specific recitations

## 3. COLLABORATING WITH FACULTY

- The development of the EUREKA/PROPEL information literacy curriculum involved substantial collaboration with the lead faculty for this program.
- The ACRL Framework for Information Literacy was effective in linking library teaching goals with the faculty's desired learning outcomes for the course.

## SCAFFOLDING LEARNING OUTCOMES FROM NOVICE TO SCHOLAR

**FIRST YEAR: EUREKA**

- Construct effective database search strategies
- Describe how scholarly information is organized and discovered
- Identify and access discipline-specific scholarly databases
- Describe the difference between scholarly and popular resources
- Describe the peer-review process



**THIRD YEAR: PROPEL**

- Locate and integrate information from a range of resource types
- Summarize the changes in scientific knowledge over time on a particular topic
- Critique and evaluate study design and claims
- Recognize that authority can be defined differently depending on context and discipline

## CREATING AN ACTIVE LEARNING ENVIRONMENT

**SOCRATIVE**

This free, web-based app was used for formative assessment and to engage students with interactive Q&A in a large lecture environment.



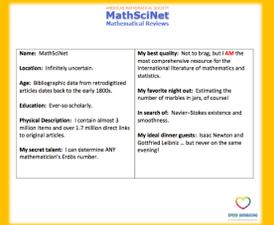
**MYSTERY ARTICLE**

This recitation exercise challenged students to consider the credibility of scientific information from different source types and to prompt discussion about peer-review.



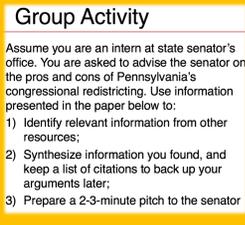
**SPEED DATABASING**

This exercise is loosely based on the concept of speed dating – students rapidly review four databases using the database's intro card.



**ROLE PLAYING**

Students act as start-up or government employees to pitch to stakeholders the societal or entrepreneurial importance of a topic, based on a research paper, and other evidence they find from reputable resources.





Scan me for more on info on speed-databasing

Adapted from <https://en.wikipedia.org/wiki/Gerrymandering> (original version attributed to Stephen Nass)

## 4. STUDENT FEEDBACK

### EUREKA

- Most of the remaining questions were directional.
- Some students wanted in-depth instruction with discipline-specific databases or did not understand how to choose a database.

### PROPEL

- 57% of respondents thought the Mendeley demo was the most useful part of the lecture.
- 74% of respondents found the role-playing activity helpful for learning how to find information from multiple sources to support an argument.

## 5. CHALLENGES

- Active learning for large classes
- Restricted to in-class content only
- Variable disciplinary backgrounds
  - EUREKA: students not separated by majors
  - PROPEL: different recitation materials for different majors
- Negative presumptions by students in PROPEL
  - Lack of relevance
  - Extra course load
- Collaborating and coordinating with teaching faculty and TAs

## 6. FUTURE DIRECTIONS

- Design future efforts with an intent for research
- Reach out to our learning center for development of active learning and other teaching/learning methods
- Experience greater buy-in from Juniors in the PROPEL course
- Enhanced use of Canvas (learning management system)
- Goal to keep getting invited back to contribute