1. Purpose of this project
I developed peer-learning workshops to teach students how to purposefully employ critical thinking skills in their everyday lives.
My learning objectives were to enable students to:
* Discriminate between inappropriate and potentially useful links in search engine results pages
* Identify articles’ claims, and evaluate the evidence presented
* Differentiate between causal relationships and non-causal correlations
* Appraise claims made and evidence presented in advertisements

2. Motivation
I am frustrated by:
* News[ertainment] media that prioritize ratings over analysis and investigative journalism
* Lack of critical thinking in everyday life
* Undergraduates’ poor information-filtering skills
As a college educator, I have the opportunity to effect change in emerging adults. My goal is to make the world a better place by raising the level of discourse in American society.

3. Methodology
My series of 4 workshops is easily adaptable to any college classroom. Teachers can use all of my material as-is, or substitute mainstream media examples that are relevant to their course content.
* Themes: Information literacy, identifying claims, evaluating evidence, correlation/causation fallacies
* Topics: Aligned with course content
* Context: Mainstream media examples
  (Google search results, news articles, ads)
I recruited 3 student volunteers from a non-majors Astronomy class for this pilot study. In addition, I investigated the entire class’s use of information resources by analyzing their Essay 1 bibliographies.

4. Workshop format
Students work in groups of 3-4, discussing worksheet questions that lead them step-by-step through:
* Verbalizing their preconceptions of the workshop theme
* Dissecting instructional materials to discover the cognitive processes they already use
* Applying skills step-by-step in real-world situations: search results, news articles,ads, etc.
* Using metacognitive strategies of questioning and reflection

5. What sources do undergraduates cite?
The 22 essays cited 135 (non-unique) references, only half of which were deemed suitable by their instructors. These findings suggest that we need to either tell students what types of resources are appropriate for college-level research, or teach them cognitive skills that enable them to appraise information themselves.

A. Evaluating search engine results
How to analyze the URL and blurb for clues about the site’s legitimacy

B. Reading critically
Identifying an article’s topic, issue, and claim; evaluating evidence presented in support of that claim

C. Correlation is not necessarily causation
Causal relationships, correlation/causation fallacies, Mill’s methods for identifying causes

D. Applying skills in a new context
Interpreting ads

6. Evaluation and future work
* Students often verbalized metacognition “Brings to forefront what happens subconsciously in our minds”
* Students retained concepts as evidenced by post-test 2 months after Workshop 1
* Future work:
  - Revise worksheets
  - Second, larger pilot study
  - Publicize and make materials widely available

I recommend
High-level news
Press releases and aggregation sites bridge the gap between journals and news outlets.
* Academic yet accessible language
* Detailed, accurate information
* Links to references

Informative websites
Intended to educate the public
* Museums, research groups, educational organizations, public media
* Comprehensive, and often comprehensive

I recommend with caution
Traditional
* Textbooks and lecture notes provide reasonable background reading
* Bibliographic entries indicate that students read books as online excerpts

News articles
* Not academic sources
* Varying factual and writing quality
* Students assume credibility due to being “published”

Journal articles
* Novice students lack the vocabulary needed to comprehend scientific literature
* Misunderstandings lead to grading penalties
* “Reading” does not lead to learning

Inappropriate websites
Experts can judge these sites’ validity; students cannot:
“If we’re in astronomy and I’m way over my head then I will just accept what they say.”