Honors Course Proposal 2015

TITLE: *Public trust and distrust of science*
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FORMAT: 5 credit; 2 meetings/week, 2.5 hour each; Interdisc. VLPA/I&S/NW area
Tuesdays: interactive lecture
Thursdays: practice based, discussion
Readings due: Tuesday of each week

PREREQUISITES: junior or senior standing; at least 1 science course and 1 humanities course.

COURSE DESCRIPTION:
 "One way we can responsibly cultivate trust is to develop a trustworthy character,"
(Potter, 2002).
Public trust in science is at an all-time low. Science reporting is often sensationalized and confusing, while science education is not highly prioritized. Sometimes, scientists overstate the potential of their work. Policy-makers often ignore scientific evidence in favor of political expediency. For many minority communities, institutions such as healthcare, research and education, which hold positions of power in our society, have caused them harm, leading to distrust. This distrust is often rooted in well-founded, rational reasons. The result is reluctance among minority populations to participate in research, and reluctance among members of the public to believe and apply scientific claims to their own decision-making.
Yet, public resources are still being funneled into basic scientific research and translation into the clinic and public health programs. Further, the new Precision Medicine Initiative aims to enroll a million participants in their cohort study, at a starting cost of $130 million. Success of this investment depends on both large-scale public participation in research, and support for use of public funds in this way. Trust in scientific institutions and in research is critical for the ethical distribution of resources in scientific endeavors, and for advancement that benefits the public. For public trust in science to be rebuilt, it is up to these powerful institutions to cultivate their own trustworthiness, acknowledge past harms, and shift norms and practices to improve responsiveness to public interests and concerns.
This course examines distrust of science in our society, especially as it impacts minority communities, through the integration of science, philosophy, history and qualitative research. Our focus is on health-related science, but other areas of science are invited for discussion as well. In addition to exploring concepts of trust and trustworthiness, and the roots of distrust in science, students will evaluate current scientific evidence on publically important topics; apply discourse analysis methods to the analysis of popular media articles on scientific topics; and

convey an argument in support of a scientific topic to a public audience, motivated by an institutional responsibility for trustworthiness.

Some questions we will explore include,

- How does distrust of science operate in our society today?
- What are the bases for this distrust, for various communities?
- What does institutional trustworthiness look like?
- How can institutions be more responsive to public concerns of science?
- Who is responsible to whom for increasing scientific trustworthiness?

LEARNING OBJECTIVES:

1. To engage concepts of trust and trustworthiness.
2. To explore various histories of distrust in research and science for different publics.
3. To identify approaches to reduce distrust in populations with varied experiences with science.
4. To critically analyze arguments in the popular media using DA methods, to highlight the assumptions and angle put forth.

To convey a commitment to trustworthiness to a public audience through respectfully engaging a distrustful perspective on science.

DRAFT WEEKLY MODULES:

1. Introduction, roots of distrust; preview midterm/final
2. Philosophical concepts of trust and trustworthiness
3. Research methods for course assignments: Scientific literature searching; Discourse analysis
4. Public trust of science: → *Midterm 1 due*
    a. Why do we trust some science and not others?
    b. Popular topics—vaccines, GMOs, cancer research, climate change, Precision Medicine Initiative
5. History of research harms, re: underrepresented communities
6. Case study: The Havasupai legal case
    a. What went wrong? What was the fall out?
    b. What could be done to rebuild trust?
7. Responsibility for trustworthiness? → *Discourse analysis due*
    a. Whose responsibility?
    b. To whom?
    c. For what?
8. Citizen science
    a. Peer-review of midterms due?
    b. Cases of public health
    c. What makes a good blog post
9. Community engagement in research

        a.   CBPR, Stakeholder engagement theory/concepts
        b.   Examples, how this applies to improving trust
10. Situating ourselves; wrap up; *Final assignment due*
        a.   What is our role? (Reflection)

ASSIGNMENTS:

1. Midterm paper: 3-4 pages, plus references

- Choose a current scientific topic of public interest.
- Explore your topic; summarize the scientific background, gather popular media sources.
- Pieces to include:
  1. Introduction to your topic—what are you writing about? (1/2 page)
  2. What are the major perspectives in the scientific community on your topic? Is there scientific consensus about your topic? Is there an active debate? What are the main pieces of evidence? Provide 3-5 scientific references. (1-1.5 page)
  3. What are the major perspectives in the popular literature on your topic? Provide at least 2 opposing views with references summarizing those views. References must have wide reach. (1-1.5 page)
  4. Offer your conclusion regarding which popular view you agree with, based on your evaluation of the science. (1/2 page)
  5. References, APA style

2. Discourse analysis project: 4 pages

- Identify 2 popular media articles expressing a viewpoint distrustful of scientific claims that you chose for the midterm paper.
- Conduct a discourse analysis on the articles you gathered.
- Write up a short scientific report of your results, 2 pages on each article.
  - Identify the distrustful claims.
  - What kinds of questions do they raise, and what can you infer from them?
  - What are some assumptions underlying the author's position?
  - What evidence do they offer? What evidence do they leave out or misrepresent?
  - How do they use language to "work" for them? What kinds of rhetorical moves do they take?
  - Other questions from Gee.

3. Final paper: Blog post, 3 pages plus references

- Modeling public engagement and integrating both midterms into an article for the public.

- Write an argument regarding responsibility to do something about public distrust with your topic. Who is responsible, to do what, and why? To whom are they responsible?
- In your argument:
    - Summarize the scientific debate/consensus on the topic, and your beliefs about the topic based on the strongest scientific evidence.
    - Use the findings from your discourse analysis on the popular media articles, to craft your own argument and rhetorical moves.

PORTFOLIO CONTRIBUTION:

All three assignments are intended to build upon one another, to enable an in-depth analysis of a particular topic of the students' interest, using different methods. Together, the assignments require students to evaluate and synthesize both scientific and popular media claims, and to demonstrate their ability to write for both audiences. The short research project applies discourse analysis methods, offering students an opportunity to practice a new qualitative research skill. The blog-style article for a public audience, which both models and argues for trustworthy public engagement in science, would add a unique dimension to students' portfolios.