ENVS 6841: The Socio-Environmental Research Process

Instructor
Dr. Mark Brunson, Mark.Brunson@usu.edu (office: NR 216)

Teaching schedule
Tuesdays and Thursdays, 3-4:15 pm, Oct. 5-Nov. 6, in ENGR 304

Office hours
I expect to be in my campus office most days. Email me to set up a time and interactive method (in-person or Zoom) that works for you.

Course description
This course introduces the philosophical and conceptual underpinnings of scientific research about human-environment interactions. It draws upon topics from philosophy, history, economics, and sociology, focusing on why science is conducted as it is, alternative perspectives on how to approach research endeavors, and ethical challenges faced by researchers in socio-environmental science fields. It is part of a sequence of three, 1-credit courses for incoming students in Environment and Society graduate programs.

Course design and expectations
Class periods (n=10) will include short introductory lecture presentations as well as in-depth discussion of course topics and how they might be applied to research in environment and society. To help you participate effectively in those discussions, I have assigned background readings (articles or book chapters) for every class except the last one. I ask you to have read assigned readings before the class period.

There will be no textbook or tests, but there will be three homework assignments scheduled in weeks 3, 4, and 5. Your grade will be based on successful completion of those assignments (20% each) and on your participation in whole-class discussions or group activities (40%). There are few, if any, “right answers” in this topic, so any evaluation I do will be based on your ability to draw upon evidence (from readings or experience) to back your assertions.

Following is the schedule of class sessions and assignments:

Oct. 5  Introduction: What is science?
Topics: Introduction to course participants and procedures; introduction to terms and ideas (e.g., basic vs. applied); naturalism and pseudoscience
Readings: Dear; Hansson

Oct. 7  Induction vs. deduction
Topics: Aristotle and Bacon; introduction to hypothetico-deductive method
Reading: Strevens (89-119)
Oct. 12   The progress of science

Topics: Popper and Kuhn; empiricism vs. model-driven science  
Reading: Strevens (13-40)

Oct. 14   What if theory doesn’t exist or is found wanting?

Topics: Induction vs. deduction revisited; grounded theory development; qualitative vs. quantitative approaches  
Reading: Charmaz

Oct. 19   Indigenous knowledge; science as colonialism

Topics: Traditional ecological knowledge as a process; feminist perspectives  
Reading: Berkes

Assignment due: Reaction paper: Based on what you’ve heard, is social science a science? Why/why not?

Oct. 21   Marginalization by and through science (continue discussion from Oct. 19)

Topics: Method and variable as means of maintaining the status quo  
Reading: Cannella & Manuelito; Omland et al.

Oct. 26   Science, advocacy, and the moral responsibilities of scientists

Topics: Responsibility vs. autonomy; advocacy for persons, nature, and science itself  
Reading: Douglas; Lackey; McKendrick

Oct. 26   Ethics of socio-environmental research

Topics: Institutional review boards; ethical principles; ethical conundrums  
Reading: Kitchener & Kitchener; Wilmer et al.

Assignment due: Complete CITI training and USU IRB certification (if not already achieved)

Nov. 2   Data-sharing and replicability

Topics: Balancing emerging data-publication norms with human subjects protections; replicability of social science research (or lack thereof)  
Readings: Nature Human Behavior editorial; Michener; Rosenberg et al.

Nov. 4   Conclusions and synthesis

Topics: Any issue(s) students want to revisit in longer discussion  
Readings: None

Assignment due: Develop your own socio-environmental research philosophy
Course Readings


Attendance and Excused Absences Policy

This is graduate school. You are responsible adults, and I know you may have to be out of town for research, conference attendance, family emergencies, etc. There is no required attendance policy, but of course if you’re rarely here it’s hard to earn credit for participation. Please let me know, if possible, if you’re aware of an absence coming up.