Welcome to Public Engagement with Science! This course focuses on theoretical and practical aspects of public engagement with scientific research, policy, and management, with an emphasis on science communication. During the semester, we’ll explore University of Wisconsin’s land grant mandate to share university research with the public and use university resources to explore public needs. We’ll build from readings in science communication and public participation in scientific research, and we’ll hear from experts in Wisconsin working on a variety of projects with public stakeholders. At the end of the class, you’ll use what you’ve learned this semester about the theory and practice of science communication and public engagement to design, execute, and assess an activity that engages a segment of the public in your research. In other words, this class is about both learning and doing.

Course Goals

- To understand the mission and vision of land grant institutions
- To recognize the various forms through which public stakeholders intersect with scientific research and decision-making and the complications and consequences of each
- To identify best practices for public engagement and science communication
- To become familiar with a variety of organizations throughout Wisconsin working to engage relevant publics in scientific research and decision-making
- To create and execute a plan of action for how to engage the public in scientific research

Student Learning Outcomes

Upon successful completion of this course, each student will be able to:

- Apply relevant academic theory to analyze real-world cases
- Write both compact and extended summaries and analyses
- Plan and present a polished collaborative oral presentation
- Formulate rich questions for practicing experts in the field
- Create and execute an audience-aware public intervention in a science-related topic

Course Text


Other Readings

- Course readings are available for download on Dr. Druschke’s Society, Ecology & Communication (SEAComm) lab page: http://seacomm.weebly.com. Daily plans are posted there, as well, with links to readings for the following week. Download, read, and annotate, then bring all readings to class either digitally or in print for discussion.
Classroom Protocol

Students are expected to come to class having read and completed all assigned materials and work, and being prepared to speak and engage. This course is designed to be interactive and discussion-based. Each student is expected to be an active contributor in each course period, sharing experiences, insights, and questions and responding respectfully to fellow students, the instructor, and guest speakers.

Assignments and Grading Policy

Attendance and engagement: Students are expected to attend all course meetings, but I anticipate students might miss up to two course meetings per semester for cases of illness, conference travel, family emergency, etc. Students should come prepared for class and be active participants. Engagement will be graded on a S/U basis each course period. I will begin requiring weekly reading response papers if students don’t seem prepared for class.

Exams: Every few weeks, we will have an exam that covers the most recent course material and asks students to check in about key concepts and outstanding questions. These exams offer a chance for you to highlight what you’ve learned and serve as a foundation for reviewing the key terms and concepts from the course.

Engagement event analysis paper: Sometime between February and April, you will select and attend a public engagement event and write a paper about it that summarizes and analyzes the event, incorporating concepts from the literature discussed in class. This paper is a chance to see how an engagement event works out in the world, in order to consider how to craft your own engagement event for the final project.

Final action and analysis paper: In lieu of a final exam, students will create and execute an action that engages some segment of the public with some aspect of scientific research or management, and then write a 10-pg. analysis and justification of the action based extensively on the course readings. (Students are encouraged to collaborate on these action projects, but each student should write up her own final paper.) Examples of projects might include a citizen science data collection, a public meeting about environmental legislation, a public lecture about current research, a short video, an article in a venue like Edge Effects, or an educational activity for a local school. This project offers you the chance to test your newfound skills in public engagement and science communication, engaging a real audience in research that interests you in some consequential way. A number of smaller assignments throughout the semester will build towards this final action, including a graded proposal/pitch presentation.

Grading Scale:
A 93 / A- 90 / B+ 87 / B 83 / B- 80 / C+ 77 / C 73 / C- 70 / D+ 67 / D 63 / F 59

Grading breakdown:
Attendance and engagement 5%
Exams 1, 2, 3 30%
Engagement analysis paper 20%
Pitch presentation 10%
Final action and analysis paper 35%
Key dates
Exam 1 > Tuesday, Feb. 13
Exam 2 > Tuesday, Mar. 6
Exam 3 > Thursday, Apr. 19
Engagement analysis paper > Tuesday, Feb. 13 through Tuesday, April 3
Pitch presentations > Tuesday, Mar. 13, Thursday, Mar. 15, Tuesday, Mar. 20, Thursday, Mar. 22
Final action and analysis paper > Thursday, May 3

Accommodations for Special Needs
Any student with a documented disability is welcome to contact either of the instructors as early in the semester as possible so that we may arrange reasonable accommodations. As part of this process, please be in touch with the McBurney Disability Resource Center at 702 W. Johnson St., 608-263-2741, mcburney@studentlife.wisc.edu.

Academic Honesty
All submitted work must be your own. If you consult other sources (class readings, articles or books from the library, articles available through internet databases, or websites, etc.) these MUST be properly documented, or you will be charged with plagiarism and will receive an F for the assignment. In some cases, this may result in a failure of the course. Writer’s handbooks and reputable online resources offer help on matters of plagiarism and instruct you about how to acknowledge source material. If you need any help understanding when to cite something or how to indicate your references, please ask.

The Writing Center
Students should make use of free writing assistance at The Writing Center, 6171 Helen C. White Hall, during any phase of a writing project. Call 608-263-1992 for an appointment.

Respect and Inclusion
If you must come in late, please do not disrupt the class. Please turn off all electronic devices not being used for the class. I am committed to fostering a shared community that views the various forms of diversity we bring to the classroom as our greatest resources: differences of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and religion, among others. I expect students to be relentlessly kind in their criticisms and open to learning from the perspectives of others. I am committed to using your preferred name and pronouns. Rather than calling roll on the first day, I invite students to introduce themselves with their preferred names, and you should feel free to include your preferred pronouns then or to more discreetly speak with me after class or contact me via email. If your preferred name or pronouns change during the semester, please let me know and we can develop a plan to share this information with others in a way that is safe for you.
Engagement Event Analysis Paper
20% of course grade

Due dates:
February 13 - April 3: Analysis papers due

Project description: You will select and attend a public engagement event during the semester and write a summary and analysis paper about it, incorporating concepts from the literature discussed in class. Consider attending a public lecture, a public meeting of an organization’s Board of Directors, a local town council meeting, etc. The event you choose is up to you, but it should be related to public engagement with science in some way.

This paper should be four to five pages in length, double-spaced. It should properly reference course readings, similar to any academic paper. It should briefly describe the event and its context and spend the bulk of its time focused on analyzing the event, using concepts and terminology from course readings.

Your paper should be written as soon as possible after your engagement event, and submitted thereafter to Dr. Druschke. The final date for accepting analysis papers is April 3.

The paper will be scored as follows:
- Description of the event – 25%
- Analysis of the event as an opportunity for public engagement with science, utilizing concepts and terminology from the readings to place it into context with regard to models/mechanisms of public understanding, public engagement, public participation, etc. – 50%
- Quality of writing and editing – 25%
Final Action and Analysis
35% of final grade
Due Thursday, May 3
10 pgs., double spaced (Times New Roman, 12 pt. font, 1” margins)

Due dates:
Individual conferences: Thursday, February 22
Pitch presentations: Tuesday, March 13; Thursday, March 15; Tuesday, March 20; Thursday, March 22
Do something: Sunday, April 1 – Monday, April 30
Final paper due: Thursday, May 3

Project description:
In lieu of a final exam, students will create and execute an action that engages some segment of the public with some aspect of scientific research or management, and then write a 10-pg. analysis and justification of the action based extensively on the course readings. (Students may work in groups on these action projects, but each student should write up her own final paper.) Examples of projects might include a citizen science data collection, a public meeting about environmental legislation, a public lecture about current research, a short video, an article in a venue like Edge Effects, or an educational activity for a local school. This project offers you the chance to test your newfound skills in public engagement and science communication, engaging a real audience in research that interests you in some consequential way. A number of smaller assignments throughout the semester will build towards this final action, including a graded proposal/pitch presentation.

Learning outcomes:
• Apply relevant academic theory to analyze real-world cases
• Write extended summaries and analyses
• Plan and present a polished collaborative oral presentation
• Create and execute an audience-aware public intervention in a science-related topic

PART ONE: MEET WITH YOUR PROFESSOR

During week five of the course, you will meet with Dr. Druschke (either individually or in small groups that you hope to work in for the final project). This is a chance to brainstorm final project ideas with your professor. You should come into this meeting with some ideas for a final project. Your professor can help you clarify and refine and point you towards existing resources on or off campus.

PART TWO: PRESENT YOUR IDEAS TO THE CLASS

In weeks eight and nine (just before spring break), each student (or group of students working together) will offer a brief pitch presentation to the class, pitching your final project idea to the rest of the class. Each presentation should last ~7 minutes and include just a few .ppt slides. Your pitch presentation should include your big idea, the exigence you’re responding to, your potential audience, the desired outcome of your action, the potential assessment mechanism, the existing resources you can build from, and questions you have for the class to help shape your idea. We’ll spend some time after each presentation brainstorming as a class and providing feedback to help shape the final project.
PART THREE: DO SOMETHING!

During the month of April, each student (or group of students) should design and execute a consequential action/intervention that engages some specific segment of the public with some facet of science in some way.

Be thoughtful! Be deliberate! Take your time! Do something! Be great!

PART FOUR: TELL US ABOUT IT! (in 10 pgs., double spaced, plus supporting documentation)

In lieu of a final exam, each student will submit a ten-page (double-spaced) analysis to Dr. Druschke that:

• describes—IN DETAIL!—the preparation for, execution of, and consequences of your action, including your employment of backwards design, the BIIF framework, a logic model, or something similar.
• analyzes the action taken including a consideration of:
  o why this was the best possible action to take given the situation and any constraints (what other alternatives did you weigh? why did you choose this one?)
  o a description of the situation you were hoping to intervene in
  o the specific audience that you targeted and why this was the appropriate audience – what do they know about the issue? what do you know about them? how did you work to connect to them specifically?
  o the potential intended and unintended consequences of the action
  o the particular content, design, and delivery choices and their connections to desired consequences
  o how this action exemplified the learning you did in this class (this should be the majority of your paper!)
  o what the specific exigence was that you were reacting to and why you addressed this exigence in this particular way
  o how you assessed or evaluated the success of your action and how satisfied you are with the outcome
• attaches documentation of the action (photos, outreach materials, lesson plans, etc.)

The “A” project will:

• Explain precisely why you chose the action, including an explanation of what was gained or lost through this choice. Why was this action appropriate to the issue, the exigence, the course, and the student? How did you prepare for potential intended or unintended consequences?
• Describe in specific detail the action taken and include (as an appendix) documentation of that action. Discuss why or why not this action achieved the desired outcome.
• Draw heavily from multiple course readings, including specific concepts, ideas, quotes, and theories. Students will use the course readings to complicate, clarify, or analyze their action, and use their action to test, complicate, or clarify course readings.
• Be grammatically and syntactically flawless.
• Be imaginative, lively, informative, and consequential.
• Please refer to the scoring rubric for more details on the evaluation of your analysis paper.
Daily plans (subject to change as needed!): 

WEEK ONE (1/22-1/26)

Tuesday, January 23
Introductions and syllabus review
Homework for Thursday, January 25:
  • Review syllabus
  • Write down three questions
  • Write down your goals for the course

Thursday, January 25
Return to syllabus, introduction to Dr. Druschke
Homework for Tuesday, January 29:
  • Druschke and McGeary (2016), "Why rhetoric matters for ecology"
  • Cox and Pezzullo (2016) ch. 1 "Studying/Practicing Environmental Communication" [GO BUY THIS BOOK!!!]
  • Cox and Pezzullo, ch. 3 "Symbolic Constructions of Environment"

WEEK TWO (1/29-2/2)

Tuesday, January 30
Introduction to rhetoric and communication
Homework for Thursday, February 1:
  • “The Land-Grant Tradition,” Association of Public and Land Grant Institutions

Thursday, February 1
Introduction to outreach, extension, and land grants
Homework for Tuesday, February 6:
  • W.W. Kellogg (2004), Logic Model Development Guide
  • Hendrickson (2006), A Backwards Approach to Inquiry

WEEK THREE (2/5-2/9)

Tuesday, February 6
Project assessment
Homework for Thursday, February 8:
  • Begin prepping for Exam #1
Thursday, February 8
Review for Exam #1

Homework for Tuesday, February 13:
  • Review readings on science communication, Cooperative Extension, and assessment for Tuesday’s quiz

WEEK FOUR (2/12-2/16)

Tuesday, February 13
Exam #1: Environmental communication, land-grant mission, assessment

Homework for Thursday, February 15:
  • Gather examples of public engagement

Thursday, February 15
Introduction to engagement analysis paper and final project, review of current models of science communication, review examples of public engagement

Homework for Tuesday, February 20:
  • Read Gross (1994), “The roles of rhetoric in the public understanding of science”
  • Read Rowe and Frewer (2005), “A typology of public engagement mechanisms”

WEEK FIVE (2/19-2/23)

Tuesday, February 20
Review of Gross and Rowe and Frewer

Homework for Thursday, February 22:
  • Prepare a short, written statement of interest for the final project (to review during conferences)

Thursday, February 22
INDIVIDUAL CONFERENCES!! No full class period.

Homework for Tuesday, February 27:
  • Read Collins and Evans (2002), “The Third Wave of Science Studies: Studies of Expertise and Experience”

WEEK SIX (2/26-3/2)

Tuesday, February 27
Follow-up about group projects, discussion of Collins and Evans

Homework for Thursday, March 1:
  • Begin preparing for Exam #2

Thursday, March 1
Review for Exam #2
WEEK SEVEN (3/5-3/9)

Tuesday, March 6
Exam #2: Gross, Rowe and Frewer, Collins and Evans

Homework for Thursday, March 8:
- Read Shirk et al. (2012) "Public participation in scientific research: a framework for deliberate design"
- Read Druschke and Seltzer (2012) "Failures of engagement: lessons learned from a citizen science pilot study"
- Read Bonney, et al. (2015) "Can citizen science enhance public understanding of science?"

Thursday, March 8
Review of citizen science readings

Homework for Tuesday, March 20:
- Prepare for 15 m. pitch presentations (5-7 m. of discussion, plus feedback)

WEEK EIGHT (3/12-3/16)

Tuesday, March 13
PITCH PRESENTATIONS

Homework for Thursday, March 15:
- Continue prepping for pitch presentations

Thursday, March 15
PITCH PRESENTATIONS

Homework for Tuesday, March 20:
- Continue prepping for pitch presentations

WEEK NINE (3/19-3/23)

Tuesday, March 20
PITCH PRESENTATIONS

Homework for Thursday, March 22:
- Continue prepping for pitch presentations

Thursday, March 22
PITCH PRESENTATIONS

Homework for Tuesday, April 3 (after spring break):
- Read Cox and Pezzullo (2016) ch. 12 "Public participation in environmental decisions"

WEEK TEN (3/26-3/30)

SPRING BREAK! No classes.
WEEK ELEVEN (4/2-4/6)

Tuesday, April 3
Public participation discussion; last day to submit engagement analysis papers
Homework for Thursday, April 6:
- Read Cox & Pezzullo, ch. 10, "Environmental Justice and Climate Justice Movements"

Thursday, April 5
- Environmental justice discussion
Homework for Tuesday, April 10:
- Read about the Midwest Environmental Justice Organization
- Prepare three discussion questions for our speaker, Maria Powell, MEJO President

WEEK TWELVE (4/9-4/13)

Tuesday, April 10
Guest speaker: Maria Powell, President of the Midwest Environmental Justice Organization
Homework for Thursday, April 12:
- Read Cox and Pezzullo (2016) ch. 13 "Managing conflict: collaboration and environmental disputes"

Thursday, April 12
Conflict and collaboration discussion
Homework for Tuesday, April 17:
- Prepare for review for Exam #3

WEEK THIRTEEN (4/16-4/20)

Tuesday, April 17
Review for Exam #3
Homework for Thursday, April 19:
- Review for Exam #3

Thursday, April 19
Exam #3: Citizen science, public engagement, and environmental justice
Homework for Tuesday, April 24:
- Prepare a 5 minute maximum presentation about your final project. Update the class: how did it go? what worked? what didn’t?

WEEK FOURTEEN (4/23-4/27)

Tuesday, April 24
STUDENT PRESENTATIONS

Thursday, April 26
STUDENT PRESENTATIONS
WEEK FIFTEEN (4/30-5/4)

Tuesday, May 1
STUDENT PRESENTATIONS

Thursday, May 3
FINAL PAPERS DUE AND COURSE EVALS