

**ECO 690P**  
**Public Engagement and Communication**

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**Course Info**

Class meetings: Mondays 11:15a-2:15p  
Room: Holdsworth 211

**Course Description and Justification**

Graduate students in the environmental, life and other sciences receive excellent scientific training but relatively little training in how to be effective in communicating their (and others') work with non-specialist audiences. At a time of increasing societal conflict over and skepticism towards science, it is critical that students are equipped with the knowledge and skills they need to effectively engage and communicate with various publics. Both the practice of science communication and the production of scientific knowledge itself are currently undergoing significant shifts, from primarily top-down, expert-driven models to more inclusive, bi-directional approaches that include co-production and shared ownership. Emerging scholars need a clear understanding and appreciation of the challenges and opportunities that these changes will bring as they start their careers. We will spend the semester learning about **diverse models of public engagement and science communication**, exploring **underlying assumptions about the relationship between scientists and the public**, and developing **new skills to improve translation and dissemination efforts**.

**Course Goals and Learning Objectives**

After taking this course, students will be able to do the following:

- 1) **Appreciate** the importance of taking a deliberate approach to public engagement and science communication;
- 2) **Identify** the various roles scientists can play in supporting public engagement with science;
- 3) Deliberately **choose** the way(s) in which they themselves want to participate in public engagement and/or science communication activities;
- 4) **Develop** project ideas that include public engagement principles, objectives and best practices from the outset of the work;
- 5) Critically **assess** their own and others' engagement and communication efforts;
- 6) More effectively **communicate** their own and others' research with diverse stakeholders.

## Assignments

*Participation (20%):* As a weekly seminar, in-class time is precious, so attendance and active participation in all class sessions is expected. Coming to class prepared is required. This includes making some short presentations about your own work in class, as well as having read all assigned readings with reading reflections completed by 5pm the day before class meets. If you do have to miss a class, let me know in advance if at all possible (everyone gets 1 unexcused absence ‘for free’).

*Reading Reflections and Weekly Mini-Assignments (20%):* Generally due 5pm the day before class meets, students will complete a variety of mini-assignments most weeks (expected to take 30 minutes or less). Sometimes this will consist of writing short *analysis* reflections of assigned readings each week, which you will post to the discussion forums on Moodle. All reflections should end with 1-3 questions that can generate discussion in class the following day. Other mini-assignments might include conducting brief interviews with other junior or senior scientists to discuss issues that come up in class, practicing your communication skills with non-scientists you know (or with strangers) and other similar types of quick out-of-class activities.

*Case Study Presentation (10%):* Working in pairs, students will identify, research and present in class a public engagement or science communication case study at some point during the semester. The primary focus will be on identifying factors that contribute to success and/or failure of particular public engagement or science communication efforts. “Efforts” can be defined broadly, to include everything from an institutionalized program (e.g., UMass’ Public Engagement Project) to a specific campaign, project or piece of communication (e.g., blog post by a scientist). Additional details will be discussed in class.

*Blog or Op-ed (20%):* Blog posts and more formal op-ed pieces are two of the most common and readily accessible (both to scientists and the public) forms of science communication. Although becoming a regular blogger is not necessary or even desirable for many early career scientists and professionals, being able to communicate with diverse audiences in these formats can be extremely rewarding and beneficial. Each of you will identify an existing blog, website or newspaper that you’d like to contribute to and then will write a post/op-ed and attempt to get it published. Your writing will go through multiple rounds of review.

*Public Engagement/Science Communication Event OR Project Proposal (30%):* You have two options for the ‘term project.’

Option A: Working on your own or in groups of up to four (4) students, propose (step 1) and implement (step 2) a real-live public engagement or science communication “event.” You have a lot of creative license with this option. For example, your group might put together a science café on a shared topic of interest (either serving as speakers yourselves or else finding good speakers to contribute), put together a series of video blogs on a topic of broad interest (and find a suitable outlet through which to post them), or partner with a local K-12 school or non-profit organization to put on an age- and audience-appropriate workshop or event. You (and your team, if working in a group) should plan to meet with me by the middle of February to discuss a tentative plan for your project. We’ll decide on the appropriate scope together.

Option B: Working independently, write a 10-12 page term paper in which you explore what the implications would be if you were to incorporate public engagement goals and practices into your next big research project *from the start*. The paper should be well referenced, and it needs to demonstrate that you have truly grappled with the ramifications of “bringing the public into science” as that relates to your own work. At least 25-50% of the paper (3-6 pages) needs to be spent laying out a project proposal that has public engagement at its core but which is also simultaneously cutting-edge science in your field.

## **Reading**

There is no core text for this class. Journal articles, podcasts, videos, blog posts, popular press articles and other materials will be assigned for each class period; all will be accessible via the course website.

## **Grades**

I use a simple summative approach, with the assignments adding up to 100 points. Letter grades are assigned as follows: **A** (94-100), **A-** (90-93), **B+** (87-89), **B** (84-86), **B-** (80-83), **C+** (77-79), **C** (74-76), **C-** (70-73), **D+** (67-69), **D** (64-66), **F** (below 64)

## **Disability Statement**

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services, Learning Disabilities Support Services or Psychological Disabilities Services, you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements.

## **Schedule and Topics (subject to change)**

*Week 1, 1/22* What are “public engagement” (PE) and “science communication” (SC)? Why scientists need to understand PE/SC

*Assignment:* Post reading response, complete survey

*Week 2, 1/29* Scientists’ roles in contemporary American society; finding the role(s) that you are comfortable with (and not); polarization of science in the 21<sup>st</sup> century

*Assignment:* Identify 3 possible outlets for blog/op-ed assignment; Post reading responses

\*\*\*OPTIONAL\*\*\* Friday, 2/2 11:30a-1p Public Engagement with Science event

*Week 3, 2/5* Introduction to storytelling and framing; attend Tim Miller event

*Assignment:* BEFORE class, Prep 2-minute “story”; AFTER class, post 200 word or less “story of your research/topic”

*Week 4, 2/12* Why do scientists engage and communicate (or not)? Individual-, contextual- and institutional-level predictors of SC/PE

*Assignment:* Draft #1 of blog/op-ed due before class, upload via Moodle

*Week 5, 2/26* Best practices for effective SC; Principles of PE; What does public engagement look like in practice? Guest Lee Badgett

*Assignment:* Post reading response

*Week 6, 3/5* Opportunities for outreach in STEM; implications of doing PE/SC for your career

*Assignment:* Term project initial proposals (Option A) or outline (Option B)

## SPRING BREAK

*Week 7, 3/19* Correcting and contending with misinformation about science

*Assignment:* Draft #2 of blog/op-ed due; Post reading response

*Week 8, 3/26* Diverse approaches to PE: citizen science, coproduction and beyond; visit by citizen science and social media expert Hollie Sutherland

*Assignment:* Post reading response; get blog post feedback to peers

*Week 9, 4/2* Major scientific controversies and what can be done; visit by Heidi Bauer-Clapp (Office of Professional Development)

*Assignment:* Post reading response

*Week 10, 4/9* PE/SC case studies

*Assignment:* Case studies; Post reading response

*Week 11, 4/17 (T)* Improving your own communication practice; visit by Amy Schalet (Director, UMass Public Engagement Project)

*Assignment:* Post reading response

*Week 12, 4/23* Looking ahead to the future of SC and PE

*Assignment:* TBA

*Week 13, 4/30* Final project presentations and Course Wrap Up

*Assignment:* Term projects due