

ESM 555-002 (11155)/ESR 655-002 (11159): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2023

Instructor: Cat de Rivera (Environmental Science & Management)

email: derivera@pdx.edu phone: 503 725 9798

Drop-in hours: in SRTC 238e Tuesdays 2-3:00, Thursdays 11-11:45 and Fridays 11:15-12, or by appointment. LMK if you'd rather zoom.

Overview

Welcome to Science Communication! This course kicks off a series of three courses focused on effectively presenting scientific information to scientists and other audiences. Discussions include the role of the speaker in a scientific presentation/dialog, focusing the message you want to communicate, and visual presentation of scientific data (graphics and posters). The second course, ESM 556/ESR 656 addresses scientific talks (e.g., to peers at meetings), including elements of a perfect talk, story boarding, as well as paper and grant writing. The third course, ESM 557/ESR 657, focuses on communicating with the broader public.

Course objectives

This course strives to improve students' ability to communicate science clearly. Objectives include:

- developing a philosophy of science communication, including for teaching;
- determining the core message that should be conveyed, and developing useful supporting components;
- practicing effective use of words and images to convey the results of scientific studies;
- creating a poster that attracts attention and conveys its key message clearly and concisely and in a way that is easily absorbed without much time investment.

Course products

Message Box. All science communication requires distilling your message about your research and honing the key points you need to address in order to explain your question, why the general issue and the specific question you are addressing are important and relevant, findings, and how they help understand or solve the broader issues. Baron designed the Message Box to help scientists prioritize, frame, and navigate information in order to communicate their research better. We will practice developing message boxes for our research projects to help with posters, talks, interviews, or papers. See Baron pp 108-121.

Two-minute topics - It is important for science communicators to present correct information simply, engagingly, and efficiently whether in class, while standing in line, or in a job interview. You will prepare and present a two-minute explanation using one slide on a topic such as, 'evolution,' 'what is the difference between climate and weather,' or 'how old is Earth?' I will assign a topic to you that does not overlap with your expertise because not being an expert makes it easier to decide what information to communicate in just two minutes. After going through the process for these other science topics, one can transfer that same decision-making process to one's own work.

Posters. Posters are a staple of scientific meetings. Posters have unique design challenges of needing to attract passers-by yet be readable at an angle from a meter away by a semi-distracted audience; they also should be designed to convey your findings and their importance whether you are absent or are standing there communicating your key messages and interacting with your poster. They should highlight your central message about a new advance in your work. We will critique posters in the hallways as well as ones you bring in with the goal of identifying what layout and design elements are most effective and which ones should be avoided.

ESM 555-002 (11155)/ESR 655-002 (11159): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2023

Order of topics (with estimated dates; progression may be slowed or accelerated)

(9/29) Introduction. What is science? Goals of presenting? What is teaching?

Assignments - read Freire chapter 2 and any of the Bell Hooks chapters you think is most relevant for you (see links below) and prepare to share what you learn; create a metaphor for teaching or sci com outreach

(10/6) Freire discussion; presenting to different audiences; introduction of message box.

Assignments: develop your message box; develop a headline title for your research for Highlights, one for Wired, one for Discover

(10/13) Use and critique message box; elements of visual presentation; assign 2-min topics; share out on titles

Assignments: improve your message box, including with it a few pieces of supporting evidence; prepare draft 2-min presentation graphic (graphic only at this point).

(10/20) Refined message box share out; review 2-minute topic graphics

Assignment: refine graphic, prepare 2-min presentation oral component.

(10/27) start 2-min topic presentations

Assignment: find a source about posters or other visual presentation, and read it with the goal of sharing something useful with the class

(11/3) share-out about visual presentation; 2-min topic presentations; Poster goals & tips; poster exploration tour

Assignment: refine (or prepare) a poster or slide of one to share w/ class

(11/10) No Class: Veteran's/Armistice Day Observed

(11/17) final 2-min presentations; poster presentations (2 posters to class; others in small groups)

Assignments: Find a news story about a climate change effects (e.g., wildfire...) or about climate change in general. Read it and identify if it makes you feel discouraged or overwhelmed or not and why. Also, read an article about communicating about climate change (E.g., anything on: <https://yaleclimateconnections.org/topic/communicating-climate/> ; or Moser Communicating Climate Change) and be prepared to discuss it during our final class.

(11/24) No Class: day after Thanksgiving

(12/1) final poster presentations; using your poster as a tool; Discuss the assigned article and talks about climate change communication; Closing

No final, no class during Final's Week.

Readings: Complete readings and other assignments by the next class meeting.

Freire, Paulo. Pedagogy of the Oppressed, Chapter 2

<https://envs.ucsc.edu/internships/internship-readings/freire-pedagogy-of-the-oppressed.pdf>

Hooks, Bell. Teaching to Transgress – chapter of your choice: [chrome-](#)

[extension://efaidnbmnnnibpcajpcgclefindmkaj/https://academictrap.files.wordpress.com/2015/03/bell-hooks-teaching-to-transgress.pdf](https://academictrap.files.wordpress.com/2015/03/bell-hooks-teaching-to-transgress.pdf)

ESM 555-002 (11155)/ESR 655-002 (11159): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2023

Moser SC. Communicating climate change: history, challenges, process and future directions. Wiley Interdisciplinary Reviews: Climate Change. 2010 Jan 1;1(1):31-53. Or article of your choice on this topic such as any on: <https://yaleclimateconnections.org/topic/communicating-climate/>

Canvas: Course information will be posted on canvas.pdx.edu. If you don't have an Odin ID, go to <https://portlandstate.atlassian.net/servicedesk/customer/portal/2/article/44702820>

Grading & participation: This course is graded with P/NP or, if you change it with the registrar, letter grades. To Pass, participate in at least 6 of the 8 meetings and complete and discuss all assignments, demonstrating that you are applying the lessons to your work. If you are opting for a letter grade, and aim to earn an A, participate in at least 7 of the 8 meetings and excel at the assignments (see rubrics on canvas). For this course, participation means that you attend, contribute by sharing your work and ideas, including thoughtful critique of the work of others, and show respect to all. Collaborative learning practices are a substantial part of your educational experience in this course so your daily participation in small groups as well as to the entire class discussions are essential to what you and all the class learns.

If you ever feel unable to attend class due to illness, high anxiety, or other reasons, please stay home. All students get one pass for late assignments. If you are sick, please email or upload your assignment. Please note the content outlined below is for an ideal situation and if covid increases again, some changes may be needed and will be noted on the Canvas course announcements page.

Instructor Inclusivity Statement: It is my intent that students from all backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be realized as a resource and strength. I aim to present materials and activities that are respectful of diversity including of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and religion. I encourage and appreciate your suggestions to help me or the course better realize these ideals: If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. Similarly, please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, let me know of any religious or other events that may conflict with any of our class meetings so we can make arrangements for you. My goal is to create a learning environment that is equitable, inclusive, and welcoming and that fosters mutual respect and full participation for all students.

Land Acknowledgement: I respectfully acknowledge the land where Portland State University is located is the unceded territory and ancestral lands of the Multnomah, Kathlamet, Clackamas, Tumwater, Watlala bands of the Chinook, the Tualatin Kalapuya and other Indigenous nations of the Columbia River. I pay my respects to their elders past and present. Please take a moment to consider the many legacies and ongoing violence, displacement, migration, and settlement of this land where we gather for class. Please also use this course to consider ways to communicate about the environment to help and respect the land and its people.

Resources and conduct

It is your responsibility to be familiar with the PSU Code of Conduct, by which we are bound: <http://www.pdx.edu/dos/codeofconduct>. Students in the EES PhD program and in the ESM masters programs must complete ethics training: <https://sites.google.com/a/pdx.edu/research/integrity/responsible-conduct>

ESM 555-002 (11155)/ESR 655-002 (11159): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2023

DRC: The Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment. If you have a disability that may affect your work in this class and need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. DRC is located in 116 Smith Memorial Student Union, 503-725-4150, drc@pdx.edu, <https://www.pdx.edu/drc>. If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations.

Advising & Career Services: <https://www.pdx.edu/careers/>

Library Research Tutorials: <http://guides.library.pdx.edu/home/howto> <http://guides.library.pdx.edu/biology>

Writing Center: for class assignments, resumes... <https://www.pdx.edu/writing-center/> Cramer rm 188;

Computing needs: The [library has laptops and google chromebooks for check out](#) for fall quarter, and will deliver the equipment to your home. Please remember to note that your request is for the fall quarter so you receive the appropriate loan period. **Software needs:** PSU has made many software licenses available to the PSU community for use on personal machines to facilitate remote learning and research through the [virtual computer lab](#). PSU students, faculty, and staff can also access [Microsoft Office](#) suite on their personal machines.

Counseling and other health: SHAC: <https://www.pdx.edu/health-counseling/>

Food assistance: <https://www.pdx.edu/basic-needs-hub/food-assistance>

Student support services, including Multicultural Centers: <https://www.pdx.edu/diversity/student-support-programs> (e.g., <https://www.pdx.edu/cultural-resource-centers/la-casa-latina-student-center>; [Queer Resource Center: \[www.pdx.edu/queer\]\(http://www.pdx.edu/queer\); Veterans <https://www.pdx.edu/veterans-resource-center/>](#))

Title IX: Portland State is committed to providing an environment free of all forms of prohibited discrimination and sexual harassment (sexual assault, domestic and dating violence, and gender or sex-based harassment and stalking). If you have experienced any form of gender or sex-based discrimination or sexual harassment, know that help and support are available. PSU has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and on-housing accommodations, helping with legal protective orders, and more. Information about PSU's support services on campus, including confidential services and reporting options, can be found on PSU's Sexual Misconduct Prevention and Response website at: <http://www.pdx.edu/sexual-assault/get-help> or you may call a confidential IPV Advocate at 503-725-5672. You may report any incident of discrimination or discriminatory harassment, including sexual harassment, to either the [Office of Equity and Compliance](#) or the [Office of the Dean of Student Life](#).

PSU faculty and instructors are **required to report** information of an incident that may constitute prohibited discrimination, including sexual harassment and sexual violence. This means that if you tell me about a situation of sexual harassment or sexual violence that may have violated university policy or student code of conduct, I have to share the information with my supervisor, the University's Title IX Coordinator or the Office of the Dean of Student Life. Please complete the required student module [Creating a Safe Campus](#) in Canvas.

FERPA: The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. Â§ 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. Under FERPA, students have the right to inspect and review their education records maintained by the school. Schools are not required to provide copies of records unless, for reasons such as great distance, it is impossible for parents or eligible students to review the records. Schools may charge a fee for copies. Students have the right to request that a school correct records that they believe to be inaccurate or misleading. If the school decides not to amend the record, the student has the right to place a statement with the record setting forth his or her view about the contested information. Generally, schools must have written permission from the student in order to release any information from a student's education record. However, FERPA allows schools to disclose those records, without consent, to certain parties or under the specific conditions (34 CFR Â§ 99.31): for example, school officials with legitimate educational interest; other schools to which a student is transferring; financial aid officers; state and local authorities in cases of health and safety emergencies; *etc.* Schools may disclose, without consent, "directory" information such as a student's name, address, telephone number, unless the student has requested that the school not disclose directory information about them. For additional information about the law, see these sites: www.pdx.edu/registration/guidelines-release-studentrecords

ESM 555-002 (11155)/ESR 655-002 (11159): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2023

www.pdx.edu/dos/ferpa-facts www.pdx.edu/registration/student-records-privacy
http://www.pdx.edu/sites/www.pdx.edu.education/files/gse_handbook_student_privacy