

ESM 555-002 (11241)/ESR 655-002 (11246): Science Communication I

SRTC b1-82, Fridays, 10-11:05 pm, Fall 2019

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office hours: Tuesdays 2-3:00, Fridays 11:10-12, plus by appointment, in SRTC 238e

Overview

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. We often also offer ESM 557/ESR 657, which focuses on communicating with the public.

Course objectives

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

- developing a philosophy of science communication;
- 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 (in the classroom, while standing in line at the theater, during job interviews...) to present correct information simply, engagingly, and efficiently. In this exercise, you will be assigned a short topic for which you are to prepare and present a two-minute explanation using one visual (one slide). Some example topics: What is evolution? What is the difference between climate and weather? How old is Earth? I will assign a topic to you that is not overlapping with your area of expertise because not being an expert makes it easier to decide what information to communicate in just two minutes. Once going through the process for these other science topics, one then 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.

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

(10/4) What is science? Goals of presenting? What is teaching?

Assignment - read Freire chapter 2, metaphor for teaching or sci com outreach

(10/11) Freire discussion; presenting to different audiences; introduction of message box.

Assignment: develop your message box

(10/18) Practice and critique message box; elements of visual presentation; assign 2-min topics

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

(10/25) Refined message box; review 2-minute topic graphics

Assignment: refine graphic, prepare 2-min presentation.

(11/1) finish 2-min topic graphics; 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; watch: <https://www.youtube.com/watch?reload=9&v=aFTeSJXr7w>

(11/8) 2-min topic presentations; share-out about visual presentation; Poster goals & tips, poster exploration tour

Assignment: get/ prepare poster or slide of one to share w/ class.

(11/15) final 2-min presentations; poster presentations

Assignment: (optional) refine poster as is helpful to you

(11/22) poster presentations; using your poster as a tool

Assignment: read Moser Communicating Climate Change; watch Steve Schneider

<https://www.youtube.com/watch?v=SAvb6Yiicjw&feature=youtu.be> or any of the other segments of this; listen to Deconstructing a Climate Skeptic: The Marc Morano Podcast from America Adapts the Climate Change Podcast. https://podcasts.apple.com/us/podcast/america-adapts-the-climate-chang_e-podcast/id1133023095?i=1000450793427

(11/28) No Class: day after Thanksgiving

(12/6) Discuss climate change communication hw; discuss use of jargon; Closing

No final.

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

Freire, Paulo. Pedagogy of the Oppressed, Chapter 2

https://selforganizedseminar.files.wordpress.com/2011/08/freire_pedagogy_oppressed1.pdf

Moser SC. Communicating climate change: history, challenges, process and future directions. Wiley Interdisciplinary Reviews: Climate Change. 2010 Jan 1;1(1):31-53.

D2L: Course information will be posted on d2l.pdx.edu. If you don't have an Odin ID, go to

<http://oit.pdx.edu/set-up-odinacct>

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 7 of the 9 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

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aim to earn an A, participate in at least 8 of the 9 meetings and excel at the assignments (see rubrics on d2l). 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're sick and contagious, please don't come to class. All students get one pass for late assignments. If you are sick, please email or upload your assignment.

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>

DRC: PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment.

If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The 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.
- For information about emergency preparedness, please go to the [Fire and Life Safety webpage](https://www.pdx.edu/environmental-health-safety/fire-and-life-safety)(<https://www.pdx.edu/environmental-health-safety/fire-and-life-safety>) for information.

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](#).

Please be aware that all PSU faculty members 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

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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. For more information about Title IX please complete the required student module [Creating a Safe Campus](#) in your D2L.

Veterans: If you are a Veteran with questions about University services or need for assistance with your transition to campus life, contact Chris Goodrich, at the Office of Veterans' Services, SMSU room 425.

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

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

<http://guides.library.pdx.edu/biology>

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 which 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/dos/ferpa-facts www.pdx.edu/registration/student-records-privacy

www.pdx.edu/registration/guidelines-release-studentrecords

http://www.pdx.edu/sites/www.pdx.edu.education/files/gse_handbook_student_privacy