BIME 585-587
Communication & Professional Development in BHI

Instructors: John Gennari (he/him/his) & Trevor Cohen (he/him/his)
Class times: Wed, 10:30am to 11:50am
Office hours: by appointment

Course website: https://canvas.uw.edu/courses/1476508

Credit: One credit, CR/NC

Why communication?

Which skills and attributes do you think of as associated with career success in science? For example, one may think of the creative thinking and mathematical fluency of Richard Feynman; or perhaps the persistence and vision of Geoffrey Hinton pursuing neural networks for decades before their utility was widely recognized. While creativity, passion, persistence and vision can all drive a scientific career forward, an often-underestimated skill is the ability to communicate, which is arguably at least as important—if not more important—than these other attributes.

Any creative endeavor involves the development of new ideas: ideas whose value to society may not yet be apparent. Thus, the creator must communicate and convince others of the value of their ideas. In academic research, this means the ability to write convincing, compelling grants to secure support for these ideas in the form of research funding. Beyond academia, this may mean communicating (orally or in writing) the value of the ideas and aligning them with institutional priorities to secure resources. Both require developing and *effectively communicating* persuasive arguments for the significance, innovation and potential impact of a proposed research project. Research findings emerging from such projects must be disseminated via scientific conferences and journals as research papers and scholarly presentations. The ability to clearly communicate ideas in writing (including interacting with peer reviewers) and through public speaking will extend the reach and enhance the impact of your work. Communication is also an essential component of leadership and collaboration, and both are important for a successful research career. Finally, the ability to function effectively in an interdisciplinary team by communicating across disciplinary boundaries is a fundamental skill in biomedical informatics.

The primary purpose of this course is to foster the development of core communication-related skills—both written and audiovisual—with multiple opportunities to practice, learn from peer feedback, and improve. Through this process, you will learn principles of effective written and verbal communication that will provide a basis for your continued improvement of these skills throughout your career. Conversely, you will also have multiple opportunities to *provide* feedback, which is a core skill of increasing importance when progressing to advisory or supervisory roles.

The class will also cover other topics that pertain to the ability to function effectively as a biomedical informatician but may at times fall outside the scope of formal training in the sciences, including strategies

for effective leadership, management and collaboration, and ethical challenges relating to research and practice in the field.

A key pedagogical approach for this course is respectful, collaborative discussion. As such, we strive to follow practices that enable effective discussion-based learning (thanks to BIME Professor Emeritus David Masuda for this eloquent listing):

1) My viewpoint is important. Share it to enrich others.
2) My colleagues' viewpoints are important. Listen to them without judging them.
3) Extend the same listening respect to others I would wish them to extend to me. We all have room to develop as active, engaged, non-judgmental listeners.
4) Recognize that I might miss things others see, and see things others miss.
5) Raise my views in such a way that encourages others to raise theirs.
6) Inquire into others views while inviting them to inquire into mine.
7) Ask questions when I do not understand something.
8) Surface my feelings in such a way that makes it easier for others to surface theirs.
9) Challenge what was said or done, rather than making assumptions about an individual.
10) Be willing to take risks and move outside my comfort zones.

"If you care about being thought credible and intelligent,
do not use complex language where simpler language will do."
— **Daniel Kahneman, <u>Thinking, Fast and Slow</u>**

"The road to hell is paved with adverbs."
— **Stephen King, <u>On Writing: A Memoir of the Craft</u>**

<u>Outcomes</u>

Our goals are for you to improve your skills in oral, written and visual communication. In addition we aim for you to improve in your ability to provide feedback to peers to improve *their* communication skills. You will also learn about career paths of previous alumni, ethical dilemmas that may arise in research and practice, and how to function effectively as a member or leader of a multidisciplinary research team.

<u>Schedule, activities and deliverables</u>

The course takes place over three quarters, and a week-by-week breakdown of activities will be provided on the course Canvas page. In broader strokes than this, the emphasis in each quarter will be as follows.

In **Fall**, we will focus initially on scientific writing. While we will cover topics such as authorship and plagiarism, a particular focus will be on the identification and application of principles of effective writing in science, and in general. Here, you will be tasked with writing a short scientific abstract, and will again have the opportunity to provide feedback to others. Midway through the quarter, we will have a session that focuses on career trajectories in the field, and on your own plan for development of a researcher and/or practitioner. In the remainder of the quarter, we will switch focus to oral communication skills, with the initial deliverable being a short (3-minute) presentation on a subject of your choice – ideally not an academic one. The idea in this initial introduction to oral presentation will be to identify and promote ways to present

that are engaging and effective. Beyond your own talks, we will view and discuss some exemplary presentations. Of note, you will also have the opportunity to provide constructive feedback to your classmates, and revise your own presentation in response to feedback you have received.

"I would advise anyone who aspires to a writing career that before developing his talent he would be wise to develop a thick hide."
—Harper Lee, WD

"I still have a writing session every day. It's another thing that organizes your mind. The coffee goes here. The pad goes here. The notes go here. My writing technique is just: You can't do anything else. You don't have to write, but you can't do anything else. The writing is such an ordeal. That sustains me."
- **Jerry Seinfeld**, https://www.nytimes.com/2020/05/04/arts/television/jerry-seinfeld-netflix.html

In **Winter**, we will address some of the interpersonal and ethical aspects of biomedical informatics work. We will discuss challenges inherent in multidisciplinary disciplines, ethical issues that may arise in research and practice, as well as specific issues pertinent to life as a trainee. Then we will build on the general presentation skills developed in the Fall quarter to focus on scientific presentations, including multimedia elements and content-agnostic skills to make presentations effective and engaging. You will have the opportunity to develop 10-15 minute scientific presentations, receive feedback to improve your presentation skills, and provide constructive feedback to others in the class.

"What you have to do is to get into the heart. And how do you get into the heart? With stories."
Dr. Jane Goodall at the World Economic Forum

In **Spring**, you will review the scientific writing content covered in Fall, and apply this to develop extended scientific abstracts. Here again, you will receive and provide feedback. We will proceed to discuss the principles and practice of instructional design, with the (voluntary) opportunity to develop a segment of a class for a "teaching practicum" session for those who are considering careers as educators. With respect to presentation, we will practice two other important forms of oral communication beyond those addressed in the class previously: the "elevator speech" – a concise but memorable overview of proposed or ongoing research and the ubiquitous brief introduction to colleagues. We will also discuss the scientific "job talk", a rite of passage en route to academic work. Also covered in this quarter will be topics related to leadership, collaboration and conflict management.

"Teaching is not entertainment, but it is unlikely to be successful unless it is entertaining"
— Herbert A. Simon, Models of My Life

Assessment

All three quarters of the course are graded as credit/no credit. To receive credit in each quarter, you will need to:

1. Meaningfully participate in nine of ten class sessions
2. Complete all assignments

Academic Integrity

Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty and personal integrity. UW is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website: https://www.washington.edu/cssc/.

Access and Accommodation

Your experience in this class is important to us. If you have already established accommodations with Disability resources for Students (DRS), please communicate your approved accommodations to us at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but are not limited to mental health, attention- and learning-related issues, vision, hearing or physical impacts) you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions.

Diversity, Equity and Inclusion

Diverse backgrounds, embodiments and experiences are essential to the critical thinking endeavor at the heart of university education. We seek to ensure all students are fully included in each course, and strive to create an environment that reflects community and mutual caring, while we ally with others in combating all forms of social oppression, including those based on age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status and veteran status. We all have the privilege of learning together, and as such we have the responsibility to engage in dialogue in a way that supports learning for all of us together.