Effective communication skills in genetics
Course Syllabus

Course number: 01:447:430

Class location: Livingston Campus: Lucy Stone Hall, Room B105

Class meeting times: Mondays and Wednesdays from 1:40-3:00pm

Instructor: Gary Heiman, PhD
Office address: Life Science Building, Room 125, 145 Bevier Rd, Piscataway, NJ
Phone: 732-445-1027 Ext: 40033 NOTE: The preferred way to contact Dr. Heiman is by e-mail. The phone should be used only for absolute emergencies!!!
Email: heiman@biology.rutgers.edu
Office Hours – Mondays from 9:00am until 10:30am and by appointment. If for some reason I cannot make my office hours, I will announce this on the SAKAI site. Appointments, outside of normal office hours, will be made ONLY by email.

Catalog description: Communication is an essential part of science. Whether it is communicating research findings to other scientists or conveying complex concepts to a lay audience, a scientist must have effective communication skills in order to succeed. Communication in science is typically through publications, posters, or oral presentations. The goal of this course is provide students practice in effectively communicating scientific findings. This includes preparing and revising an introduction for scientific papers, writing a research description for general audience, and preparing and giving presentations (both oral and poster).

Course Goals: Students are expected to:

(1) effectively incorporate critiques from peers and faculty in their revision of written and oral communication,

(2) effectively describe their research, using relevant discipline-specific terminology with precision, accuracy & purpose,

(3) accurately and effectively present advanced scientific concepts through oral presentations and poster formats.

Required textbook
Scientific Writing and Communication: Papers, Proposals, and Presentations, Angelika H. Hofmann, ISBN: 978-0195390056

Grading system
Grading will be as follows. A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 0-59
25%- Quizzes, class participation and appropriate critiques of peer written papers
25%- Writing section: Revised paper, project narrative lay description and Specific Aims
25%- Oral presentation and presentation critiques
25%- Poster section

Important: points will be taken off for not following instructions or not meeting deadlines.

Academic integrity policy
Cheating and plagiarism will not be tolerated. In accordance with departmental and University Policy, violations of academic integrity will immediately be referred to the dean. See the following website for details: http://academicintegrity.rutgers.edu/integrity.shtml

Class Attendance
Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. An email is automatically sent to the course instructors.

Rules of conduct
No cell phones are allowed in class. Laptops are permitted for the purpose of taking notes but not surfing the internet or playing games. Such behavior is distracting to other students in the class. If found violating this policy, a student will no longer be allowed to bring his/her laptop to class. Recording of lectures or classmate presentations are not permitted.

What is the class like?
This is an applied course to help students understand the format and practice of, scientific communication. This includes preparing and revising an introduction for scientific papers, writing a research description for general audience, and preparing and giving presentations (both oral and poster). The course is divided into three sections:

Section 1- Writing and incorporating critiques into revisions
The goal of this section is to learn about scientific writing principles, understand specific aims of a research proposal and to be able to incorporate critiques into their writing. To give a structure to the course, we will begin by discussing the process of a research study. We will review the grant proposal process, conducting the research once it is funded, and ultimately publicizing the results in scientific journals and conference abstracts (both oral and poster format). For the grant review process, we will discuss the components of grant proposal, focusing on the specific aims/hypotheses. If possible, students will obtain the specific aims from their respective lab to help them understand the larger goals and hypotheses of the lab.

Readings: There will be assigned readings that pertain to the topics we will cover in class. We will NOT cover all areas that are presented in the chapters and you are expected to read the assigned chapters.

Lectures and quizzes: There will be a couple of short quizzes from the material covered in class and in the readings. Questions will be taken directly from the examples within the chapters or from exercises at the end of the chapters.

New writing exercise: You will write a short lay narrative, limited to 3-5 sentences, describing your research project. This project narrative should use lay language, something that a non-scientist could understand. On the same page, you will write the specific aims of your project. In collaboration with your research supervisor, you will develop and write these specific aims using the format presented in class.

Edited writing exercise: Finally, you will use what they have learned about scientific writing to revise the introduction from the paper that they submitted to their research sponsor in the previous semester. Students will be assigned to a small group, probably 4 per group, to edit their paper. This editing will occur both outside of class and during class. In the end, you will submit a final revised paper that will

include a section describing areas you need to improve in your writing (i.e, self-evaluation of what learned about your writing during this process). This paper will be reviewed by the course professor and sent to your research supervisor.

Section 2- Experience in preparing, giving, and analyzing scientific oral presentations
Using the material we reviewed in class and from the relevant textbook chapters, you will prepare an oral presentation. You will be assigned a date to give the presentation. Classmates will critique each presentation using a specific rubric. Each of the classmates will upload these critiques to a site.

Section 3- Creating a scientific poster
Through an iterative process, students will create a poster describing their research project or independent study. At the end of class, the posters will be printed and there will be a poster presentation day. Mimicking a poster session at a scientific conference, faculty members will approach the student and ask questions about the poster.