Effective communication skills in genetics  
Course Syllabus (Spring Semesters)

Course number: 01:447:430

Class location: Busch Campus- Science and Engineering Resource Center (SERC)-220

Class meeting times: Tuesdays and Fridays from 12:00 PM - 1:20 PM

Instructor: Gary Heiman, PhD  
Office address: Life Science Building, Room 125, 145 Bevier Rd, Piscataway, NJ  
Phone: 848-445-9576: The preferred way to contact Dr. Heiman is by e-mail. The phone should be used only for absolute emergencies!!!  
Email: heiman@dls.rutgers.edu  
Office Hours – Tuesdays from 10:00am until 11:00am and by appointment. Let me know by email if you plan to come to office hour. 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.

SAS Core Learning Goals:
WCr- Respond effectively to editorial feedback from peers, instructors, &/or supervisors through successive drafts & revision  
WCd- Communicate effectively in modes appropriate to a discipline or area of inquiry.

Departmental Learning Goal:  
Students will be able to communicate their discoveries through a written article appropriate for publication in a peer-reviewed Genetics journal, and through talks or posters appropriate for scientific meetings.

Required textbook  
Note: if you order from Oxford University Press, you can get a 20% discount by using the following code: BURNS2016.
Academic integrity policy
Cheating and plagiarism will not be tolerated. In accordance with Departmental and University Policies, violations of academic integrity will immediately be referred to the dean. Violations include: cheating, fabrication, plagiarism, denying others access to information or material, and facilitating violations of academic integrity. See the following website for details:
http://academicintegrity.rutgers.edu/academic-integrity-policy/

Class Attendance (IMPORTANT-READ CAREFULLY)
Students are expected to attend and be punctual for all classes. Attendance will be taken at the beginning of class. Class participation points are taken off for each missed class. Overall grade points are ALSO taken off for habitual lateness or frequent absences (see below). If you expect to miss a class, you MUST 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 instructor.

Grading system
Grading will be as follows. A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 0-59
12%- Quizzes
13%- Class participation
25%- Writing section:
   1) Project narrative, research question and hypothesis (PRH) – 8%
   2) Editing group members’ introductions- 8%
   3) Final revised introduction- 9%
25%- Oral presentation
   1) Student critiques- 10%
   2) Professor critique- 15%
25%- Poster section: final poster and poster session

Additional important grading notes:
1) Points will be taken off for not following instructions or not meeting deadlines!
2) Frequent absences:
   a. If a student has more than 3 unexcused absences, then they will suffer a 10% deduction from overall cumulative grade for each additional absence.
   b. If a student has more than 5 absences (unexcused and excused), then they will need to withdraw the course (if the sixth absence occurs prior to the withdrawal deadline) or fail the course (if the sixth absence occurs after the withdrawal deadline).

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 your 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 project narrative, research question, and 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 few 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 research question and hypothesis for your project. In collaboration with your research supervisor, you will develop and write this exercise using the format presented in class. In class, we will review and edit each student’s project narrative.

Edited writing exercise: Finally, you will use what you have learned about scientific writing to revise the introduction you submitted to your research sponsor in the previous semester. Students will be assigned to an introduction editing group, typically 8-10 per group. This editing will occur both outside of class and during class time. In the end, you will submit a final revised introduction 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 possibly 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. Professor and 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.

Information for Student-Wellness Services:
Just In Case Web App (http://codu.co/cee05e)
Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)
(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ rhscaps.rutgers.edu/
CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students’ efforts to succeed at Rutgers University. CAPS offers a variety of
services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

**Violence Prevention & Victim Assistance (VPVA)**
(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / vpva.rutgers.edu/
The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

**Disability Services**
(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854  (https://ods.rutgers.edu/)
The Office of Disability Services works with students with a documented disability to determine the eligibility of reasonable accommodations, facilitates and coordinates those accommodations when applicable, and lastly engages with the Rutgers community at large to provide and connect students to appropriate resources.

**Scarlet Listeners**
(732) 247-5555 / http://www.scarletlisteners.com/
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.