For Scientific Communication Skills

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Time: Thursday 11-12:50, A522 Crabtree Hall
Prerequisite: None
Office Hours: By appointment

Catalogue Description
This course is meant to help students develop oral, visual and written scientific communication skills and to familiarize students with research resources. Students may use their own research topic, including work on a thesis or dissertation, or help will be provided in selecting one.

Course rationale
Biostatisticians help scientists and other researchers formulate research questions, make decisions based on data and discuss and synthesize results. To fulfill that role, biostatisticians must be able to effectively communicate to a variety of audiences. These communication skills include listening to others describe their work and their problems, translating problem statements made by others into statistical questions, formulating and solving the problems quantitatively using statistical methods for design and analysis, and reporting, discussing and synthesizing results.

This course was developed to strengthen students’ communication skills using different scientific presentation formats (i.e., oral, poster, written). Not only will this course help students in their course work during their graduate studies but also as they transition to their professional lives: communicating at scientific meetings, grant writing, writing manuscripts for professional journals, drafting resumes, interviewing, and sharing techniques with colleagues.

Objectives
By the end of this course, each student will be able to:
- Perform effective literature reviews and accurately cite relevant literature
- Perform critiques of written, oral and visual materials
- Incorporate suggestions and criticisms from critiques into their own work
- Develop written and oral communications/presentations describing and interpreting statistical analyses for different types of audiences

MPH Competencies
This course will help students to meet cross disciplinary competencies developed by the Association of Schools of Public Health (ASPH) (http://www.asph.org/userfiles/version2.3.pdf) in the domains of
Communications and Informatics and Professionalism. This course will assist students in development of the following competencies from those domains:

**Communications and Informatics**
1. Collaborate with communication and informatics specialists in the process of design, implementation, and evaluation of public health programs.
2. Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.
3. Use information technology to access, evaluate, and interpret public health data.

**Professionalism**
1. Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g. researchers, practitioners, agencies and organizations).
2. Value commitment to lifelong learning and professional service including active participation in professional organizations.

**Ground Rules for Class**
To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student’s own private use.

While students are encouraged to discuss course content with each other, students must do their own assignments. Copying assignments from other students will NOT be tolerated.

Please be on time and turn off cell phones during class.

**Academic Integrity**
All students are expected to adhere to the school’s standards of academic honesty. Any work submitted by a student for evaluation must represent his/her own intellectual contribution and efforts. The GSPH policy on academic integrity, approved by EPCC on 10/14/08, which is based on the University policy, is available online at [http://www.publichealth.pitt.edu/interior.php?pageID=126](http://www.publichealth.pitt.edu/interior.php?pageID=126). The policy includes obligations for faculty and students, procedures for adjudicating violations, and other critical information. Please take the time to read this policy.

Students committing acts of academic dishonesty, including plagiarism, unauthorized collaboration on assignments, cheating on exams, misrepresentation of data, and facilitating dishonesty by others, will receive sanctions appropriate to the violation(s) committed. Sanctions include, but are not limited to, reduction of a grade for an assignment or a course, failure of a course, and dismissal from GSPH.

All student violations of academic integrity must be documented by the appropriate faculty member; this documentation will be kept in a confidential student file maintained by the GSPH Office of Student Affairs. If a sanction for a violation is agreed upon by the student and instructor, the record of this agreement will be expunged from the student file upon the student’s graduation. If the case is referred to the GSPH Academic Integrity Hearing Board, a record will remain in the student’s permanent file.

**Accommodation for Students with Disabilities**
If you have any disability for which you may require accommodation, you are encouraged to notify both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union (412-648-7890) during the first two weeks of the term.

**Course Website**
All readings and course material will be found on the Blackboard site for this class. The website for Blackboard is http://courseweb.pitt.edu. Your login ID and password are the same as for your Pitt account.

Course Requirements
Attendance and Participation (20 points)
Students are expected to attend class and come prepared to participate in discussions and activities.

Writing communication component (45 points)
One-two paragraph summary of project: 5 points
References for project: 5 points
Abstract: 5 points
Two-three page project description (initial): 5 points
Peer critiques: 5 points
Project description revision: 15 points
Biosketch : 5 points

Visual communication component (20 points)
Poster presentation: 10 points
Peer critiques: 5 points
Seminar critique : 5 points

Oral communication component (15 points)
Oral presentation: 10 points
Peer critiques: 5 points

Late assignments will be accepted only if an extension has been approved by the instructor in advance. Because carrying out these assignments is critical to reinforce the course topics, completion of them is mandatory.

Grade scale
98-100: A+
90-97: A
89: A-
85-88: B+
80-84: B
79: B-
70-78: C
<70 F

Recommended Texts

Course Outline

Written Communication Component

Lecture 1: Course Overview
8/29
By the end of this class, each student will be able to:
• Understand the purpose and goals of this course
• Review scenarios where communication skills are critical
• Discuss and review common grammar mistakes

Class Activities:
• Introductions
• Review of the syllabus, course expectations and course organization
• Discussion of potential topics
• Discuss types of and audiences for communication
• Review and correct grammar errors

Handouts
Durant Promotion
Use of definite and indefinite articles
Hopkins, W. GUIDELINES ON STYLE FOR SCIENTIFIC WRITING. Sport science 3(1), sportsci.org/jour/9901/wghstyle.html, 1999

Assignment 1
• Write 1-2 paragraphs describing your topic for the semester

Lecture 2: Communicating to an Audience
9/5
By the end of this class, each student will be able to:
• Understand audience types
• Understand how to communicate to different audiences

Class Activities:
• Discuss audience types and expectations
• Compare writing styles/forms for different audiences

Handouts
Introduction to Journal-Style Scientific Writing

Lecture 3: Sally Morton Guest Lecture
9/12

Lecture 4: Literature Reviews (with Barb Folb)
9/19
By the end of this class, each student will be able to:
• Understand the role of a literature review in a project
• Understand how to use the library resources for literature reviews

Class Activities:
• Review of University library resources (in library)
• Appropriate citing (in library)

Assignment 2
• Identify 3-5 references related to topic of interest
• Provide reference list in appropriate format

Lecture 5             Forms of Written Communication
9/26
By the end of this class, each student will be able to:
• Understand the information important in grant writing
• Understand the difference between various forms of written communication
• Understand the NIH submission, review, scoring, and funding procedures

Class Activities:
• Grant quiz
• Review mechanisms, scoring, review criteria
• Discuss forms of written communication
• Compare forms of writing
• WRITE project purpose for lay audience

Assignment 3
• Write your biosketch

Lecture 6             Citation databases (with Barb Folb)
10/3              Paraphrasing

By the end of this class, each student will be able to:
• Understand how to properly paraphrase and avoid unintentional plagiarism
• Understand the available citation databases and how to use them

Class Activities:
• Paraphrasing exercise
• Real time review of EndNote

Assignment 4
• Write 2-3 page summary of background, significance and objective for student research topic
Lecture 7  Manuscripts, Critiquing, Revising and Resubmitting
10/10
By the end of this class, each student will be able to:

- Understand how scientific manuscripts are structured
- Discuss the role and importance of an abstract
- Understand what is involved in critiquing writing
- Understand how to properly support points in a critique
- Perform critiques
- Understand the importance of revising work
- Understand how critiques improve writing
- Understand how to respond to critiques

Class Activities:

- Critique examples
- Peer critiques of short paper
- Discuss response to comments

Handouts
Reviews and Critiques

Assignment 5
- Revise and resubmit short papers

Lecture 8  Communicating Statistical Ideas & Proofreading
10/17
By the end of this class, each student will be able to:

- Be able to review written documents for accuracy and style consistency
- Be able to evaluate various ways to present statistical ideas

Class Activities:
- Proofread documents

Handouts
Documents to proofread

Visual Communication Component
Lecture 9  Introduction to Visual Communication
10/24
By the end of this class, each student will be able to:

- Understand how to tailor an poster presentation for a specific audience
- Understand various styles for poster presentations
Class Activities:

• Discussion of audiences and styles
• Discussion of effective presentation development

Handouts
Poster presentation style guides
Writing and Designing Research Posters

Assignment 6
• Poster presentation (due lecture 11)

Lecture 10 Poster Presentation Examples
10/31
By the end of this class, each student will be able to:

• Critique poster presentations
• Understand the difference between effective and ineffective visual communications

Class Activities:

• Review poster examples in GSPH

Handouts
None

Lecture 11 Poster Presentations
11/7
By the end of this class, each student will be able to:

• Present their project to the class
• Understand how to remain within an allotted timeframe

Class Activities:

• Presentations
• Peer critiques

Handouts
Poster presentation rubrics

Oral Communication Component
Lecture 12 Introduction to Oral Presentations
11/14
By the end of this class, each student will be able to:

• Understand how to tailor an oral presentation for a specific audience
• Understand various styles for oral presentations

Class Activities:

• Discussion of audiences
• Discussion of style guides
• Discussion of effective presentation development

Handouts
Hill, Mark Oral presentation advice
ENAR Oral presentation guidelines

Assignment 7
• 5-7 minutes oral presentation (due lecture 14)

Lecture 13  Oral Presentation Examples
11/21
By the end of this class, each student will be able to:

• Critique oral presentations
• Understand the difference between effective and ineffective oral communications

Class Activities:

• Review oral presentations rubrics
• Critique non-class oral presentations
• Discussion of effective and ineffective presentations
• Student difficulties developing oral presentations

Handouts
Oral presentation rubrics

11/28 NO CLASS

12/5 NO CLASS

Lecture 14  Oral Presentations and Wrap Up
12/12
By the end of this class, each student will be able to:

• Present their project to the class
• Evaluate the extent to which their communication skills have improved over the semester

Class Activities:

• Presentations/Peer critiques
• Discussion of communication types and issues
• Discussion of ways to continue improving communication skills