

03-748 Syllabus Fall 2016

Course Title: Scientific Speaking and Peer Review, 3 units, Mini-1
Instructor(s): Shoba Subramanian, Ph.D. (shoba@andrew.cmu.edu)
Time and Venue: Mondays, 1.30-3.50pm in MI 448 *unless noted otherwise*

Textbook and/or Other Materials:

Selected reading including

1. Communicating Science: Giving Talks (2nd Ed). *Burroughs Wellcome Fund Publication.*
2. The Craft of Scientific Presentations by Michael Alley. *Springer Publication.*

Learning Goals:

By the end of the course students will be able to -

1. Confidently and effectively communicate science via oral presentations
2. Understand best practices in slide-design to make presentations visually accessible
3. Provide constructive criticism to peers to enabling peers and themselves to make improvements in scientific speaking

Course Rationale:

Effective presentation of scientific data is an essential skillset for all researchers. This is now recognized by many public and private funding agencies that require professional development of graduate students in this area. The goal of this course is to prepare young graduate students to give effective scientific presentations. The course formalizes training in public speaking using structured peer review as a teaching tool. By leveraging the diversity of research in our department, the course allows students to both provide peer reviews in and receive them from areas both within and outside the student's sub-specialty. The course will complement the existing course on scientific writing, enable students to be competitive in the job market after graduation, and align with the guidelines for funding agencies. This course has been successfully offered in the form of a workshop since fall 2009.

Course Description:

Effective public presentation of scientific data is an important skill for every scientist. This interactive course will provide students with specific guidelines on organizing, preparing, and delivering an effective and engaging scientific talk. The topics covered include data organization, choice of content based on audience, PowerPoint and graphic design, charts and graphs representation, use of animation, fonts and color schemes, body language, overcoming stage-fear, and compensation for accents. The course is designed for third year graduate students. Students will present their upcoming Journal Club talk a week or two before in class, and receive formal review from a panel comprising of other students in the class, departmental multimedia designer, and the instructor. Further, each talk will be video recorded, and students will use the recording for self-critique and further input from the instructor. Each student's

Journal Club talk will then be recorded to provide a benchmark for the final talk incorporating the critiques provided. Students are required to participate in review of each others' work throughout the duration of the course, and will therefore actively learn the elements of an effective presentation.

Assessment:

This will be a pass/fail course. The students will be assessed based on class participation, constructive criticism as a peer-reviewer, and how well they integrate feedback to improve their presentations.

Topics Covered:

- a) Scientific data presentation
- b) Scientific data organization
- c) Content length
- d) Modification of talk based on target audience
- e) Speaking style, body language, and compensation for accent
- f) PowerPoint tools
- g) Use of graphs, charts, and tables
- h) Font, color, background, and contrast
- i) Effective use of animation
- j) Overcoming stage-fear and building confidence.