SCIENTIFIC THOUGHT AND EXPRESSION

BIOL 6000/8000 – Spring 2015
Mon-Wed 3:30-4:45, Room: Wolfe Hall 3246
Dr. Rafael Garcia-Mata
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Office Hours:

Tue/Thu 11:00-12:00
The instructor can also answer E-mail questions at almost any time, and is available by appointment at other times.

Important dates:

Holidays: Jan 19, MLK Day, March 9-13, Spring Break

Course Description:

This course will focus on the approaches that scientists use to communicate with one another. The main goal of this course is to prepare the students to write and present their Qualifying Research Proposal. To accomplish this, we will concentrate in the three main aspects of scientific communication: Writing, Reading, and Presenting. We will discuss scientific writing, focusing primarily on the structure of an NIH grant proposal. Students will learn to read, critique and score actual NIH grants and will discuss them during a "mock" study section. We will also cover various topics related to scientific writing. During the course of the class, the students will write the Specific Aims and the Significance/Innovation sections for their proposal, which will be evaluated and discussed in class. We will also discuss slide design and presentation. At the end of the semester the students will present an outline of their qualifying proposal in a short oral presentation. Additional classes will cover ethics in scientific research and other related topics.

This is a writing/discussion-based class that requires class attendance and class participation. Students are expected to be prepared and have completed writing/reading assignments prior to each class.

Student Evaluation (tentative):

Grades will be determined based upon student performance on writing assignments, class participation (including attendance) and oral presentations. An approximate breakdown of how the class will be graded is as follows:

	% of grade
Class Participation	20
Attendance (days present/class period)	15
In Class Assignments	15
Grant Review assignment (Due March 19)	20
Oral Presentations (April 16- April 21)	15
Specific Aims assignment (Due April 20)	15

Important Dates:

March 30	Grant critiques due
April 01	Study Section
April 08	Oral presentations begin

Attendance and Class participation: Students are required to attend every class. Unexcused absences will not be tolerated, and excused absences should be rare. While attending class is important, participating in class discussions is also critical for a good grade in this class. Students must demonstrate that they have prepared the assignments and that they have done the extra background analyses needed to comprehend the material. The only way to do this is to get involved in the discussions. ***Everyone will talk every class period, so come prepared.***

Writing assignments have specific due dates – papers handed in late will receive a penalty of no less than 10% per day late. Writing assignments CANNOT be emailed to the instructor – they must be uploaded in Blackboard.

Grant Review Panel: At the beginning of the semester, each student will be assigned three NIH type grants to review. Each student will act as a primary or secondary reviewer for these three grants, which requires them to prepare a written critique. The grants will be reviewed in a "mock" study section to be held on April 1st (subject to change depending on room and students availability). The Study Section will take probably most of the day. Before Study Section day, the student will have to upload their critiques on Blackboard. The guidelines and procedures related to evaluating a grant application will be discussed in class, and a handout will be uploaded on Blackboard.

Oral presentation: During the last week of the semester (prior to finals week) we will have student presents a summary of their proposal. The Power Point presentations will be 15 minutes in length (10-12 min plus a few min for questions), and will include an introduction of the topic's relevance, including relevant background on the subject, and a detail description of the proposed Specific Aims, expected results and potential problems. Special emphasis will be placed on the presentation design and delivery. Students will also be graded on knowledge of the topic, organization, ability to handle questions, etc. Although I will be grading each student, presentations also will be evaluated by the student's peers, which will impact their overall score on the presentation. Note that on days in which we have presentations class will probably run long, so please let me know if you have a class immediately following this one.

Grading Scale (tentative):
Grades will be determined based upon student class performance and class tests. Grades will be letter-based and will utilize a straight scale (see below) unless overall class performance dictates use of a curve.

A = 93-100%	B- = 80-82%	D+ = 67-69%
A-= 90-92%	C+ = 77-79%	D = 63-66%
B+ = 87-89%	C = 73-76%	D- = 60-62%
B = 83-86%	C- = 70-72 %	F = 0-59%

Issues that will be discussed in class (not necessarily in order):

Understanding the scientific process
Funding of scientific research
Reviewing Scientific manuscripts
Reviewing grants
Finding scientific papers
Writing an abstract
Writing a grant proposal
Use of Reference Manager Software
Reading primary scientific papers
Preparing oral presentations
Plagiarism and scientific misconduct
Use of audio/visual equipment (PowerPoint)
Inception of ideas, authorship, patents

Please read the attached statement on academic dishonesty:

Since much of the course requires individual research and writing, special emphasis will be placed on the importance of avoiding plagiarism, either intentional or otherwise. It should be recognized that students handing in assignments that do not represent their own work will receive a failing grade in this course. Thus, it is important to understand what plagiarism is and how to avoid it. One class period may be devoted to this topic.