MCB 540 Fall 2021

Tuesdays and Thursdays, 1230-1:50

Dr. Smith-Bolton (lecturing and grading)
rsbolton@illinois.edu

Dr. Slauch (lecturing and grading)
slauch@illinois.edu

Dr. Olsen (grading)
gjo@illinois.edu

Ask questions over email, and we will reply within 24 hours. Answers to frequent questions will be posted in the FAQ forum.

Office hours: Please use workshop time to discuss individual questions with us. If a concern/question needs a more in-depth discussion, email to make an appointment.

The class website is on Moodle

Required Texts:
Scientific Writing and Communication: Papers, Proposals, and Presentations. Angelika H. Hofmann. Oxford University Press, 4th edition. Available on Amazon.

The Grant Application Writer's Workbook by Stephen W. Russell and David C. Morrison. NIH Version. The latest edition is Forms F. All Cell and Developmental Biology labs have a lab copy of this book available for student use, although they may be earlier editions. http://www.grantcentral.com/workbooks/national-institutes-of-health/

Suggested Texts:
Houston, We Have a Narrative. Randy Olson. The University of Chicago Press, 2015. Available on Amazon.

Elements of Style by Strunk and White (Classic and only a few dollars-strongly recommended)

Course Overview: This course is for graduate students in the biological sciences, broadly defined. Students will learn how to write grant proposals in the NIH style, which will also be applicable to funding agencies such as NSF.

Course learning outcomes. Students in this class are at different points in their careers with different writing backgrounds. This class is designed to be flexible so as to help everyone move forward regardless of where they are starting. Students also have different immediate writing needs, depending on where they are in their different Ph.D. programs. Although this course will focus on grant writing for most written assignments,

we will also cover manuscript writing and briefly touch on preparation of figures and oral presentations. As you will see, basic concepts for all presentation styles overlap significantly. We will also stress writing fundamentals, which will help for all types of scientific writing.

Class Format: Each class will be in person this year, and include a combination of writing exercises, discussions, and group editing workshop. The lectures will cover grammar, writing mechanics, narrative, as well as specific types of scientific writing or grant components. In small groups we will read and edit working drafts. You may either bring paper copies of your drafts to class or post a Google Doc link to your writing assignment for that week to share with all group members. We expect these drafts will be a work-in-progress. Do your best to critique each other's assignments constructively. This critique will be part of your grade.

Groups: We will try to group you by scientific interest so the focus in the group discussions can be on the writing and not questions about the science.

Grading rubrics: The rubrics will tell you exactly what we will look for when we evaluate each assignment. Use them as a guide when commenting on each other's writing.

Graded Writing Assignments: Several assignments will be handed in to us after you have had a chance to make revisions based on your classmates' comments. We spend a lot of time with each writing sample and comment extensively – don't be discouraged by these critiques as everyone is in the same boat, even the course instructors who get written, often brutally honest, critiques for each of their NIH grant applications. Our goal is to move each person forward in terms of their scientific writing abilities, regardless of their starting point.

6 graded writing assignments:

1. Abstract: We will use this assignment as a benchmark to see everyone's starting place.
2. Specific Aims page: We spend a great deal of time on this section because it is so important!
3. Significance
4. One Aim of the approach section of a proposal
5. A manuscript introduction

6. Final project: A grant proposal, NIH-style. The weekly writing assignments and graded assignments will build toward your final project.

Mock Study Section: In place of a final exam, we will conduct a mock NIH study section. Participation will count toward your final grade. This exercise has been a lot of fun and very informative in past years. Your proposals will have primary and secondary reviewers, and we will discuss the proposals as a group. You will not be on the study section that reviews your proposal.

Syllabus:

August 24	Lecture topics: Class organization, Approach to writing Reading assignment: Hofmann Chapter 1
August 26	Lecture topics: Principles of narrative Reading assignment: Olson Chapter 7
August 31	Lecture topics: Concise writing; run-on and compound sentences Reading assignment: Hofmann Chapter 4
September 2	Lecture topics: Sentence structure, scientific jargon Reading assignment: Hofmann Chapter 2
September 7	Lecture topics: Paragraph organization I, punctuation, abstracts Reading assignment: Hofmann Chapters 6 and 14
September 9	Lecture topics: Redundancies in writing, overusing words; What happens in an NIH study section Reading assignment: NIH review criteria and instructions Writing assignment due: Abstract draft 1
September 14	Lecture topics: Paragraph organization II: transitions and signposts Writing assignment due: Abstract draft 2
September 16	Lecture topics: Specific Aims I: setting the framework and stating the problem to be solved; Verb tense Reading assignment: Chapters 7 and 8 in Grant Writer's Workbook Writing assignment due: **Final Abstract**
September 21	Lecture topics: Specific Aims II: Conveying your objective and hypothesis; Active vs passive voice in writing Writing assignment due: Draft of Specific Aims
September 23	Lecture topics: Specific Aims III: developing your aims; Parallel construction Writing assignment due: Draft 2 of Specific Aims
September 28	Lecture topics: Specific Aims IV: broader impacts; Singular vs. plural in writing Writing assignment due: Draft 3 of Specific Aims

September 30	Lecture topics: Significance I: Significance/Innovation, Scientific Premise and Rigor of Prior Work; Citations Reading assignment: Chapter 10 (2016/2019) and Chapter 9 (2011) in Grant Writer's Workbook Writing assignment due: Draft of Specific Aims
October 5	Lecture topics: Significance II; that/which/this Writing assignment due: **Final Specific Aims**
October 7	Lecture topic: Approach I – overall structure and introduction; Split infinitives Reading assignment: Chapters 10 and 11 of Grant Writer's Workbook (2011) Writing assignment due: Draft of Significance
October 12	Lecture topic: Approach II - justification and feasibility Writing Assignment due: Draft of Significance
October 14	Lecture topics: Figures, legends, ethics of image manipulation, Hyphenated adjectives Writing Assignments due: **Final Significance**; Draft of one aim of approach
October 19	Lecture topic: Approach III: research design, rigor and reproducibility Writing Assignment due: figure + legend
October 21	Lecture topic: Approach IV: expected outcomes, potential problems, and alternative strategies Writing Assignment due: Draft of one aim
October 26	Lecture topics: Future Directions and Timeline Writing Assignment due: Draft of one aim
October 28	Lecture topic: Remaining grant components, including biosketch and training plan Reading assignment: Skim chapters 12-20 of Grant Writer's Workbook Writing Assignment due: Drafts of one aim, future directions
November 2	Lecture Topic: Ethics Writing Assignment Due: **Final Aim**
November 4	Lecture Topic: Manuscript Introductions Reading assignment: Hofmann Ch. 10

November 9 — Lecture Topics: Manuscript Introductions II; Materials and Methods
Reading assignment: Hofmann Ch. 11

November 11 — Lecture Topics: Results; How to state conclusions
Reading assignment: Hofmann Ch. 12
Writing assignment due: Draft of introduction

November 16 — Lecture Topic: Discussions
Reading assignment: Hofmann Ch. 13
Writing assignments due: Draft of Specific Aims; **Final Introduction**

November 18 — Lecture Topic: Submitting manuscripts, interpreting the reviews
Writing assignment due: Draft of Significance

November 30 — Lecture Topic: slides and presentations
Writing assignment due: Draft of all aims of approach

December 2 — Lecture Topic: N/A
Assignment due: Prepare one slide to help with elevator pitch

December 7 — Lecture Topic: Study Sections
Writing assignment due: Draft of final project for group, or whichever part with which you'd like last-minute help

Date TBD — **Final Project Due**, upload as one document

Date TBD — Mock study section. Usually held during the time assigned for final exams for this class period. You will be sent your reviewer assignments by email.

Summary of graded writing samples due, email Word document

September 16	Abstract
October 5	Specific Aims
October 14	Significance
November 2	One Aim of Approach
November 16	Manuscript Introduction
TBD	Final Project Grant Proposal

Grading

10% Each graded writing assignment (5 total)
20% Class participation (includes attendance and group participation)
20% Final project
10% Study section participation

We will discuss how numeric scores will translate to letter grades on the first day of class.

Academic Integrity Statement

The University of Illinois at Urbana-Champaign *Student Code* should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: http://studentcode.illinois.edu/ .

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: http://studentcode.illinois.edu/. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Given that MCB 540 is a writing course, plagiarism will be taken very seriously. We will discuss plagiarism and other aspects of scientific fraud that can impact science writing multiple times during the course.

Accommodations Statement
To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TDD), or e-mail a message to disability@uiuc.edu. http://www.disability.illinois.edu/.

Emergency Response Statement
Emergency response recommendations can be found at the following website: http://police.illinois.edu/emergency-preparedness/. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. http://police.illinois.edu/emergency-preparedness/building-emergency-action-plans/.

Family Educational Rights and Privacy Act Statement
Any student who has suppressed their directory information pursuant to *Family Educational Rights and Privacy Act* (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course.
See https://registrar.illinois.edu/academic-records/ferpa/ for more information on FERPA.

Sexual Misconduct Policy and Reporting Statement
The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential.

Other information about resources and reporting is available here: wecare.illinois.edu.

Inclusive Classroom Statement
The effectiveness of this course is dependent upon the creation of an encouraging and safe classroom environment. Exclusionary, offensive or harmful speech, such as racism, sexism, homophobia, and transphobia, will not be tolerated and in some cases will be subject to University harassment procedures. We are all responsible for creating a positive and safe environment that allows all students equal respect and comfort. We expect each of you to help establish and maintain and environment where you and your peers can contribute without fear of ridicule or intolerant or offensive language.