

MCB5801: Scientific Writing and Project Development for MCB Graduate Students

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Mondays 12:20pm-1:10pm, TLS 263

Two credits. Prerequisite: Open only to Molecular and Cell Biology Ph.D. students.

Instruction in the practice of scientific writing through group discussions and peer review during preparation of an application to the NSF Graduate Research Fellowship Program. Group discussions in related aspects of graduate student project development.

Course Philosophy:

Welcome everyone to MCB5801, scientific writing and professional development for MCB graduate students! This course is motivated by three facts: (i) you are ultimately responsible for designing and executing your thesis research, from start to finish; (ii) your successfully completing your degree and taking the next step in your career depends on decisions that you make and disciplined patterns that you establish NOW, at the start of your graduate program; and (iii) your future career requires more than just research excellence (although this is important). It is my objective to help you continue transitioning from undergraduate-level recipients of knowledge to creative and independent scientists in each of these areas.

Writing effectively is an especially crucial scientific skill in which many graduate students lack formal training. Besides crafting your thesis and publications, effective writing is especially important inside and outside of academia to apply for research funding. Writing is also an important means to codify your ideas, which is especially important when you are designing a new project. We will therefore work together to craft specific aims for your research projects, anticipating that they will form the backbone of your first committee presentation and be amplified for your prospectus defense in year 2 or 3 of your PhD program. We will practice peer editing with a focus on both scientific content and writing clarity, refining your aims into a cohesive and marketable unit. You will use these aims as a mechanism to get early feedback from potential members of your committee. This also serves as a mechanism for you to assemble this committee early in your PhD career and facilitate meeting your PhD program milestones with their assistance. Finally, we will apply these aims to create first-class applications for the NSF GRFP fellowship. It is fully expected that these are submission-ready for the fall 2019 competition.

A second function of writing a full GRFP proposal is to highlight your personal narrative in science and discover ways that you can further your broader career prospects aside from your core research activities. Besides writing, this course will include readings and discussions concerning various aspects of scientific professional development. The intention of these discussions is for you to understand what a scientific career looks like, the path to achieving such a career, and your role and responsibilities within this process. I expect that you will fully engage in these discussions, and I commit to honestly answering ALL of your questions no matter how difficult (short of personally denigrating my colleagues). I firmly believe that having sober career goals and a concrete plan to achieve them is crucial for you to succeed in your graduate program and obtain the best career possible.

Evaluation: Full GRFP proposal – 40%; Specific aims – 20%; Peer reviews – 30%; Class participation – 10%.

Late penalties: Completing assignments on time is critical so that you are respectful of your colleagues' time. All late assignments and reviews will be penalized by losing 20% of the marks for that assignment per late day, with the first day counted from 12:20pm of the due date for that assignment. I also reserve the right to include chronic lateness in my evaluation of class participation. The reality is that funding agencies are less generous than this – PLAN AHEAD!!

Attendance and Conduct: Because this is a discussion-based course in which you are expected to always actively participate, I require that you attend as many of the classes as possible. If you have to miss a class, please let me know in advance and recognize that you will still be responsible for completing that day's assignment on your own.

All of your conduct in this course is governed by the established UConn Community Standards – see www.community.uconn.edu and/or ask me for further details.

Course Outline:

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| Week 1 (Jan 28) | Discussion: course introduction; funding and your PhD |
| Week 2 (Feb 4) | Discussion: funding agencies; email Jonathan your current personal statement draft (at least 1.5 pages – not for edits) |
| Week 3 (Feb 11) | Discussion: introduction to scientific writing; in-class assignment: “biggest loser” (writing concisely); email Jonathan your current personal statement draft (3 pages – not for edits) |
| Week 4 (Feb 18) | Discovery-based vs. hypothesis-based research; personal statement sent for peer review |
| Week 5 (Feb 25) | Discussion: crafting project outlines; receive personal statement reviews |
| Week 6 (Mar 4) | Discussion: academic and non-academic career paths; specific aims sent for peer review |
| Week 7 (Mar 11) | Discussion: reading and searching the scientific literature; receive specific aims reviews |
| Week 8 (Mar 18) | Spring break; send aims to Jonathan for grading by Mar 15 |
| Week 9 (Mar 25) | Discussion: networking; receive graded aims |
| Week 10 (Apr 1) | Discussion: time management; research plans due |
| Week 11 (Apr 8) | In-class assignment: study section reviews of research plans |
| Week 12 (Apr 15) | Discussion: data management and reproducibility; full proposal sent for peer review |
| Week 13 (Apr 22) | Discussion: the publication process; receive full proposal reviews |
| Week 14 (Apr 29) | Assignment due: final proposal, submit research plan for faculty reviews |

Textbook:

Many of our discussions will have required readings that I will assign before the class, including papers and secondary literature, e.g., blog posts and magazine articles. You will be held responsible for reading these materials as part of your “Class participation” portion of your grade.

I will also periodically forward other material that is related to our course discussions as it arises, but your reading these will not be evaluated as part of your course grade.