184d Using the Classroom to Improve Mentoring and Motivation: a Class on "How to Be a Graduate Student"

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Today's graduate students are coming from increasingly diverse backgrounds. This includes students who were in the work force for a few years, students with many years experience now seeking professional degrees, international students as well as conventional students directly from undergraduate programs. While this breadth of backgrounds can result in a vibrant program, it also may result in students with a wide range of mentoring needs, motivation, and expectations for graduate school.

To address this problem, a graduate course titled "Theory and Methods of Research" has been developed and is now required for all graduate students. The goals of this course are to 1) systematically present to the students many of the common situations that make up the graduate school experience, 2) encourage mentor/student interactions, and 3) motivate students to be productive by integrating research and coursework early in the graduate program. Using this approach, we hope to turn these students with diverse backgrounds into focused and motivated students and thereby develop their full potential.

The backbone and primary goal of the course is discussion of common graduate school experiences, which fall into two categories. First, oral and written communication skills include outlines, abstracts, proposals, journal articles, and oral presentations. Second, research oriented topics include discussion of the scientific method, research methods and instruments, and critical reviews of journal articles. Professional ethics as a student and researcher are also discussed. Finally, other informative lectures cover subjects such as copyrights, patents, and research notebooks. Throughout the course, these topics are integrated if possible. For example, one assignment requires each student to deliver a presentation discussing a research method or instrument required for their research. In this way, the student not only learns about an instrument that they will be using, but they also educate their fellow classmates as well as gain experience developing and delivering a technical presentation.

The second goal of this course is to improve mentoring by encouraging students to communicate often and effectively with their advisor. Active participation in the mentoring process is encouraged through the assignments on research methods and instrumentation (discussed above), critical review of journal articles, and proposal writing. For each of these assignments, the student is directed to select a topic relevant to their research area under the guidance of their advisor. In this way the student becomes familiar with their advisor and research topic early in their first semester of graduate school. This integration of research and coursework helps the students to build their own confidence while also easing the transition from the classroom to the laboratory.

In this paper, the structure and content of this course will be presented. In addition, methods for incorporating multiple topics in a single assignment will be suggested. Comments and feedback from both students and faculty advisors will also be discussed.