

Department of Biological Sciences
Plan to Address Scholarly Ethics and Integrity Component in Graduate Education

A. Introduction

Commission on Graduate Studies and Policies Resolution 2012-13B mandates that “the Program of Study for all graduate students show a record of the student’s participation in the particular ethics and integrity activities delineated by the student’s program, department, or college, as part of the student’s graduation requirements.” This document describes the scholarly ethics and integrity training component for students in the graduate program in the Department of Biological Sciences.

B. Scholarly Ethical and Integrity Training Requirements

The Appendix to CGSP Resolution 2012-13B lists the following required and optional topics to be covered in ethical and integrity training:

Required Topics:

1. Plagiarism and other violations of the Graduate Honor Code
2. Proper use of professional conventions in citation of existing research and scholarship, accurate reporting and ownership of findings, and acknowledgement of contributions to the work
3. Ethical standards in teaching, mentoring, and professional activities
4. Available avenues for reporting alleged misconduct

Optional Topics:

1. Appropriate lab procedures and maintenance of lab notebooks and other research documentation
2. Fair use of publications, software and equipment
3. Appropriate research protocols involving human rights and animal subjects; Institutional Animal Care and Use Committee certification
4. Guidelines for maintenance of confidentiality (and, where relevant, anonymity) in research
5. Guidelines for determination of authorship
6. Appropriate grant and contract management, including appropriately asserting personal or program capacities and competencies when applying for grants and contracts
7. Discipline- or field-specific professional ethics

C. Components of Scholarly Ethical and Integrity Training for Biological Sciences Graduate Students

Required and optional components of scholarly ethical and integrity training for graduate students in the Department of Biological Sciences, and the required and optional topics covered by each component, are as follows.

Required Components:

1. BIOL 5174: Introduction to Graduate Studies in Biological Sciences

All graduate students in the Department of Biological Sciences are required to take this course during their first year in the program. BIOL 5174 is a 1-credit course offered in the Fall semester each year on a Pass/Fail basis. The following sessions address scholarly ethics and training requirements.

a. Scholarly ethics and integrity – Part 1; Scholarly ethics and integrity – Part 2: Two 50-minute sessions are devoted specifically to scholarly ethics and integrity training. During these sessions the students read, review and discuss with the Department's Graduate Director the National Academies Publication, *On Being a Scientist: A Guide to Responsible Conduct in Research*.

Relevant Topics: Required #1-4; Optional #1-5

b. Conflict of interest training: Victoria Ratcliffe from the Office of the Vice President of Research leads one 50-minute session devoted to conflict of interest training, geared toward the biological sciences.

Relevant Topics: Required #2-4; Optional #1-2, #4, #6-7

2. GRAD 5004: GTA Training Workshop

All graduate students in the Department of Biological Sciences are required to serve as a graduate teaching assistant for at least one semester as part of their degree requirements, and accordingly all are required to attend the GTA Training Workshop prior to serving as a GTA. The GTA Training Workshop is described in the Graduate Catalog as "A three-day orientation to the role of a GTA at Virginia Tech and review by experienced faculty and GTAs of essential guidelines for effective classroom and laboratory communication and management. Microteaching components completes the program."

Relevant Topics: Required #3

Optional Components:

1. IACUC Training

Many graduate students in the Department of Biological Sciences use animal subjects in their research. Those that do obtain status as personnel on an approved IACUC protocol. As part of that process they receive scholarly ethics and integrity training through online CITI training modules.

Relevant Topics: Optional #3

2. Biosafety Training

Many graduate students in the Department of Biological Sciences use biohazardous materials in their research. Those that do are required to have their protocols approved by the Virginia Tech Institutional Biosafety Committee. They are also required to obtain training through online CITI training modules.

Relevant Topics: Optional #1, #3

3. Human Subjects Training

Some graduate students in the Department of Biological Sciences use humans or human cells in their research. Those that do obtain status as personnel on a protocol approved by the Virginia Tech Institutional Review Board. As part of that process they receive online training through the VT-IRB tutorial.

Relevant Topics: Optional #3