

## Ethics and Integrity Requirement Proposal

### Graduate Program in Macromolecular Science and Engineering (MACR)

Beginning in Spring 2016, all students that have entered the Macromolecular Science and Engineering (MACR) graduate program since Fall 2014 will be educated in the following topics to address the *Resolution to Include a Scholarly Ethics and Integrity Component in Graduate Education* in the following ways:

Please note, for Spring 2016, all topics will be covered in MACR 5016, a required core course for the MACR program. In subsequent years, we anticipate that these topics will be addressed in our MACR 5004 graduate seminar course. This new course is currently in development and under review by the Graduate Curriculum Committee for MACR adoption. MACR 5004 will be a required core course for all MACR students. Additionally, all students will be required to complete the CITI modules on Responsible Conduct of Research and Conflict of Interest.

1. Plagiarism and other violations of the Graduate Honor code
  - a. Plagiarism, falsification, and other violations of the Graduate Honor Code will be defined and discussed with examples provided.
    - i. An overview of the Graduate Honor Code as well as procedures for reporting an Honor Code violation will be discussed.
  - b. Students will be introduced to resources available on the Graduate Honor System and also the Virginia Tech Library's "Outline of Plagiarism and How to Avoid It."
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
  - a. Current standards for citation will be discussed with examples of recent publications in relevant journals.
  - b. Students will be introduced to the Virginia Tech Library's "Using Information Appropriately" module and the "Intellectual Integrity Guidelines" available from the Virginia Tech Research Office.
  - c. Students will be required to read and discuss *Honor in Science*, published by Sigma Xi.
3. Ethical standards in teaching, mentoring, and professional activities
  - a. Material from the American Chemical Society's *Chemical Professional's Code of Conduct* and *Academic Professional Guidelines* will be presented.
4. Available avenues for reporting alleged misconduct
  - a. The available hierarchy for addressing suspected research misconduct (Advisor, Program Director, Institute Director, Office of the Vice President of Research, etc.) will be described and discussed.
  - b. Students will also be familiarized with the Committee on Faculty Ethics.

5. Appropriate lab procedures and maintenance of lab notebooks and other research documentation
  - a. The National Science Foundation mandate for documentation protocols will be discussed and examples of active data management plans will be presented.
6. Fair use of publications, software, and equipment
  - a. This topic will be addressed as topics 1 and 2 are addressed.
7. Guidelines for determination of authorship
  - a. The principle investigator of most projects serves as the primary editor of manuscripts and is responsible for final decisions regarding authorship.