

Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences Plan to Satisfy Training Requirements for Scholarly Ethics and Integrity, and Inclusion and Diversity

This document presents the process by which all Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences (SBES) graduate students which are housed in the Department of Biomedical Engineering and Mechanics at the Virginia Tech campuses in Blacksburg/Roanoke, Virginia and the Wake Forest School of Medicine at the Wake Forest campus in Winston-Salem, North Carolina.

This plan is only applicable to the SBES Virginia Tech Graduate Students to meet the Virginia Tech Graduate School Ethics and Diversity requirements. SBES Students at the Wake Forest campus are required to meet the requirements of the Wake Forest Graduate School instead. Currently the Wake Forest Graduate School requires ethics training as referenced in this plan but does not require a diversity requirement for students at their campus.

Biomedical Engineering will satisfy the Graduate School training requirements for:

1. Scholarly Ethics and Integrity

(https://secure.graduateschool.vt.edu/graduate_catalog/policies.htm?policy=ff80808147e9ba300147f3ee1b6e0002)

2. Inclusion and Diversity

(<https://graduateschool.vt.edu/faculty-and-staff-resources/inclusion-diversity-requirement.html>)

Beginning Fall 2021, all SBES students must include the following on the Plan of Study for the Scholarly Ethics and Integrity requirement:

1. All entering SBES graduate students are required to attend a half-day orientation prior to the beginning of the fall semester. Attendance is taken at this orientation and will be recorded in each student's departmental record. At this orientation the University and SBES policies and procedures as well as Ethics and Integrity Requirements will be presented, and students will be informed of the timeline for satisfying these requirements.
2. All new graduate students at the Virginia Tech campus are required to complete the BMES 5984 (*permanent course number TBD*): "BME Ethics Professional Development" during their first fall semester. The instructor of this course will cover (a) plagiarism and other violations of the Graduate Honor Code. (b) 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 (c) ethical standards in teaching, mentoring,

and professional activities (d) avenues for reporting alleged misconduct (e) appropriate research protocols involving human and animal subjects: Institutional Review Board (IRB) and Institutional Animal Care and Use Committee (IACUC) and (e) oral and written communications across boundaries to create a diversity statement for professional use as required by the Virginia Tech Graduate School Ethics requirements. Attendance will be taken and completion will be recorded in the student's departmental record and plan of study. In addition, students will be required to successfully complete the NIH Responsible Conduct of Research (RCR), Conflict of Interest (COI), Biomedical Research, IRB, and IACUC online courses created and maintained by the Collaborative Institutional Training Initiative (CITI) to satisfy additional Virginia Tech requirements.

3. All new graduate students at the Wake Forest campus are required to complete the Wake Forest University Ethics courses including: GRAD 712: Clinical Integrity & Professionalism, GRAD 713: Foundations of Scientific Integrity & Professionalism, GRAD 714: Scientific Integrity and Professionalism, GRAD 715: Career Planning for Biomedical Sciences, and GRAD 716: Seminars in Professional Development which meets the requirements of the Wake Forest Graduate School Ethics Requirements.
4. All SBES graduate students are required to attend the BMES 5944 BME Seminar course which is a special series of lectures that cover a wide range of topics beyond the ethics requirements at each campus. Topics include good research practices, strategies to write a fellowship application, e.g., for NIH or NSF, oral communication, and a number of professional development topics such as how to prepare for their first conference talks, networking, and biomedical research.

As stated, all new SBES graduate students must satisfy these requirements. When students submit their plans of study for Departmental and Graduate School approval, the completion of SBES Ethics and Integrity Requirement will be noted.

The proposed procedure for the SBES Ethics and Integrity Requirement satisfies the four required topics enumerated in the Appendix to CGS&P Resolution 2012-13B in the following specific ways.

Required Topic 1: Plagiarism and other violations of the Graduate Honor Code

The definition of plagiarism and responsibilities of graduate students as research participants is covered in the first module of the CITI online course entitled "Introduction to Responsible Conduct of Research." Specific examples and information on best practices are given within the following modules: "Research Misconduct," "Publication Practices and Responsible Authorship," and "Data Acquisition, Management, Sharing and Ownership." In addition, as part of the BMES 5984 BME Ethics Professional Development course students will be introduced to Virginia Tech resources on plagiarism and other violations of the Graduate Honor Code; specifically those resources at the Graduate Honor System (<https://graduateschool.vt.edu/academics/expectations/graduate-honor-system.html>) and the Virginia Tech Library System's "Outline of Plagiarism and how to avoid it" (<http://www.lib.vt.edu/instruct/plagiarism/index.html>). At Wake Forest, these topics are covered in GRAD 712, 713, 714, 715, and 716.

Required Topic 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

This required topic is covered in the fourth module of the CITI on-line course entitled “Publication Practices and Responsible Authorship.” In addition, as part of the BMES 5984 BME Ethics Professional Development course students will be introduced to Virginia Tech resources on proper citations of existing research, the reporting and ownership of findings and the acknowledgement of contributions of work. These resources include those resources available at the Graduate Honor System (<https://graduateschool.vt.edu/academics/expectations/graduate-honor-system.html/>), The “Information Appropriately” module from VT Libraries (http://info-skills.lib.vt.edu/using_info/index.html), and the “Intellectual Integrity Guidelines” available from the Virginia Tech Research Office (<http://www.research.vt.edu/intellectual-property-virginia-tech>). At Wake Forest, these topics are covered in GRAD 712, 713, 714, 715, and 716.

Required Topic 3. Ethical standards in teaching, mentoring, and professional activities

This required topic is covered in the CITI on-line course modules entitled “Conflicts of Interest and Commitment,” “Mentor/Trainee Responsibilities,” “Peer Review,” and “Collaborative Research.” In addition, as part of the BMES 5984 BME Ethics Professional Development courses students will be introduced to Virginia Tech resources on ethical standards in teaching, mentoring, and professional activities. In particular, Virginia Tech courses on training on research misconduct are provided through the Networked Learning Initiatives (<http://www.research.vt.edu/professionalddevelopment/>). The Research Office provides a general informational brochure about misconduct (<http://www.research.vt.edu/research-integrity-office/brochure/misconduct-brochure.pdf>). The “IRB Human Subjects Research Tutorial” provides information on the procedures and approval requirements for the use of human subjects in research (http://www.irb.vt.edu/pages/tutorial_intro.htm). Finally, the Virginia Tech Research Office provides conflict of interest training and resources (<https://www.research.vt.edu/sirc/disclosure/index.html>). At Wake Forest, these topics are covered in GRAD 712, 713, 714, 715, and 716.

Required Topic 4. Available avenues for reporting alleged misconduct

The available avenues for SBES graduate students to report alleged misconduct will be presented at orientation, SBES 5944 BME Graduate Seminar, and BMES 5984 BME Ethics Professional Development course. The particular avenues available to students include the Graduate Honor System (<https://graduateschool.vt.edu/academics/expectations/graduate-honor-system.html/>) and the Committee on Faculty Ethics

<http://www.facultysenate.vt.edu/Faculty-Senate-Committees/faculty-senateethics-committee.html>). Both will be presented and described. Examples of how these resources can be used will be provided and based on situations that have previously arisen in the SBES graduate program. At Wake Forest, these topics are covered in GRAD 712, 713, 714, 715, and 716.

Beginning Fall 2021, all SBES students at the Virginia Tech campus must include one of the following on the Plan of Study for the Inclusion and Diversity Requirement:

1. ENGE 5304: Graduate Student Success in Multicultural Environments
2. GRAD 5214: Diversity in a Global Society

The ENGE 5304 course is currently approved for the College of Engineering and the GRAD 5214 course is currently approved for the Graduate School. Students in the SBES program at the Virginia Tech campus may take either one to meet the Inclusion and Diversity requirement.

Currently, there is not an Inclusion and Diversity requirement nor course offerings at the Wake Forest Graduate School for SBES students at the Wake Forest campus. Students at the Wake Forest campus are encouraged to attend Diversity, Equity, and Inclusion trainings and events held at both campuses.