A Tissue Engineering Track within the Wake Forest/Virginia Tech School of Biomedical Engineering and Sciences (SBES)

Mark Van Dyke,[1] Aaron Goldstein,[2] Craig Hamilton,[3] Pete Santago,[3] and Wally Grant[2]
[1]Institute for Regenerative Medicine, Wake Forest University School of Medicine, Winston Salem, NC
[2]College of Engineering, Virginia Tech, Blacksburg, VA
[3]Department of Biomedical Engineering, Wake Forest University School of Medicine, Winston Salem, NC
mavandyk@wfubmc.edu

Introduction

The Wake Forest/Virginia Tech School of Biomedical Engineering and Sciences (SBES) is a joint program between Wake Forest University and Virginia Tech. Faculty from Wake Forest's Biomedical Engineering, Radiation Oncology, Radiology, Physics, Internal Medicine, Cardiology, Health and Exercise Science, Plastic and Reconstructive Surgery, Pediatrics, Orthopaedics departments, and Institute for Regenerative Medicine, as well as Virginia Tech's (VT) departments of Engineering Science and Mechanics, Mechanical Engineering, Biomechanical Engineering, Chemical Engineering, Biomedical Sciences and Pathobiology, Industrial Systems and Engineering, Materials Science and Engineering, Electrical and Computer Engineering, VT-WFY School of Biomedical Engineering and Sciences, Large Animal Clinical Sciences, Human Foods, Nutrition and Exercise, Center for Intelligent Material Systems and Structures, Computer Science, Small Animal Clinical Sciences, Biology, Research Compliance, Civil and Environmental Engineering, College of Veterinary Medicine, and Biological Systems Engineering combine to make up the core and affiliate faculty.

A tissue engineering track within this School provides students with the opportunity to take courses that cover the fields of cell and molecular biology, physiology, anatomy, biomaterials, clinical translation, stem cell biology, clinical medicine, and techniques for advanced tissue development. A laboratory course is also part of the curriculum and includes hands-on experience in tissue culture, histology, and molecular biology. Students have an opportunity to conduct their thesis research with tissue engineering faculty at Virginia Tech, or at the Wake Forest Institute for Regenerative Medicine (http://www.wfirm.org). A multidisciplinary approach exposes students to faculty with expertise in all fields of science, engineering, and clinical medicine relevant to tissue engineering. The research training emphasizes a team-based approach and cross-disciplinary training. Students develop broad expertise in the natural sciences and engineering, as well as life sciences, while still deepening their knowledge of biomedical engineering. The training goals of the program are to create highly functioning graduates in the field of tissue engineering who can operate at the intersecting fields of biology, materials, engineering, and clinical medicine.