Michael J. McClure, Ph.D.

Assistant Professor, Department of Biomedical Engineering | BE, Vanderbilt University | Ph.D, Virginia Commonwealth University at VCU College of Engineering

Institute for Engineering and Medicine, Room 395, Richmond, VA, US

Understanding the role of extracellular matrix and mechanical forces to regulate skeletal muscle structure, function, and innervation.

Biography

Dr. McClure's long-term research goal is to understand the roles and underlying mechanisms by which biophysical constraints and mechanical forces regulate muscle structure, function, and innervation. Current research objectives in support of this goal are to: 1) Determine how structural features of extracellular matrix fibers govern myoblast fusion; 2) Identify how age-related changes in extracellular matrix affect muscle regeneration and satellite cell self-renewal; 3) Determine how muscle and nerve crosstalk regulate muscle regeneration and innervation; 4) Determine the role of sex differences and hormone signaling in muscle regeneration. Dr. McClure is a member of the Society for Biomaterials, Orthopaedic Research Society, Biomedical Engineering Society, and Tissue Engineering and Regenerative Medicine Society.

Industry Expertise

Education/Learning

Areas of Expertise

Muscle aging, Cell-matrix interactions, Integrin-mediated signaling, Myoblast fusion, Regenerative rehabilitation in skeletal muscle trauma

Affiliations

Orthopaedic Research Society, Tissue Engineering and Regenerative Medicine Society, Society for Biomaterials, Biomedical Engineering Society

Education

Vanderbilt University
B.E. Mechanical Engineering

Virginia Commonwealth University
M.S. Biomedical Engineering

Virginia Commonwealth University
Ph.D. Biomedical Engineering

Accomplishments

VA Advanced Fellowship Program: Interprofessional Polytrauma & Traumatic Brain Injury Rehabilitation
2011-2014

Virginia Commonwealth University Dissertation Assistantship Award
2010-2011

National Council of Examiners for Engineering and Surveying, Engineer in Training
2005

Vanderbilt University Undergraduate Research Initiative Award
2004
