

Update Speaker I

Nikki Farnsworth



“The Role of the Pancreas Microenvironment in Regulating Islet Function and Survival in Type 1 Diabetes”

Saturday, October 26th, 2024

9:00 AM – 10:00 AM

School of Mines Green Center

Abstract: Currently, 1.25 million people in the United States have type 1 diabetes (T1D), where the prevalence of T1D has increased by ~21% in the last decade. T1D is characterized by the progressive destruction of the insulin producing β -cells in the pancreatic islets of Langerhans. This leads to loss of blood glucose homeostasis which can be deadly if left uncontrolled. The mechanisms underlying disease onset and progression are not well understood, limiting the targets for potential therapeutics which could prevent the onset or progression of T1D. The research goals of my lab are to utilize biomaterials as a tool to determine the role of the islet micro-environment in the onset and progression of T1D. To achieve these goals, my lab uses a combination of engineering and biomolecular tools including advanced optical imaging techniques, quantitative image analysis, and 3D biomimetic hydrogel scaffolds with both mouse and human tissues.

Bio: Dr. Nikki Farnsworth is an Assistant Professor of Chemical and Biological Engineering at the Colorado School of Mines. She is also Affiliate Member and Adjunct Assistant Professor at the Barbara Davis Center for Diabetes at the Anschutz Medical Campus. Prior to joining the Mines faculty, she completed her postdoctoral training at the Barbara Davis Center for Diabetes in the Bioengineering and Pediatrics department under Dr. Richard Benninger, working at the

intersection of cell biology, diabetes, and biophysics. Dr. Farnsworth completed her Ph.D. and M.S. degrees in Chemical and Biological Engineering at the University of Colorado Boulder, under Dr. Stephanie Bryant working on cartilage tissue engineering. She completed her B.S. in Chemical Engineering at Rensselaer Polytechnic Institute. The Juvenile Diabetes Research Foundation, the American Diabetes Association, the NIH NIDDK, the NIH Diabetes Research Center, and the Helmsley Charitable Trust George Eisenbarth Award from nPOD currently fund her lab.