Focus Group GENE DELIVERY AND GENE EDITING

CRS Controlled Release Society

WEBINAR

Building Microfluidic Devices for Efficient Delivery of Large and Small Macromolecules

Todd Sulchek, PhD
Associate Professor, Bioengineering, Georgia Institute of Technology

Wednesday, April 10, 2019
1 PM – 2 PM EDT

This webinar will highlight the unique challenges of efficient intracellular delivery of a variety of macromolecules required for both research and development as well as for therapeutic applications such as gene editing using CRISPR, gene delivery required for Car-T cell production, or protein delivery for vaccine development. Dr. Sulchek's has recently applied a microfluidics approach to gently and efficiently delivering both small and large macromolecules to a variety of cell types. He is a co-founder in a company called CellFE, Inc. which is commercializing this technology. This talk will share some of the lessons learned for designing microfluidic systems for gene editing and delivery as well as latest examples.

Todd Sulchek is an associate professor in Mechanical Engineering at Georgia Tech where he conducts fundamental and applied research in the field of biophysics. His research program focuses on the mechanical and adhesive properties of cell and biological systems and the development of microsystems to aid in their study. His research employs tools, including MEMS, microfluidics, imaging, and patterning to understand or enable biological systems. His interests include cancer diagnostics, stem cell biomanufacturing, novel therapeutics, and ultracheap engineering tools. He is a member of the interdisciplinary Institute for Bioengineering and Bioscience. Dr. Sulchek also holds program faculty positions in Bioengineering and Biomedical Engineering and has a courtesy appointment in the School of Biology. He received his PhD from Stanford in Applied Physics under Calvin Quate and received a bachelors in math and physics from Johns Hopkins. To date he has published 42 journal papers and has filed or been issued 7 patents.