Steven M Scherr

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Profile

After entering the LEAP program at Boston University and transitioning from biologist to mechanical engineer I am looking forward to applying my knowledge in these fields to develop innovative technologies. My interests lie in microfluidics, medical devices, biosensors, global health, and product design.

Education

Boston University-College of Engineering Jun 2011 – Current
MS in Mechanical Engineering – Sept 2014
PhD in Mechanical Engineering – Fall 2014- January 2017
GPA: 3.90/4.00
Academic Scholarship

SUNY New Paltz Sep 2003 – May 2007
BS in Biology – Summa Cum Laude
GPA: 3.84/4.00
Academic Scholarship
Dean's List Eight Semesters

Experience

Graduate Research Assistant
Boston University Feb 2012 – Current
Biological Sensing and Imaging Lab

- Design and modelling of a convection, diffusion, and reaction in a disposable cartridge based microfluidic platform for real-time visualization of individual viruses and nanoparticles in complex media. Development of rapid and sensitive multiplexed viral hemorrhagic fever test for point-of-care application. Identify and work with several manufacturers to translate device design to scalable process. Develop quality control protocol and improve design to reduce cost at scale.

Research Scientist
NexGen Arrays May 2015 – Sep 2015

- Responsibilities included new assay development, translating test from bench-top to cartridge, and integration into automated optical instrument.

R&D Engineering Intern
Seventh Sense Biosystems Jun 2012 – Aug 2012

- Medical device optimization, thermoforming, packaging, failure mode effects analysis, injection molding, design for manufacture, design for assembly.

Non-Pertinent Positions (Agriculture Internships, etc) Sept 2008- Jan 2012

Veterinary Assistant & Manager June 2003 – Aug 2008
Hopewell Animal Hospital and Hopewell Bird Hospital

- Responsible for finances, health and safety, hiring, and scheduling in transition to sale. As assistant, responsible for phlebotomy, surgical assistance, animal restraint and care, and lab testing.

Skills

Microfluidic design, fluid and transport modelling, AutoCAD, Solidworks, Matlab, COMSOL, Microsoft Office, DFM, DFA, packaging design, injection molding, thermoforming, FMEA, stability testing, diagnostic development, clean room protocol, microfabrication, aseptic technique, assay development

Honors & Awards

BUnano Award Apr 2016
- Boston University Graduate Research Symposium

First Place at Fifth Annual Translational Research Symposium Apr 2016
- Boston University Clinical and Translational Science Institute

College of Engineering Deans Award Apr 2015
- Boston University Graduate Research Symposium

First Place for Research on Disparities in Health Care Oct 2014
- Boston University Clinical and Translational Science Institute

Materials Research Society Poster Award Winner Dec 2014
- MRS fall meeting and exhibit

Award for Applied Sciences Dec 2014
- Boston University Scholars Day

CIMIT Primary Healthcare Prize Finalist Jun 2012
- Team among ten finalists nationwide

Outstanding Student Award May 2007
- Graduated at top of Department at SUNY New Paltz

Publications

S. M. Scherr, G. G. Daaboul, J. Trueb, D. Sevenler, H. Fawcett, J. H. Connor, and M. S. Ünlü, "Real-Time Capture and Visualization of Individual Viruses in Complex Media," *ACS Nano*, vol. in print, 2016.

E. Seymour, G. G. Daaboul, X. Zhang, S. M. Scherr, N. L. Ünlu, J. H. Connor, and M. S. Ünlü, "DNA-Directed Antibody Immobilization for Enhanced Detection of Single Viral Pathogens," *Anal. Chem.*, vol. 87, no. 20, pp. 10505–10512, 2015.

S. M. Scherr, D. Freedman, K. Agans, A. Rosca, E. Carter, M. Kuroda, H. Fawcett, C. Mire, T. Geisbert, M. S. Ünlü, J. H. Connor, "Disposable Cartridge Platform for Rapid Detection of Viral Hemorrhagic Fever Viruses," *Lab-on-a-Chip*– **Under Review**

G.G. Daaboul, D. Freedman, S. M. Scherr, E. Carter, A. Rosca, D. Bernstein, C. Mires, K. Agans, T. Hoenen, H. Feldmann, T. Geisbert, M. S. Ünlü, J. H. Connor, "Enhanced Light Microscopy Visualization of Virus Particles from Zika Virus to filamentous Ebolaviruses," *mBio*- **Under Review**