Building Enabling Microfluidics Devices:

Microfabrication, Rapid Prototyping, 3D-Printing + Applications

Date: Tuesday, April 29, 2025 - Wednesday, April 30, 2025

Conference Venue: Crowne Plaza Atlanta Midtown

Up-to-Date Agenda and Speaker Presentation Abstracts on SelectBIO Website:

https://www.selectbioconferences.com/

Conference Agenda

Conference Day 1: Tuesday, April 29, 2025

08:00 Conference Registration, Materials Pick-Up, Coffee and Networking

09:00 *Welcome and Introduction by Conference Chairperson and Current Status and Trends in Enabling Microfluidics Devices Development*

Mehmet Toner, Helen Andrus Benedict Professor of Biomedical Engineering, MGH/Harvard Medical School, USA -- Conference Chairperson

09:30 Keynote Presentation

Plastic-based Microfluidics: From Prototyping to Production

Steve Soper, Foundation Distinguished Professor, Director, Center of BioModular Multi-scale System for Precision Medicine, The University of Kansas, United States of America

10:00 Mid-Morning Coffee Break and Networking

10:30 Keynote Presentation

Lung Microphysiological Systems

Shuichi Takayama, Professor, Georgia Research Alliance Eminent Scholar, Georgia Institute of Technology, United States of America

11:00 Keynote Presentation

Two-Photon Direct Laser Writing Strategies for 3D Microfluidic Technologies

Ryan Sochol, Associate Professor, University of Maryland, College Park, United States of America

11:30 Technology Spotlight Presentation

Advancing PDMS Fabrication: Innovations in Mold Technology and High-Volume Production

Jing Chen, Founder & CEO, Hicomp Microtech, United States of America and China

12:00 Networking Lunch

13:29 *Session Sub-Title: Building Microfluidics Devices -- Materials, Methodologies and Platforms*

Chairperson: Professor Noah Malmstadt, University of Southern California

13:30 *Digital Microfluidic Devices for Multi-Modal Cell Phenotyping*

Fatih Sarioglu, Associate Professor, Georgia Institute of Technology, United States of America

14:00 Technology Spotlight Presentation

Microfluidics and Mask-Aligner: How to Make the Right Choice?

Nicolas Brillouet, CTO, Kloé, France

14:30 Mid-Afternoon Coffee Break and Networking

14:59 *Session Sub-Title: 3D-Printing in Microfluidics*

15:00 Keynote Presentation

Mastering Microscale Fabrication: Multi-Resolution 3D Printing for Advanced Microfluidic Devices

Gregory Nordin, Professor, Brigham Young University, United States of America

15:30 *Pneumatic Circuit Modeling and Design for Plug-and-Play Microfluidic Flow Control*

Christopher Easley, C. Dent Williams Professor, Department of Chemistry and Biochemistry, Auburn University, United States of America

16:00 *Toward Therapeutic, 3D Printed, Microfluidic Artificial Lungs*

Joseph Potkay, Research Associate Professor, Surgery, University of Michigan, Clinical Research Engineer, VA Ann Arbor Healthcare System, United States of America

16:30 Keynote Presentation

Modular Design Workflows for 3D Printed Microfluidics

Noah Malmstadt, Professor, Mork Family Dept. of Chemical Engineering & Materials Science, University of Southern California, United States of America

17:00 Technology Spotlight Presentation

Integrating Mixed Manufacturing Techniques for Microfluidic Commercialization: Strategies and Best Practices

Stefano Begolo, President, ALine Inc., United States of America

17:30 Technology Spotlight Presentation

Breaking Barriers in Microfluidics: New Tools, Smarter Materials

Roger Nassar, CEO, RAN Biotechnologies, United States of America

18:00 Networking Reception with Beer and Wine

19:00 Close of Day 1 Main Conference Programming

19:15 *Introduction to Microfluidics Training Course*
Presented by Professor Shu Takayama, Professor, Georgia Research Alliance Eminent Scholar, Georgia Institute of Technology

This course is open to all conference attendees and included with your conference registration

21:15 Close of Day 1 of the Conference

Conference Day 2: Wednesday, April 30, 2025

08:00 Morning Coffee and Networking in the Exhibit Hall

08:55 *Session Sub-Title: Applications of Enabling Microfluidics Devices -- Wearable Devices*

09:00 *Hybrid Manufacturing Strategies for Wearable Microfluidics*

Tyler Ray, Assistant Professor, University of Hawaii at Manoa, United States of America

09:30 *Rapid Prototyping of Functional Materials for Microfluidic, Biosensor and Wearable Devices*

Bonnie Gray, Professor of Engineering Science, Simon Fraser University, Canada

10:00 Technology Spotlight Presentation

Revolutionizing Microfluidics with Eden Material: From Design to Production

Victor Morel Cahoreau, Head of Sales, Eden Microfluidics, France

10:30 Mid-Morning Coffee Break and Networking

11:10 *Session Sub-Title: Emerging Applications of Enabling Microfluidics Devices*

11:15 *Scaled Microfluidics in Clinical Medicine*

Ravi Kapur, CEO, AutoIVF Inc., President, BendBio Inc., President, Boston Nanotechnology Inc., United States of America

11:45 *Microfluidics for Whole Blood Liquid Biopsy*

Ian Papautsky, Richard and Loan Hill Professor of Bioengineering, Co-Director, NSF Center for Advanced Design & Manufacturing of Integrated Microfluidics, University of Illinois at Chicago, United States of America

12:15 *Parallel Selective Capture of Single Circulating Melanoma Cells and Functional Analysis*

Robbyn Anand, Associate Professor, Iowa State University, United States of America

12:45 Networking Lunch in the Exhibit Hall

13:45 *Round-Table Discussion: Challenges in the Development of Novel & Enabling Microfluidics Devices*

Chaired by Professor Mehmet Toner, Helen Andrus Benedict Professor of Biomedical Engineering, MGH/Harvard Medical School, USA

14:29 *Session Sub-Title: Short Talks from Submitted Abstracts*

14:30 *Cyclic Olefin Polymer (COP) for Optical Molecular Detection at the Point-of-Care*

Julio Rivera-De Jesus, Purdue University, United States of America

14:50 *Autonomous Droplet Volume Control with 3D Printed Pneumatic Pulse Timers without Electrical Power*

Joanne Seow, Auburn University, United States of America

15:10 *3D-Printed Modular Microfluidic Devices for Passive Aqueous-in-Oil Droplet Formation, Storage, and Imaging*

Hieu Pham, Auburn University, United States of America