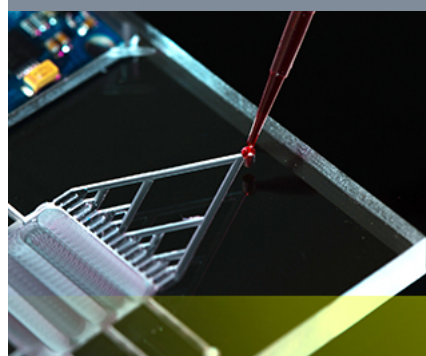


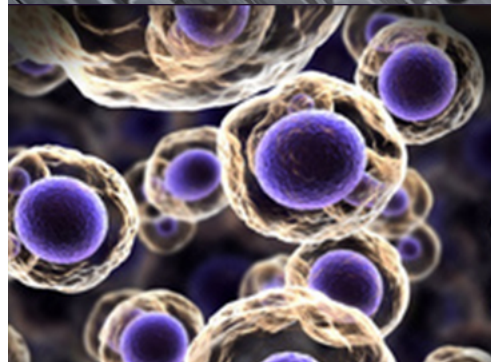
SELECTBIO



16th-Annual
**Lab-on-a-Chip & Microfluidics
World Congress**
November 28-30, 2023
Laguna Hills, California



**Materials & Tools for Developing
Point-of-Care & Rapid Diagnostics 2023**
November 28-30, 2023
Laguna Hills, California



**Extracellular Vesicles
Cell-Free RNAs**
Technologies & Biological Investigations
November 28-30, 2023
Laguna Hills, California

The Hills Hotel – Laguna Hills, California
November 28-30, 2023

SelectBIO Website: selectbio.com

Mehmet Toner Microfluidics Symposium 2023
On the Occasion of his 65th Birthday—We Celebrate via this Symposium
November 28, 2023
Chaired by Dino Di Carlo and Albert Folch

- 13:00 Conference Registration and Materials Pick-Up
- 13:50 Welcome and Introduction to the Mehmet Toner Microfluidics Symposium 2023 by
Chairs: Dino Di Carlo and Albert Folch—Plenary Ballroom
- 14:00 *Microfluidics in the Clinic: Applications from Infectious Diseases to Cancer
Treatment Monitoring*
Shannon Stott, Assistant Professor, Massachusetts General Hospital & Harvard
Medical School, United States of America
- 14:20 *Early Dissemination of CTCs: Detection, Molecular Characterization and Clinical
Relevance*
Sunitha Nagrath, Professor of Chemical Engineering and Biomedical Engineering,
University of Michigan-Ann Arbor, United States of America
- 14:40 *Understanding Tissue Microenvironments with Miniaturization Technologies*
Sangeeta Bhatia, John J. and Dorothy Wilson Professor, Massachusetts Institute of
Technology, United States of America
- 15:00 *Interrogation of Intact Tumor Biopsies Using Microfluidics, Robotics, and 3D Printing*
Albert Folch, Professor of Bioengineering, University of Washington, United States of
America

15:20 Mid-Afternoon Coffee Break and Networking in the Exhibit Hall

- 16:00 *Ultra-High Sensitivity Diagnostics with Droplet Microfluidics*
David Weitz, Mallinckrodt Professor of Physics and Applied Physics, Director of the
Materials Research Science and Engineering Center, Harvard University, United
States of America
- 16:20 *Replicating In Vivo Micro Scale Biology In Vitro: Cancer Biology and Neutrophil
Migration*
David Beebe, Claude Bernard Professor of Biomedical Engineering, John D.
MacArthur Professor, University of Wisconsin-Madison, United States of America

16:40 *Quantitative Microfluidic Technologies to Ensure Reproducibility of Microbial Measurements*

Rustem Ismagilov, Ethel Wilson Bowles and Robert Bowles Professor of Chemistry and Chemical Engineering, California Institute of Technology, United States of America

17:00 *Identification of Different Subpopulations of Circulating Tumor Cells and Extracellular Vesicles in the Blood of Cancer Patients using Microfluidics*

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

17:20 *Microfluidics in Space*

Leanna Levine, Founder & CEO, ALine, Inc., United States of America

17:40 *Navigating the Winding Road of Inertial Focusing to the Clinic*

Dino Di Carlo, Armond and Elena Hairapetian Chair in Engineering and Medicine, Professor and Vice Chair of Bioengineering, University of California-Los Angeles, United States of America

18:00 **Plenary Presentation**

Extreme Microfluidics: Large-Volumes and Complex Fluids

Mehmet Toner, Helen Andrus Benedict Professor of Biomedical Engineering, Massachusetts General Hospital (MGH), Harvard Medical School, and Harvard-MIT Division of Health Sciences and Technology, United States of America

18:30 Mehmet Toner Birthday Celebration + Networking Reception with Beer, Wine and Dinner in the Exhibit Hall - Network with Colleagues and Engage with Exhibitors

20:00 Close of Day 1 Main Conference Programming

07:30 **Introduction to Microfluidics Training Course**

**A Training Course for Beginners and New Entrants into the Microfluidics Field*

Separate Registration is Required to Attend this Training Course

Venue: Slate Room

Presented by: Shuichi Takayama, Professor, Georgia Research Alliance Eminent Scholar, and Price Gilbert, Jr. Chair in Regenerative Engineering and Medicine, Georgia Institute of Technology & Emory University School of Medicine, United States of America

This presentation will introduce the basics of microfluidics:

- Topics include size scales of microfluidic devices and how that affect microscale fluid flows
- The evolution and different methods of microfluidic device fabrication
- Select biological applications including cellular, molecular, and exosome applications
- Some of the challenges and opportunities and future perspectives will also be discussed
- Time will also be reserved for questions and discussions

Coffee and Pastries and Networking in the Exhibit Hall Start at 08:00

SelectBIO Lab-on-a-Chip and Microfluidics World Congress 2023

November 29, 2023 – Day 2

Ballroom “A”

Chairperson: Dr. Claudia Gärtner, CEO – microfluidic ChipShop GmbH

Session Title: Deep Dive into Microfluidics and Lab-on-a-Chip Spaces

09:00 *Sequencing Single RNA Molecules using a Nanofluidic Device with Dual In-Plane Nanopore Sensors and Immobilized Exoribonuclease Enzymes*

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

09:30 *Quantitative Biology with Droplet Microfluidics*

Adam Abate, Professor of Bioengineering and Therapeutic Sciences, University of California-San Francisco, United States of America

10:00 *CRISPR-based Diagnostics: Gross Errors, Useful Specificity, and Microfluidic Assays*

Juan Santiago, Charles Lee Powell Foundation Professor, Stanford University, United States of America

10:30 Mid-Morning Coffee Break and Networking in the Exhibit Hall

11:00 Technology Spotlight Presentation

Integration of Mixed Materials Components for Microfluidic Design and Manufacturing

Stefano Begolo, Director of Microfluidic Engineering, ALine, Inc., United States of America



11:30 Technology Spotlight Presentation
Consumables for Life Sciences and Diagnostics Made of Glass
 Tobias Bauert, Business Development Manager, IMT
 Microtechnologies, Switzerland



12:00 Technology Spotlight Presentation
Elveflow, Microfluidics One-Stop-Shop: PDMS Microfabrication and Flow Control
 Théo Champetier, Technical Sales Engineer, Elvesys, France
 Anatole Héliot, Elvesys, France



12:30 Networking Buffet Lunch in the Exhibit Hall -- Networking with Colleagues, Engage with Exhibitors, View Posters

Session Title: 3D-Printing of Microfluidics

Session Chair: Professor Albert Folch, University of Washington

14:00 *Progress in Advanced 3D Printing for Microfluidics*
 Gregory Nordin, Professor, Brigham Young University, United States of America

14:30 Technology Spotlight Presentation
DLP 3D Printing: Modern Technology for In-House Manufacturing
 Ken Wang, Technical Manager, ASIGA, United States of America



15:00 *Design Principles For 3D-Printed Microfluidics*
 Noah Malmstadt, Professor, Mork Family Dept. of Chemical Engineering & Materials Science, University of Southern California, United States of America

15:30 Technology Spotlight Presentation
Microfluidics and Direct Laser Write Technology: How to Make the Right Choice?
 Nicolas Brillouet, CTO, Kloé, France



16:00 Mid-Afternoon Coffee Break and Networking in the Exhibit Hall

16:30 Technology Spotlight Presentation
Standardization Meets Customization
 Claudia Gärtner, CEO, microfluidic ChipShop GmbH



17:00 Technology Spotlight Presentation
The Smaller Dimension – The Relevance of Nano-Scale Precision in Clinical Diagnostics
 Magdalena Schimke, Business Development and Sales, Single Cell Diagnostics, STRATEC Consumables GmbH, Austria



17:30 Technology Spotlight Presentation

Scaling Up PDMS Microfluidic Chips: Prototyping, Production Challenges, and Transition to Injection Molding

Jing Chen, CEO, HiComp Microtech, United States of America



18:00 *Microfluidic T Cell Engineering for Immunotherapies*

Abraham Lee, Chancellor's Professor, Biomedical Engineering & Director, Center for Advanced Design & Manufacturing of Integrated Microfluidics, University of California-Irvine, United States of America

18:30 Networking Reception with Beer and Wine in the Exhibit Hall - Engage with Exhibitors and View Posters

Poster Prizes Sponsored by RSC Journals – *Lab-on-a-Chip* Journal Major Conference Sponsor



19:30 Close of Day 2 Conference Programming

Coffee and Pastries and Networking in the Exhibit Hall Start at 08:00

**SelectBIO Lab-on-a-Chip and Microfluidics World Congress 2023
November 30, 2023 – Day 3
Ballroom "A"**

08:30 *Engineering Organotypic Disease On-a-Chip Models; Harnessing Innovations in Microfluidics, Biomaterials and Single-Cell Resolution Analysis*
Mehdi Nikkhah, Associate Professor of Bioengineering, Arizona State University, United States of America

09:00 *It Took 20 Years for Our Overnight Success!*
Ravi Kapur, CEO, AutoIVF Inc., United States of America

09:30 *How Does ChipShop See the Evolution of the Lab-on-a-Chip and Organ-on-a-Chip Fields*
Claudia Gärtner, CEO, microfluidic ChipShop GmbH, Germany

10:00 *Microfluidics for Assessing Breast Cancer Susceptibility*
Lydia Sohn, Almy C. Maynard and Agnes Offield Maynard Chair in Mechanical Engineering, University of California-Berkeley, United States of America

10:30 *Wet Parylene-based Sensors*
Ellis Meng, Shelly and Ofer Nemirovsky Chair of Convergent Biosciences and Professor of Biomedical Engineering, University of Southern California, United States of America

11:00 Mid-Morning Coffee Break and Networking in the Exhibit Hall

11:30 *Prototyping of Microphysiologic Cell Culture Systems That Mimic Key Aspects of the Human Body*

Mandy Esch, Project Leader, National Institute of Standards and Technology (NIST), United States of America

12:00 *Building Bespoke Artificial Cells and Tissues for Drug Discovery*

Katherine Elvira, Associate Professor, Canada Research Chair, Michael Smith Health Research BC Scholar, University of Victoria, Canada

12:30 *A Novel Microfluidic Platform for Biomedical Applications –Thin-film Direct Coating (TDC) Technology*

An-Bang Wang, Distinguished Professor, Institute of Applied Mechanics, National Taiwan University, Taiwan

13:00 Networking Buffet Lunch in the Exhibit Hall -- Networking with Colleagues, Engage with Exhibitors, View Posters

14:00 *Neutrophil Extracellular Traps (NETs) Measurements In a Drop of Blood*

Daniel Irimia, Associate Professor, Surgery Department, Massachusetts General Hospital (MGH), Shriners Burns Hospital, and Harvard Medical School, United States of America

14:30 *Tracking Tumor Heterogeneity and Plasticity using Microfluidics and Biomaterials*

Ian Wong, Associate Professor of Engineering and of Pathology, Brown University, Brown University, United States of America

15:00 *Microfluidics for High-Resolution Analysis of Genomic Adaptation, Rapid Immunodiagnosics and Beyond*

Yuguang Liu, Assistant Professor and Associate Consultant, Microbiome Program, Mayo Clinic, United States of America

15:30 Mid-Afternoon Coffee Break and Networking in the Exhibit Hall

16:15 *An Automated Digital Microfluidic Platform Integrated with Electrochemical Biosensor to Detect Circulating PD-L1 in Extracellular Vesicle and Soluble Forms*

Yuqian Zhang, Research Fellow, Mayo Clinic, United States of America

16:45 *Microfluidic Multi-well Plate for Biaxial Intestinal Cell Stretching and Compression*

Liyuan Gong, Researcher, University of Rhode Island, United States of America

Coffee and Pastries and Networking in the Exhibit Hall Start at 08:00

SelectBIO Extracellular Vesicles & Cell-Free RNAs 2023

November 29, 2023 – Conference Day 2

Ballroom “B”

Chaired by Michael Graner and Terry Morgan

08:50 Welcome and Introduction by Conference Co-Chairs: Professors Graner and Morgan

Session Title: State of the Extracellular Vesicles Field, circa 2023

09:00 *Immune-Associated Extracellular Vesicles in Blood*

Shannon Stott, Assistant Professor, Massachusetts General Hospital & Harvard Medical School, United States of America

09:30 *Electrokinetic-based Microchip for Purification and Characterization of Small Extracellular Vesicles*

Leyla Esfandiari, Associate Professor of Biomedical Engineering, University of Cincinnati, United States of America

10:00 *Extracellular Biology and Liquid Biopsies: What is Next?*

Jennifer Jones, NIH Stadtman Investigator, Head of Transnational Nanobiology, Laboratory of Pathology, Center for Cancer Research, National Cancer Institute, United States of America

10:30 Mid-Morning Coffee Break and Networking in the Exhibit Hall

11:15 *Mechanisms of Extracellular Vesicle Biogenesis that Regulate Wound Healing*

Brian Eliceiri, Professor, UC-San Diego, United States of America

11:45 *Placental Extracellular Vesicles; Regulators of Maternal Physiology*

Larry Chamley, Professor and Head of Department of Obstetrics and Gynaecology, University of Auckland, New Zealand

12:15 *Everything We Think We Know About Extracellular Vesicle Cargo is Wrong*






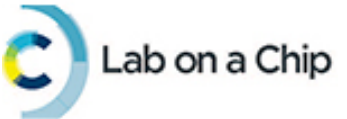
Terry Morgan, Professor, Oregon Health and Science University, United States of America

12:45 Networking Luncheon in the Exhibit Hall -- Network with Exhibitors, View Posters

Session Title: Technologies Driving the Extracellular Vesicles Field Forward

14:00 *Digital Flow Cytometry for the High-Throughput Multiplexed Analysis of Single Extracellular Vesicles and Particles*

Daniel Chiu, A. Bruce Montgomery Professor of Chemistry, University of Washington, United States of America

- 14:30 Particle Metrix GmbH Technology Spotlight Presentation
 Sven Rudolf Kreutel, Chief Executive Officer, Particle Metrix GmbH and CEO, Particle Metrix Inc., USA 
- 15:00 BD Biosciences Technology Spotlight Presentation 
- 15:30 Mid-Afternoon Coffee Break and Networking in the Exhibit Hall
- 16:00 *Screening Tests using Micro- and Nanofluidics for Early Detection of Ovarian Cancer with Extracellular Vesicles Serving as the Input*
 Steve Soper, Foundation Distinguished Professor, Director, Center of BioModular Multi-scale System for Precision Medicine, The University of Kansas, United States of America
- 16:30 Technology Spotlight Presentation
Accurate Nanoparticle Size, Concentration, and Payload with Spectradyne's ARC Particle Analyzer
 Jean-Luc Fraikin, CEO, Spectradyne, United States of America 
- 17:00 Technology Spotlight Presentation
Combining Flow Cytometry and Particle Analysis to Meet the Challenges of EV Characterization
 Michael Jacobs, Applications Scientist, NanoFCM, United States of America 
- 17:30 *Liquid Biopsy Core (LBC) - Enabling Tools for the Isolation of Liquid Biopsy Markers and Their Molecular Analysis*
 Malgorzata Witek, Associate Research Professor, The University of Kansas, United States of America 
- 18:00 *Dielectrophoresis Based Collection of Extra Cellular Vesicles and On Chip Analysis of Nucleic Acid Payload*
 Stuart Ibsen, Assistant Professor, The Knight Cancer Institute's Cancer Early Detection Advanced Research Center (CEDAR), Oregon Health and Science University, United States of America
- 18:30 Networking Reception with Beer and Wine in the Exhibit Hall
 Poster Prizes Sponsored by RSC Journals – *Lab-on-a-Chip* Journal Major Conference Sponsor 
- 19:30 Close of Day 2 Conference Programming

**SelectBIO Extracellular Vesicles & Cell-Free RNAs 2023
November 30, 2023 – Conference Day 3
Ballroom “B” -- Chaired by Michael Graner and Terry Morgan**

08:30 Technology Spotlight Presentation

Ultrasensitive EV Detection by Flow Cytometry

Giacomo Vacca, President & CEO, Kinetic River Corp., United States of America



09:00 *Immiscible Aqueous Droplets for Biosensing, Wound Healing Models, and Exosome Manipulation*

Shuichi Takayama, Professor, Georgia Research Alliance Eminent Scholar, and Price Gilbert, Jr. Chair in Regenerative Engineering and Medicine, Georgia Institute of Technology & Emory University School of Medicine, United States of America

09:30 *CD47 Functions in Extracellular Vesicle RNA Cargo Loading and Extracellular Signaling in Cancer and Immune Cells*

Sukhbir Kaur, Staff Scientist, National Cancer Institute, National Institutes of Health, United States of America

10:00 Mid-Morning Coffee Break and Networking in the Exhibit Hall

10:30 Technology Spotlight Presentation

Flexible Solutions for Extracellular Vesicle Analysis

Jason Lowery, Regional Marketing Development Manager, Beckman Coulter Life Sciences, United States of America



11:00 Technology Spotlight Presentation

Expanding Capabilities for Small Particle Analysis Using Imaging Flow Cytometry and Full Spectral Flow Cytometry

Stephanie Brunelle, Senior Product Manager, Cytek BioSciences, United States of America



11:30 *NCATS Program on Exosome Therapeutics for Regenerative Medicine (ExTReMe)*

Danilo Tagle, Director, Office of Special Initiatives, National Center for Advancing Translational Sciences at the NIH (NCATS), United States of America

12:00 *Opiates and HIV Alter Exosomal EV microRNA Cargo*

Andrea Raymond, Associate Professor, Herbert Wertheim College of Medicine, Florida International University, United States of America

12:30 *Extracellular RNAs Associated with Neurodegenerative Disease and Injury*

Kendall Van Keuren-Jensen, Professor and Deputy Director, Translational Genomics Research Institute, United States of America

13:00 Networking Lunch in the Exhibit Hall—Engage with Exhibitors, View Posters

SelectBIO Materials & Tools for Developing POC & Rapid Dx 2023
November 30, 2023 – Conference Day 3
Ballroom “B”

Session Title: Technologies Driving the POC Field Forward

14:00 *Point of Care Diagnostics – The Opportunity for Real-Time POC Using Microfluidic Sensors and Biosensors*
 Martyn Boutelle, Professor of Biomedical Sensors Engineering, Imperial College London, United Kingdom

14:30 *Digital Resolution Detection Without Droplets or Enzymes through Photonic Crystal Amplification*
 Brian Cunningham, Professor and Intel Alumni Endowed Chair, University of Illinois at Urbana-Champaign, United States of America

15:00 Technology Spotlight Presentation
A Novel Method for High Throughput Lyobead Formation in Diagnostic Kit Manufacturing
 Rob Rich, Director of Sales, North America (West), BioDot, Inc., United States of America



15:30 Technology Spotlight Presentation
Technology to Break the 10-minute Sample to Answer Barrier for Molecular Point of Care Diagnostics
 Jacob Hambalek, Scientist, Autonomous Medical Devices Incorporated, United States of America



16:00 Afternoon Coffee Break and Networking in the Exhibit Hall

16:30 *A High-Density, Standardized, Mass-Producible Connector*
 Trevor McQueen, Professor, Foothill College, United States of America

17:00 *Chemically Programmable Isothermal PCR Enables Rapid Nucleic Acid-based Bioanalysis at the Point of Need*
 Victor Ugaz, Professor & Interim Department Head, Texas A&M University, United States of America

17:30 *Detection of Cancer Related Protease Biomarkers from Blood Spot Cards – Transition to Viable POC Diagnostics for Cancer*
 Michael Heller, Professor, Dept Bioengineering, University of California-San Diego, United States of America

18:00 Close of Conference

Training Courses in Tandem with the SelectBIO Main Conference

In addition to the main conference, there are a number of training courses that complement the main conference content by providing a deep dive into the subject matter – excellent opportunity to get a solid feel of these topics.

****Separate Registration Required to Attend these Training Courses****

Tuesday, 28 November 2023

08:00 – 10:00

Plastic-based Microfluidics and Nanofluidics

Presented by Professor Steve Soper, Foundation Distinguished Professor, University of Kansas

10:00 – 12:00

Microfluidics Technologies for Point-of-Care Diagnostics Applications: Technologies, Applications, Research Trends

Presented by Dr. Claudia Gärtner, CEO, microfluidic ChipShop

12:00 – 14:00

Microfluidic Product Development

Presented by Dr. Leanna Levine, Founder & President, ALine Inc. and Dr. Stefano Begolo, Director of Engineering, ALine, Inc.

20:30 – 22:30

3D-Printing of Microfluidics

Presented by Professor Noah Malmstadt, Professor of Chemical Engineering and Materials Science, University of Southern California

Wednesday, 29 November 2023

07:30 – 09:00

Introduction to Microfluidics Training Course

Presented by Shuichi Takayama, Professor, Georgia Research Alliance Eminent Scholar, and Price Gilbert, Jr. Chair in Regenerative Engineering and Medicine, Georgia Institute of Technology & Emory University School of Medicine