

Sunday, March 22, 2026

17:00-19:00: On-site Registration / Badge Pickup

Day 1: Monday, March 23, 2026

08:30-09:00: Opening Session

Welcome by BEBI-2026 Chair on behalf of the IOC, and Conference Manager

Anthony Guiseppi-Elie, ScD, Sr. Fellow and President, AIMSEI and Sr. Dresden Fellow, TU Dresden

09:00-09:45: Plenary Talk

A Hitchhiker's and Backpacker's Guide to Drug Delivery and Biomaterials

Samir Mitragotri, PhD

Hiller Professor of Bioengineering & Wyss Professor of Biologically Inspired Engineering, Wyss Institute, Harvard University, MA, USA

09:45-10:45: Bio-Innovation Plenary Panel

A moderated plenary session exploring key lab-to-fab and bench-to-bedside challenges in translating biomedical innovations to market. The panel brings together an academic entrepreneur, technology transfer executives, and an industry consultant to share insights on successful commercialization pathways.

Moderator

Cecilia Zapata-Harms, MS, MHA

CEO, Palmetto InnovaSphere, Inc.

Panelists

Samir Mitragotri, PhD

Hiller Professor of Bioengineering & Wyss Professor of Biologically Inspired Engineering, Wyss Institute, Harvard University, MA, USA

Tong Sun, MS, MBA

Executive Director, Institute of Translational Health Sciences (ITHS) and Assistant Dean, School of Medicine, University of Washington, WA, USA

10:45-11:00: Tea/Coffee Break

11:00-11:45: Plenary Talk

AI-Powered Neuromorphic Sensors for Medical Diagnostics

Gianaurelio Cuniberti, PhD

Professor and Chair of Materials Science and Nanotechnology, Institute for Materials Science and Nanotechnology and Max Bergmann Center of Biomaterials, TU Dresden, Germany

Session: Nano Bioengineering and Smart Drug Delivery Systems

Session Chair: Frank Alexis, Universidad San Francisco de Quito, Ecuador

11:45-12:15: Ultrasound-Responsive Piezoelectric Biodegradable Nanoparticles for Drug-Free Anticancer Therapy

Gianni Ciofani, Istituto Italiano di Tecnologia, Italy (Keynote)

12:15-12:35: New Ocular Biomaterials Utilizing Biomimetic Complexation for Controlled and Sustained Drug Delivery

Mark Byrne, Rowan College of Engineering & Cooper Medical School of Rowan University, NJ, USA (Featured)

12:35-12:55: Stimuli-Responsive Polymers for Biomedical Technologies

John G. Hardy, Lancaster University, United Kingdom (Featured)

12:55-13:15: Precise Functionalization of DNA Scaffold Particles for Enhanced NK Cell Antitumor Efficacy

Marwa Sallam, Brown University, RI, USA (Invited)

13:15-14:00: Lunch Break

Session: Biomaterials and Tissue Engineering

Session Chair: John G. Hardy, Lancaster University, United Kingdom

14:00-14:30: Biogenic Carbon Quantum Dots as a Neoteric Inducer in the Game of Directing Chondrogenesis

Monalisa Mukherjee, Amity University, India (Keynote)

14:30-15:00: Revealing Novel Structures and Benefits of *Pseudomonas aeruginosa* Biofilms through Bioprinted Models

Erik Reimhult, BOKU University, Austria (Keynote)

15:00-15:20: Functional Nanobiomaterials in Tissue Engineering

Prabir Patra, Marshall University, WV, USA (Invited)

15:20-15:40: Integrating Organoid Models and Milk Fat Globule Proteomics to Study Transporter Biology in Human Lactation

Misba Majood, Johns Hopkins University, MD, USA

15:40-16:00: Engineering an Artificial Lymph Node for Antigen-Specific Immunomodulation in Type I Diabetes

Madison Deeson, Houston Methodist Research Institute, TX, USA

16:00-16:20: A Smart and Highly Porous Hydrogel for Diabetic Wound Healing

Nouf Al Saleh, King Abdullah University of Science and Technology, Saudi Arabia

16:20-16:35: Tea/Coffee Break

Session: Sensors and Wearable Technologies

Session Chair: Monalisa Mukherjee, Amity University, India

16:35-17:05: Leveraging Sensors and AI for Wound Healing: Opportunities and Challenges

Shekhar Bhansali, Vanderbilt University, TN, USA (**Keynote**)

17:05-17:25: Nanostructured Biosensor for the Dual Detection of Glucose and Ascorbic Acid

Rossana Madrid, National University of Tucumán-INSIBIO/CONICET, Argentina (**Featured**)

17:25-17:45: Antifouling Polymer Brush-Based Biosensors for Rapid and Reusable On-Site Diagnostics

Hana Lisalova, Institute of Physics of the Czech Academy of Sciences, Czech Republic (**Featured**)

18:00-19:30: Special Event (Welcome Reception)

End of Day 1

Day 2: Tuesday, March 24, 2026

08:30-09:00: On-site Registration / Badge Pickup

09:00-09:45: Plenary Talk

Shaping Surfaces: How Polymer Patterns Affect Early Bacterial Adhesion

Frank Alexis, PhD

Universidad San Francisco de Quito, Ecuador

09:45-10:45: Biomedical Engineering Education Plenary Panel

A moderated plenary discussion on the evolution of convergent academic programs centered on the life sciences, including Engineering–Medicine, Sustainability, and Genome Engineering. The panel brings together academic leaders who have successfully launched such programs and navigated the associated administrative and accreditation pathways.

Moderator

Anthony Guiseppi-Elie, ScD

Sr. Fellow and President, AIIMSEI and Sr. Dresden Fellow, TU Dresden

Panelists

Eric L. Miller, PhD

Division Director, Engineering Education and Centers (EEC), National Science Foundation, VA, USA

Youseph Yazdi, PhD

Center Director, Center for Bioengineering Innovation and Design (CBID), Johns Hopkins University

Lance Black, MD, MBID

Senior Associate Dean of Innovation & Strategic Projects, School of Engineering Medicine, Texas A&M University, USA

10:45-11:00: Tea/Coffee Break

11:00-11:45: Plenary Talk

Electroconductive Hydrogels for Cardiovascular and Neuronal Tissue Regenerative Engineering

Anthony Guiseppi-Elie, ScD

Sr. Fellow and President, AIIMSEI and Sr. Dresden Fellow, TU Dresden

Session: Biomedical Engineering & Bioinstrumentation

Session Chair: Hana Lisalova, Institute of Physics of the Czech Academy of Sciences, Czech Republic

11:45-12:05: Fluid Dynamics and Biomechanics After Traumatic Neural Injury

Chase Cornelison, University of Massachusetts Amherst, MA, USA (Invited)

12:05-12:25: Cyclic Nanog Induction Reverses Senescence, Restores Metabolism and Improves the Function of Aged Skeletal Muscle through Partial Reprogramming

Stelios Andreadis, University at Buffalo, The State University of New York, NY, USA (Featured)

12:25-12:45: Ribocomputing: Leveraging RNA for Computation in the Cell

Jongmin Kim, Pohang University of Science and Technology, South Korea (Invited)

12:45-13:45: Lunch Break

Session: Nano Bioengineering and Smart Drug Delivery Systems

Session Chair: Rossana Madrid, National University of Tucumán-INSIBIO/CONICET, Argentina

13:45-14:05: Gut Gelectrode: Drug Delivery and Stimulation to the Gut Via Conductive Hydrogel

Devjoy Dev, Museum of Science Boston, MA, USA

14:05-14:25: Formulation of Nanoliposomes Encapsulating Natural Bioactive Molecules Extracted by Enzymatic Hydrolysis

Louis Pruvost, University of Lorraine, France

14:25-14:45: Cell-Derived Nanoparticles as Next-Generation Therapeutics: From Biomimetic Coatings to Scalable EV Platforms

Paula Maria Pincela Lins, Hasselt University, Belgium

14:45-15:05: A Biodegradable Nanofluidic Platform for Sustained Multidrug Cancer Immunotherapy

Jingyi Wang, Houston Methodist Research Institute, TX, USA

15:05-15:25: Biodegradable Nanofluidic Drug-Eluting Seed for Sustained Intratumoral Drug Delivery of Immunotherapeutic Agents

Francesco Manfredi, Houston Methodist Research Institute, TX, USA

15:25-15:45: NanoLymph: An Implantable Immune-Engineering Platform for Transplantation Tolerance and Autoimmune Modulation

Danilo Settis, Houston Methodist Research Institute, TX, USA

15:45-16:00: Tea/Coffee Break

Session: Artificial Intelligence in Health and Medicine

Session Chair: Gianni Ciofani, Istituto Italiano di Tecnologia, Italy

16:00-16:30: Computational Medicine for Sensing Health

Rose Faghih, New York University Tandon School of Engineering, NY, USA (Keynote)

16:30-16:50: Domain-Specific Foundational Models for Trustworthy Medical Imaging

Kayhan Batmanghelich, Boston University, MA, USA (Invited)

16:50-17:10: Machine Learning Driven Optimization of Lipid Nanoparticles and RNA-based Cancer Therapeutics

Theresa M. Raimondo, Brown University, RI, USA (Invited)

17:10-17:30: Rapid Detection of Deterioration in Pediatric Oncology Patients for Sepsis Prevention

Tamara Lambert, Ann & Robert H. Lurie Children's Hospital of Chicago, IL, USA

17:30-18:00: Meet the Editors - Special Issue

Sara Ceci, Senior Publisher, Springer Nature

John G. Hardy, Lancaster University, United Kingdom

Anthony Guiseppi-Elie, ScD, Sr. Fellow and President, AllMSEI and Sr. Dresden Fellow, TU Dresden

Gianni Ciofani, PhD, EIC, BMC Biomedical Materials Science, Senior Researcher, Istituto Italiano di Tecnologia, Italy

End of Day 2

Day 3: Wednesday, March 25, 2026

08:30-09:00: On-site Registration / Badge Pickup

Poster Podium Presentations I

Poster Review Panel

Prof. Monalisa Mukherjee, Amity University, India

Prof. Gianaurelio Cuniberti, TU Dresden, Germany

Prof. Anthony Guiseppi-Elie, AIIMSEI, USA

09:00-09:15: Title to be updated

Luxin Wang, University of California Davis, CA, USA

09:15-09:30: Agarose Stamped Device for Standardized Zebrafish Larvae Immobilization

Erica Jung, University of Illinois at Chicago, IL, USA

09:30-09:45: Polydopamine and Antifouling Polymer Brushes: Toward a Substrate-Independent Coating Strategy

Judita Anthi, Institute of Physics of the Czech Academy of Sciences, Czech Republic

09:45-10:00: DNA-Based Biosensors for the Detection of miRNA Cancer Biomarkers

Veronika Hovanova, Institute of Physics of the Czech Academy of Sciences, Czech Republic

10:00-10:15: Polymer Brush-Engineered Upconversion Nanoparticles as Next-Generation Labels for Biomarker and Pathogen Detection

Michala Forinova, Institute of Physics of the Czech Academy of Sciences, Czech Republic

10:15-10:30: Effect of Membrane Polymer Surface Patterns on Initial Bacterial Adhesion

Ana Calvopiña & Renatta Dávalos Iñiguez, Universidad San Francisco de Quito, Ecuador

10:30-10:45: Tea/Coffee Break

Poster Podium Presentations II

Poster Review Panel

Dr. Rose Fagigh, New York University, USA

Dr. Gianni Ciofani, Istituto Italiano di Tecnologia, Italy

Prof. Anthony Guiseppi-Elie, AIIMSEI, USA

10:45-11:00: Dual-Targeted Antibody-Drug Conjugate for Improved Treatment of Colorectal Cancer

Oluwatomi Idowu, Massachusetts Institute of Technology, MA, USA

11:00-11:15: EMR-Based Machine Learning Prediction of Cholangiocarcinoma in Northeast Thailand

Nichcha Subdee, Columbia University, NY, USA

11:15-11:30: Modeling and Constructing Hydraulic Soft Actuators

Ayesa Siddeky, New York University Tandon School of Engineering, NY, USA

11:30-11:45: Mechanisms of Functional Mobility in Visual Impairment: An Investigation of Adaptive Sports

John Chomack, New York University, NY, USA

11:45-12:00: Title to be updated

Jinhee Yoo, Brigham and Women's Hospital, MA, USA

12:15-12:30: Dual-Function Magnetoelectric Nanoparticles for Gut Stimulation and Drug Delivery

Hager Atef Ibrahim Hasan, New York University, NY, USA

12:15-12:30: Convening Chair's Closing Remarks and Awards

End of the Conference