

Preliminary Program

Nanotechnology in Medicine V

Giardini Naxos, Sicily, Italy

April 19 – 23, 2026

Conference Chairs

Rohan Fernandes, University of Maryland College Park, USA

Juliane Nguyen, University of North Carolina, USA



Engineering
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Sunday, April 19, 2026

16:45 – 17:45	Conference Check-in
17:45 – 18:00	Welcome Conference Chairs: Juliane Nguyen; Rohan Fernandes
18:00 – 19:00	Opening Reception
19:00 – 20:30	Dinner

Monday, April 20, 2026

- 07:00 – 08:30 Breakfast
- 08:30 – 08:40 Conference Welcome (Conference Chairs, ECI Liaison)
- 08:40 – 09:40 **Plenary Talk**
Session Chairs: Juliane Nguyen; Rohan Fernandes
- TFAMoplex: A modular protein based nanoparticulate system for gene delivery**
Jean-Christophe Leroux, ETH Zurich, Switzerland
- Session 1: Enabling Technologies, AI & Emerging Tools**
Session Chairs: Félix Sauvage
- 09:40 – 10:10 **Keynote Talk**
Biomedical nanoscale chemical imaging with null-deflection atomic force microscopy-infrared spectroscopy
Rohit Bhargava, University of Illinois Urbana-Champaign, USA
- 10:10 – 10:35 Invited Talk
Light-mediated transfection for precise and enhanced corneal endothelium engineering
Félix Sauvage, Ghent University, Netherlands
- 10:35 – 11:20 Coffee Break
- 11:20 – 11:45 Invited Talk
Automated AI-based Functional Characterization of Engineered Contractile Tissues for Drug Toxicology
Parth Chansoria, ETH Zurich, Switzerland
- 11:45 – 12:10 Invited Talk
Biomolecular Engineering of Extracellular Vesicles for Precision Therapy
Mei He, University of Florida, USA
- 12:10 – 12:40 **Keynote Talk**
TBD
Inge Herrmann, ETH Zurich, Balgrist, Switzerland
- 12:40 – 14:10 Lunch
- Session 2: Nanocarriers, RNA Delivery & Vaccine Platforms**
Session Chairs: Owen Fenton
- 14:10 – 14:35 Invited Talk
Advancing the Design Logic of mRNA Nanomedicines
Owen Fenton, University of North Carolina, Chapel Hill, USA
- 14:35 – 15:00 Invited Talk
DNA Viral-Like Particles: Engineering Bioinspired Nanocarriers with Precision Immunogenicity
Leo Chou, University of Toronto, Canada
- 15:00 – 15:25 Invited Talk
Triazine lipids as a platform for subunit vaccine development
Vincent Venditto, University of Kentucky, USA
- 15:25 – 16:10 Coffee Break

Monday, April 20, 2026 (continued)

- 16:10 – 16:40 **Keynote Talk**
Multiscale Bioengineering Approaches for Novel Pulmonary Delivery Therapies
Josué Sznitman, Technion-Israel Institute of Technology, Israel
- Session 3: Scientific publishing in a time of accelerated discovery**
Session Chairs: Kaushal Rege
- 16:40 – 17:05 **Scientific publishing in a time of accelerated discovery, global shifts, and AI**
Laura Remis, AAAS, USA
- 17:05 – 17:30 **Panel Discussion**
Kaushal Rege, Arizona State University, USA
Laura Remis, AAAS, USA
- 19:00 – 20:30 Dinner

Tuesday, April 21, 2026

07:00 – 08:30

Breakfast

Session 4: Translational Nanomedicine Across Diseases

Session Chairs: Ana Beloqui

08:30 – 09:00

Keynote Talk

Nitric oxide-releasing liposomes as a therapeutic against Mycobacterium abscessus infections

Mark Schoenfisch, University of North Carolina, Chapel Hill, USA

09:00 – 09:25

Invited talk

Nanomedicine in the treatment of gastrointestinal metabolic disorders

Ana Beloqui, Université Catholique de Louvain, Belgium

09:25 – 09:50

Invited Talk

Battle of the Bio-Nanoconjugates: Comparison of Targeted Nanoparticle Platforms for Precision Cancer Therapy

Emily Day, University of Delaware, USA

09:50 – 10:35

Coffee Break

10:35 – 10:45

Lightning talk

Small extracellular vesicles (sEVs) isolation and cargo loading for cell targeting and engineering in a microfluidic framework

Anna Menale, University of Naples Federico II, Italy

10:45 – 11:15

Keynote Talk

Polypeptide-based Therapeutics with Inherent Mitochondria Tropism

Maria J. Vicent, CIPF, Spain

11:15 – 11:40

Invited Talk

A Light-activated, Carrier-free Nanodrug for Fighting Brain Cancer and Unlocking the Blood-brain Barrier

Huang-Chiao Huang, University of Maryland, USA

11:40 – 12:10

Keynote Talk

Ultrasound-responsive bicontinuous nanospheres for localized immunomodulation of the solid tumor microenvironment

Evan Scott, University of Virginia, USA

12:10 - 13:40

Lunch

Excursion to Taormina

14:15

Departure from the hotel, transfer to Taormina for guided tour followed by dinner at a Pizzeria

Wednesday, April 22, 2026

07:00 – 08:30

Breakfast

Session 5: Living Therapeutics & Engineered Biological Systems

Session Chairs: Sara Molinari

08:30 – 09:00

Keynote Talk

Engineering probiotics for real-world medical applications

Tae Seok Moon, J. Craig Venter Institute, USA

09:00 – 09:30

Keynote Talk

Cyborg cells for programmable medicine

Cheemeng Tan, University of California, Davis, USA

09:30 – 09:55

Invited Talk

Engineered Living Materials from Bacteria

Sara Molinari, University of Maryland, USA

09:55 – 10:40

Coffee Break

10:40 – 11:10

Keynote Talk

High Dimensional Analysis of T cells Responding to Noncanonical Antigens in Malignancies

C. Russell Cruz, Children's National Hospital, USA

11:10 – 11:35

Invited Talk

Biofilm-Inspired Nanomaterials for the Encapsulation and Delivery of Therapeutic Bacteria

Joel Finbloom, University of British Columbia, Canada

11:35 – 11:45

Lightning Talk

Engineered *saccharomyces boulardii* for local immunotherapy delivery ameliorates colitis

Alita Miller, University of North Carolina, Chapel Hill, USA

11:45 – 12:05

Invited Talk

Advancing Nanomedicine Through NanoFCM: Precision Characterisation of Therapeutic Nanoparticles

Racha Majed, PhD, NanoFCM

12:05 – 13:30

Lunch

Session 6: Immunoengineering

Session Chairs: Natasha Sheybani

13:30 – 14:00

Keynote Talk

Nanoparticle-driven acute immune modulation ameliorates pain and structural damage in post-traumatic osteoarthritis

Omolola Eniola-Adefeso, University of Illinois Chicago, USA

14:00 – 14:25

Invited Talk

TBD

John Wilson, Vanderbilt University, USA

14:25 – 14:55

Keynote Talk

Nanoparticulate immunoactive complex for local chemoimmunotherapy: From murine models to pilot canine study and beyond

Yoon Yeo, Purdue University, USA

14:55 – 15:40

Coffee Break

Wednesday, April 22, 2026 (continued)

15:40 – 16:05

Invited Talk

Bench-to-Bedside Engineering of Precision Immunotherapy Paradigms with Focused Ultrasound

Natasha Sheybani, University of Virginia, USA

16:05 – 16:30

Invited Talk

Enhancing cancer radiotherapy via metabolic reprogramming with bioreducible polymer nanoparticles

Christopher Grigsby, Queen's University Belfast, UK

16:30 – 17:00

Keynote Talk

Immunomodulatory Biomolecular Interventions for Skin Tissue Repair and Melanoma

Kaushal Rege, Arizona State University, USA

Free evening / Dinner on your own

Thursday, April 23, 2026

07:00 – 08:30

Breakfast

Session 7: Biophysics, Mechanics & New Approach Methodologies

Session Chairs: Hagar Labouta

08:30 – 09:00

Keynote Talk

Simple kinetic modeling frameworks to predict efficacy and potency in LNPs and RNA nanocarriers

Millicent Sullivan, University of Delaware, USA

09:00 – 09:25

Invited Talk

Biomolecular Transformation of Nanomedicines Under Shear: Addressing a Biomechanical Blind Spot in Drug Delivery

Matthias Wacker, KU Leuven, Belgium

09:25 – 09:35

Lightning Talk

Advanced in vitro models for mechano-profiling of red blood cell-based shear-responsive carriers

Anat Glozman, Technion-Israel Institute of Technology, Israel

09:35 – 10:00

Invited Talk

Prenatal Nanomedicine and Bioengineered Models of Pregnancy

Hagar Labouta, University of Toronto, Canada

10:00 – 10:45

Coffee Break

10:45 – 11:15

Invited Talk

Focal treatment of brain aneurysms via fluid mechanics-driven strategies

Netanel Korin, Technion-Israel Institute of Technology, Israel

11:15 – 11:45

Keynote Talk

TBA

Paolo Decuzzi, Italian Institute of Technology in Genova, Italy

11:45 – 11:55

Lightning Talk

Biodegradable Polymeric Nanoparticles as Radiosensitizers for Glioblastoma

Mariarita Menale, Università di Napoli Federico II, Italy

11:55 – 12:05

TBA (Discussion time)

12:05 – 12:15

Lightning Talk

Bio-based, low-swelling auxetic hydrogels for the treatment of pneumothorax

Parmis Khosravi

12:15 – 12:45

Keynote Talk

TBA

Avi Schroeder, Technion-Israel Institute of Technology, Israel

12:45 – 14:15

Lunch

14:15 – 15:15

Science Advocacy: Panel discussion

Paolo Decuzzi, Italian Institute of Technology, Italy

Lola Eniola-Adefeso, University of Illinois Chicago, USA

Millicent Sullivan, University of Delaware, USA

Kaushal Rege, Arizona State University, USA

Josué Sznitman, Technion-Israel Institute of Technology, Israel

Thursday, April 23, 2026 (continued)

- 15:15 – 16:00 Coffee Break
- 16:00 – 17:45 **Closing Plenary Session**
Session Chairs: Juliane Nguyen; Rohan Fernandes
- 16:00 – 16:45 **Plenary Talk 1**
TBA
David Rampulla, NIH/NIBIB, USA
- 16:45 – 17:45 **Plenary Talk 2**
Bioengineering Cell Based Therapeutics from Bench to Bedside
Omid Veisheh, Rice University, USA
- 19:00 – 19:30 Reception
- 19:30 – 21:00 Conference Banquet and Presentation Awards

Friday, April 24, 2026

07:00 – 09:00

Breakfast and departures