

FRONTIERS IN SYNTHETIC BIOLOGY AND BIOCONVERGENCE

Day 1

8:00	Registration
9:00	Prof. Uriel Reichman, Opening Speech
9:30	Mr. Scott Tobin and Prof. Yosi Shacham, Opening Speeches
10:00	Keynote 1: Prof. Farren Isaacs (Department of Biomedical Engineering, Yale University) <i>Genomes by Design: Reprogramming & Recoding Life's Genetic Blueprint</i>
10:40	Coffee Break

Frontiers in SynBio (A)

Chair:	Prof. Yosi Shacham (Scojen Institute, Reichman University)
11:05	Keynote 2 - Prof. Ron Weiss (Department of Biological Engineering, Massachusetts Institute of Technology) <i>Mammalian synthetic biology, programmable organoids, and neuromorphic circuits</i>
11:50	Prof. Roei Amit (Faculty of Biotechnology and Food Engineering, Technion) <i>Synthetic capacitor-like RNA and protein biocondensates facilitate a variety of biotechnological and therapeutic applications</i>
12:10	Yael Cohen (Alfonta lab, Ben Gurion University) <i>Genetically Expanded Microbial Protein Nanowires.</i>
12:25	Kravchik Valeriia (Daniel lab, Technion) <i>The Synthetic Microbiome Platform for The Living Cell Medicine</i>
12:40	Lunch

Frontiers in SynBio (B)

- Chair: Prof. Hadar Ben Yoav (Department of Biomedical Engineering, Ben-Gurion University of the Negev)
- 13:30 Dr. Lior Nissim (Faculty of Medicine, The Hebrew University of Jerusalem)
Synthetic Biology Platforms for Basic Research, Biomedicine, and Biotechnology
- 13:50 Prof. Tamir Tuller (Department of Biomedical Engineering, Tel Aviv University)
Solving fundamental problems in synthetic biology with computational models and AI
- 14:10 Dr. Ilana Kolodkin-Gal (Schoen Institute for Synthetic Biology)
Utilizing Probiotic Bacteria to Generate Biomaterials- From Walls to Teeth
- 14:20 Dr. Avinoam Bar-Zion (Department of Biomedical Engineering, Technion)
Cellular ultrasound within tumors: acoustic reporter genes and actuators for imaging and controlling therapeutic cells
- 14:35 Daniel Kaufman (Ben Yoav, BGU)
Activating Single Electrogenetic Bacterial Cells' Behavioral Response using Externally Applied Electrochemical Stimulation
- 14:45 Caroline Hali (Mizrahi lab, Technion)
Living Microneedles for Bio-polymers Production Using Bacillus Paralyticus
- 14:50 Coffee Break

Frontiers in Biomedicine (A)

- Chair: Dr. Lior Nissim (Faculty of Medicine, The Hebrew University of Jerusalem)
- 15:15 Prof. Tal Dvir (Department of Biomedical Engineering, Tel Aviv University)
Engineering personalized tissues: From 3D printing to bionic organs
- 15:45 Prof. Ben Maoz (Department of Biomedical Engineering, Tel Aviv University)
New tools for studying human physiology
- 16:05 Dr. Oren Moscovitz (Max Planck Institute of Colloids and Interfaces)
The Development of a Nanobody Against Streptococcus pneumoniae Serotype 14 for Lung Cancer Theranostics
- 16:20 Prof. Dan Bracha (Faculty of Biotechnology and Food Engineering, Technion)
Probing and Reprogramming Biomolecular Condensates in Living Cells
- 16:40 Dr. Milana Frenkel Morgenstern (Schoen Institute, Reichman University)
Liquid Biopsy in Cancers and Applications for Personalized Medicine
- 16:55 Gal Chen (Avi Schroder lab, Shulamit Levenberg Lab, Technion)
Developing Artificial Cell-Micro-Factories to Support Tissue Regeneration
- 17:05 Beer O'clock

Day 2

Frontiers in BioMedicine (B)

- Chair: Prof. Noam Lemelshtrich Latar (Schoen Institute, Reichman University)
- 9:30 Prof. Arnon-Afek (Recanati School of Medicine, Reichman University) – Opening speech
- 9:45 Prof. Rachela Popovtzer (Institute of nanotechnology and advanced materials, Bar-Ilan University)
Listen to your gut - biochip technology for microbiome detection
- 10:15 Prof. Jacob Hanna (Department of Molecular Genetics, Weizmann Institute)
Synthetic Ex Utero Embryogenesis: from Naive Stem Cells to bona fide Embryo Models
- 10:45 Coffee break
- 11:00 Chair: Prof. Ramez Daniel (Faculty of Biomedical Engineering, Technion)
Keynote speaker: Prof. Christopher Voigt
(Head, Department of Biological Engineering, Massachusetts Institute of Technology)
Reprogramming the multicellular “brain”
- 12:00 Prof. Allon Hochbaum (Department of Chemistry, University of California, Irvine)
Wiring up Biology: Natural and Synthetic Conductive Protein Wires
- 12:30–14:00 Lunch and posters

Frontiers in SynBio (C)

- Chair: Dr. Ilana Kolodkin-Gal (Schoen Institute, Reichman University)
- 14:00 Prof. Omer Yehezkeli (Faculty of Biotechnology and food Engineering, Technion)
Biotic-abiotic semiartificial cells for light-driven chiral molecule production
- 14:20 Prof. Avigdor Eldar (Shmunis School of Biomedicine and Cancer Research, Tel Aviv University)
Short-range quorum sensing and its applications for synthetic biology
- 14:40 Prof. Miriam Amiram (Department of Biotechnology Engineering, Ben-Gurion University of the Negev)
Expanding the Toolbox: Unnatural Amino Acid Incorporation in Protein-Based Polymers.
- 15:00 Amit Zirman (Department of Biochemistry and Molecular Biology, Tel Aviv University, Nachman Lab)
Enhancing proliferation of bMSC for cultured meat via pooled CRISPR screens
- 15:10 Coffee break

Synbio and Bioconvergence for Environment and Agriculture

- Chair: Dr. Yuval Dorfan (The Faculty of Electrical and Electronics Engineering, Holon Institute of Technology)
- 15:30 Prof. Eyal Arbely (Department of Chemistry, Ben-Gurion University of the Negev)
Synthetic biology-based tools for studying the functional roles and regulation of lysine ac(et)ylation
- 15:50 Prof. Adi Avni (School of Plant Sciences and Food Security, Tel Aviv University)
Can I Put Some Logic Inside My Plants?
- 16:10 Dr. Livnat Afriat-Jurnou (Migal and Tel Hai academic college, Tel Aviv University)
Integrating Enzyme Engineering and Peptide Nanostructures for Microbial Signaling Disruption, Pollutant Decontamination, and Plastic Degradation
- 16:30 Dr. Sefi Vernick (Institute of Agricultural Engineering, Volcani Center)
Harvesting Innovation: Bridging Semiconductors, Biotechnology, and Agri-Food Systems for a Sustainable Future
- 16:50 Dr. Yishay Falick (Director Healthtech and Bioconvergence Technologies, IAI)
Israel Bio-Convergence 2024- The Industry Perspective
- 17:10 Closing Ceremony and Best poster Awards

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