

UIUC/TAU Joint Virtual Workshop on Engineering and Medicine

March 26-27, 2025
08:00 AM CDT | 3:00 PM IST

The University of Illinois Urbana-Champaign (UIUC) and Tel Aviv University (TAU) are excited to present a two-day joint virtual workshop, fostering collaboration between leading researchers in engineering and medicine. This event will showcase groundbreaking research, featuring distinguished speakers from both institutions.

Zoom Meeting Information

<https://illinois.zoom.us/j/88113561123?pwd=dmtWrNwRvhf0LcLJE6VlsbrXOnMwL9.1>

Meeting ID: 881 1356 1123

Password: 661794

March 26, 2025

Chair: Gili Bisker (TAU)

8:00 - 8:05 AM CDT | 3:00 - 3:05 PM IST

Karen Avraham (TAU) – Welcome/Introduction

8:05 - 9:05 AM CDT | 3:05 - 4:05 PM IST

Dekel Rosenfeld (TAU) – Magnetothermal Stimulation for Controlling Cell Signaling

8:20 - 8:35 AM CDT | 3:20 - 3:35 PM IST

Michael Oelze (UIUC) – Ultrasound and Nonlinear Beamforming for Producing Super-Resolved Microvessel Imaging

8:35 - 8:50 AM CDT | 3:35 - 3:50 PM IST

Sharon Perlman (TAU) – AI-Companion for Fetal Malformation Diagnosis: Enhancing Clinical Precision, Supporting Expectant Parents

8:50 - 9:05 AM CDT | 3:50 - 4:05 PM IST

Claudius Conrad (UIUC) – Patient-Centered Innovation in Hepato-Pancreato-Biliary Surgery

Chair: Dekel Rosenfeld (TAU)

9:05 - 9:20 AM CDT | 4:05 - 4:20 PM IST

Gili Bisker (TAU) – Optical Nanosensors for Biomedical Applications

9:20 - 9:35 AM CDT | 4:20 - 4:35 PM IST

Rohit Bhargava (UIUC) – Chemical Imaging for Cancer Pathology

9:35 - 9:50 AM CDT | 4:35 - 4:50 PM IST

Zohar Yossibash (TAU) – Autonomous Finite Elements Combined with Deep Learning in Orthopedic and Endocrinology Clinical Practice

9:50 - 10:05 AM CDT | 4:50 - 5:05 PM IST

Rashid Bashir (UIUC) – Biomedical Applications of Micro and Nanotechnology: Point-of-Care Diagnostics and Biological Soft Robotics

Chair: Yuan Yang (UIUC)

10:05 - 10:20 AM CDT | 5:05 - 5:20 PM IST

Alexander Liberzon (TAU) – In Vitro Study of Wall Shear Stress on a Compliant Left Ventricle Model Utilizing the 3D-PTV and Fluid-Structure Interaction (FSI) Extension

10:20 - 10:35 AM CDT | 5:20 - 5:35 PM IST

Mark Cohen (UIUC) – Novel Approaches to Stem-Cell-Based Cellular Therapies and Tissue Engineering of Endocrine Organs

10:35 - 10:50 AM CDT | 5:35 - 5:50 PM IST

Ran Bachrach-Gilad (TAU) – Explainable AI for Complex Data

10:50 - 11:05 AM CDT | 5:50 - 6:05 PM IST

Yuan Yang (UIUC) – Neuroimaging for Stroke and Aging Brains

Chair: Xing Wang (UIUC)

11:05 - 11:20 AM CDT | 6:05 - 6:20 PM IST

Asaf Olshinka (TAU) – Advanced Wound Healing in Chronic Diabetic Leg Ulcers with Multifunctional Vaterite Nanoparticles

11:20 - 11:35 AM CDT | 6:20 - 6:35 PM IST

Sergei Maslov (UIUC) – AI-Driven Insights into Gene Regulation: RNA Velocity without Splicing

11:35 - 11:50 AM CDT | 6:35 - 6:50 PM IST

Brad Sutton (UIUC) – Ultrafast Functional MRI at 7T to Visualize Physiological Signals

11:50 - 12:00 PM CDT | 6:50 - 7:00 PM IST

Mark Cohen (UIUC) – Closing Remarks

March 27, 2025

Chair: Ayelet Lesman (TAU)

8:00 - 8:05 AM CDT | 3:00 - 3:05 PM IST

Dean Bashir (UIUC) - Welcome/Introduction

8:05 - 8:20 AM CDT | 3:05 - 3:20 PM IST

Tali Ilovitsh (TAU) - New Horizons in Medical Ultrasound for Imaging and Noninvasive Therapy

8:20 - 8:35 AM CDT | 3:20 - 3:35 PM IST

Jim Rehg (UIUC) - Foundation Models for mHealth Signals

8:35 - 8:50 AM CDT | 3:35 - 3:50 PM IST

Ben Maoz (TAU) - Organs on a Chip: A New Tool for Studying Human Physiology

8:50 - 9:05 AM CDT | 3:50 - 4:05 PM IST

Zhi-Pei Liang (UIUC) - AI-Powered MRI: Towards an Omni Imaging Technology for Brain Mapping

Chair: Nathan T. Shaked (TAU)

9:05 - 9:20 AM CDT | 4:05 - 4:20 PM IST

Ayelet Lesman (TAU) - Forces at Play: Cellular Interactions and Collective Behavior in Fibrous Matrices

9:20 - 9:35 AM CDT | 4:20 - 4:35 PM IST

Stephen Boppart (UIUC) - Intraoperative Label-Free Multi-Modal Optical Imaging for Surgical Guidance and Diagnostics

9:35 - 9:50 AM CDT | 4:35 - 4:50 PM IST

Tamir Tuller (TAU) - Solving Fundamental Problems in Biotechnology and Medicine With Computational Models of Gene Expression and AI

9:50 - 10:05 AM CDT | 4:50 - 5:05 PM IST

Joseph Irudayaraj (UIUC) - Oxygen Nanobubbles for Treating Ischemic Diseases

Chair: Fan Lam (UIUC)

10:05 - 10:20 AM CDT | 5:05 - 5:20 PM IST

Nathan T. Shaked (TAU) - Photothermal Holographic Imaging in Live Biological Cells via Plasmonic Gold Nanoparticles

10:20 - 10:35 AM CDT | 5:20 - 5:35 PM IST

Wawrzyniec Dobrucki (UIUC) - Molecular Imaging of RAGE and Its Implications for Cancer Diagnosis and Treatment

10:35 - 10:50 AM CDT | 5:35 - 5:50 PM IST

Fan Lam (UIUC) - Towards Quantitative Multiplexed Molecular Imaging of the Brain

10:50 - 11:05 AM CDT | 5:50 - 6:05 PM IST

Tomer Itkin (TAU) - Endothelial Cell Programming Towards Regenerative Vascularization

Chair: Brad Sutton (UIUC)

11:05 - 11:20 AM CDT | 6:05 - 6:20 PM IST

Xing Wang (UIUC) - Designer DNA Architectures for Disease Diagnosis and Treatment

11:20 - 11:35 AM CDT | 6:20 - 6:35 PM IST

Amy Wagoner Johnson (UIUC) - Environmental Toxicants and Uterine Fibrosis

11:35 - 11:50 AM CDT | 6:35 - 6:50 PM IST

Adva Simantov Damti (TAU) - US-Israel Joint Research Funding Opportunities

11:50 - 12:00 PM CDT | 6:50 - 7:00 PM IST

Brian Rosen (TAU) - Closing Remarks