Brainy Days in Jerusalem 4: The Future of Neuroscience

December 12-14, 2022

The Suzanne and Charles Goodman
Brain Sciences Building,
Edmond J. Safra Campus, Jerusalem

Program

Monday, December 12th
09:00-09:30 Gathering and registration
09:30-09:40 Organizing Committee — Opening remarks

Session I: The Future of Human Neuroscience
09:40-10:25 Arnold Kriegstein (UCSF) — Molecular and cellular, stem cells development and evolution of human cortex
10:25-11:10 Daphne Bavelier (University of Geneva) — Gaming the brain: Perspectives on brain plasticity and learning
11:10-11:30 Coffee break
11:30-12:15 Lionel Naccache (ICM) — My take on immediate (and less immediate) future of therapeutics of consciousness
12:15-13:00 Naomi Habib (Hebrew University of Jerusalem) — Uncovering cellular dynamics underlying aging and Alzheimer’s disease: One cell at a time

13:00-14:30 Lunch break + Poster session

Session II: The Quest for the Symbolic Brain
14:30-15:15 SueYeon Chung (NYU, Flatiron Institute) — Object manifolds in biological and artificial neural networks: from vision to language
15:15-16:00 Michal Ben-Shchar (Bar-Ilan University) — Language pathways in the human brain: What we know, what we don’t know, and what we need to know going forward
16:00-16:20 Coffee break
16:20-17:05: Uri Hasson (Princeton University) — Deep language models as a cognitive model for natural language processing in the human brain
Tuesday, December 13th

Session III: The Promise and Challenges of Big Data in Neuroscience
09:30-10:15 Herwig Baier (MPI Martinsried) – Neural basis of elementary cognition in larval fish
10:15-11:00 Moritz Helmstaedter (MPI Frankfurt) – Cerebral Cortex Connectomics
11:00-11:20 Coffee break
11:20-12:05 Mackenzie W. Mathis (EPFL) - Learnable latent embeddings of behavioral and neural data

Session IV: The Future of AI and Neuroscience
12:05-12:50 Yair Weiss (Hebrew University) – The innovator's dilemma in artificial intelligence
12:50-14:00 Lunch break
14:00-14:45 Cengiz Pehlevan (Harvard University) – Deep learning from a neuroscience perspective
14:45-15:30 Radoslaw Cichy (Freie Universität Berlin) – Deep neural networks as scientific models of vision

Wednesday, December 14th

Session V: Towards Naturalistic Social Brain
09:30-10:15 Daniela Schiller (Mount Sinai) - Navigational computations of social space in the human brain
10:15-11:00 Iain Couzin (University of Konstanz, MPI of Animal behavior) – The Geometry of decision-making
11:00-11:20 Coffee break
11:20-12:05 Simone Shamay-Tsoory (Haifa University) – A two-brain approach for understanding the empathic brain
12:05-12:50 Rita Goldstein (Mount Sinai): New approaches to the neuroscience of drug addictions

Session VI: Trends in Plasticity, memory and adaptive behavior
12:50-14:00 Lunch break
14:00-14:45 Christine Grienberger (Brandeis University) - Mechanisms of experience-dependent neuronal computations
14:45-15:05 Coffee break
15:05-15:50: Elizabeth A. Buffalo (University of Washington) – Situating the hippocampus in the perception-action cycle
15:50-16:35: Charan Ranganath (UC Davis) – Complementary Learning Systems in Memory and Navigation
16:35-17:00 Discussion
17:00-17:15 Closing remarks

Program Committee: Lilach Avitan, Adi Mizrahi, Leon Deouell, Haim Sompolinsky