Neural Circuits: From Structure to Computation
December 16-17, 2015
Mishkenot Sha‘ananim, Jerusalem
Organizing Committee: Yonatan Loewenstein, Sebastian Seung

Wednesday, December 16th, 2015
9:00-9:20 – Eilon Vaadia – Director of the Edmond and Lily Safra Center for Brain Sciences at The Hebrew University of Jerusalem
Nir Shaviv – Chairman of the Racah Institute of Physics at The Hebrew University of Jerusalem
Opening Remarks

Chair: Oren Shriki – Ben-Gurion University of the Negev
9:20-10:00 – David Kleinfeld – University of California, San Diego
Circuits That Integrate Orofacial Motor Actions into Behaviors

10:00-10:40 – Larry Abbott – Columbia University
From Rates to Spikes and Back Again

10:40-11:10 – Coffee Break

11:10-11:50 – Florian Engert – Harvard University
Binocular Motion Processing in the Larval Zebrafish

11:50-12:30 – Catherine Dulac – Harvard University
Plasticity of Social Representation in the Mouse Medial Amygdala

12:30-13:40 – Light Lunch

Chair: Joshua Goldberg – The Hebrew University of Jerusalem
Large-Scale Computational Models of Cerebral Cortex and Cortical Dynamics

14:20-15:00 – Ila Fiete – University of Texas
Exponentially Many Robust Attractors in Hopfield Networks with Linearly Many Neurons

15:00-15:30 - Coffee Break

15:30-16:10 – Thomas Mrsic-Flogel – University of Basel
Principles of Local and Long Range Connectivity in Mouse Visual Cortex

16:10-16:50 – Yonatan Loewenstein – The Hebrew University of Jerusalem
The Computational Implications of Synaptic Volatility in the Cortex

18:30 – Dinner – Olive & Fish restaurant (for invited guests only)
Thursday, December 17th, 2015

Chair: Ariel Furstenberg – The Hebrew University of Jerusalem
9:00-10:00 – Keynote lecture by Haim Sompolinsky – The Hebrew University of Jerusalem
Brain Manifolds: The Geometry of Neural Representations

10:00-10:40 – Daniel Lee – University of Pennsylvania
Bandits With Attitude

10:40-11:10 – Coffee Break

11:10-11:50 – Yoram Burak – The Hebrew University of Jerusalem
Shaping Neural Circuits by High Order Synaptic Interactions

11:50-12:30 – Surya Ganguli – Stanford University
The Functional Contribution of Synaptic Complexity to Learning and Memory

12:30-13:40 – Light Lunch

Chair: David Golomb – Ben-Gurion University of the Negev
13:40-14:20 – Idan Segev – The Hebrew University of Jerusalem
Electrically-Coupled Cortical Interneurons: From Biophysics to Function

14:20-15:00 – Jackie Schiller – Technion, Israel Institute of Technology
Nonlinear Dendritic Amplification Mechanisms in Neocortical Neurons

15:00-15:30 - Coffee Break

15:30-16:10 – Winrich Freiwald – The Rockefeller University
On the Neural Circuits of Face Recognition

16:10-16:50 – Sebastian Seung – Princeton University
Unbiased anatomical classification of retinal ganglion cells via serial electron microscopy