Interactions, forces and motion of biomolecules, cells and organisms, in both in-vivo and synthetic environments are an important focus of the field of Biological Physics. The “Biological Physics Group” at Weizmann Institute of Science includes researchers from different departments that study living matter from the perspective of its physical properties, from molecular level experiments to coarse-grained observations and models. The goal is to advance our understanding of the living world, with emphasis on how the lessons learned from the biological systems also expand the scope of physics.

Organizing Committee

Nir Gov [chair]
Gilad Haran
Jacob Klein
Sam Safran
Elisha Moses
Michael Elbaum
Roy Bar-Ziv
Ofer Feinerman

9:00 Welcome and introductions
9:15 Gilad Haran
Unraveling the complexity of protein dynamics with single-molecule fluorescence
9:40 Jacob Klein
Biological lubrication and mechanotransduction
10:05 Biomolecules-Biomaterials panel
Sarel Fleishman, Roby Levi, Emmanuel Levy, Lia Addadi, Avi Minsky, Daniel Wagner
10:40 Coffee Break
11:10 Sam Safran
Matrix mechanics: Why do cells “care”
11:35 Elisha Moses
Lessons learned in small neuronal networks
12:00 Morphogenesis panel
Shalev Itzkovich, Benny Shilo, Naama Barkai
12:35 Lunch Break+Posters
14:15 Michael Elbaum
Maxwell’s demon at the nuclear pore: the end of an enigma?
14:40 Roy Bar-Ziv
Two-dimensional, gene expression reaction-diffusion compartments as artificial cells
15:05 Systems Biology-Networks panel
Uri Alon, Ron Milo, Nir Friedman, Yoav Soen, Joel Stavans
15:45 Coffee Break
16:05 Ofer Feinerman
Confidence and influence in ant colonies
16:30 Nir Gov
A universal law of cell migration
16:55 Cell biology panel
Benny Geiger, Alexander Bershadsky, Ronen Alon
17:30 Closing cocktail and informal discussions

For more information
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www.weizmann.ac.il/conferences/BP2013