The 12th Karniel Computational Motor Control Workshop  
June 19-21, 2016  
W. A. Minkoff Senate Hall, BGU Marcus Family Campus,  
Beer-Sheva, Israel

Department of Biomedical Engineering,  
Zlotowski Center for Neuroscience at Ben-Gurion  
ABC Cognitive Robotics Center  
supported by Leona M. and Harry B. Helmsley Charitable Trust

**Sunday, June 19**

**Lab visits**
- 15:00-17:00 Motor control labs at BGU:  
  - **Physiotherapy**  
    - The laboratory for Rehabilitation and Motor Control of Walking, *Simona Bar-Haim*  
    - Cognition Aging and Rehabilitation laboratory, *Shelly Levy-Tzedek*  
    - Schwartz Movement Analysis & Rehabilitation Laboratory, *Itzik Melzer*  
  - **Biomedical engineering**  
    - Biomedical Robotics Laboratory, *Ilana Nisky*  
    - Motor Learning Laboratory, *Opher Donchin*  
  - **Industrial Engineering and cognition**  
    - Biomechanics and robotics Laboratory, *Raziel Riemer*  
    - Telerobotics laboratory, *Sigal Berman*  
    - Brain and Action Laboratory, *Lior Shmuelof*  

Labs tour will start from Student Center (near bank Hapohalim) at 15:00

**Festive dinner**
- 18:00 Location "Lola", Friend café  
  - Dr Eilat Almagor, The Jerusalem Academy of Music and Dance, Israel  
  - & Prof Dorit Aharonov, School of Computer Science and engineering, The Hebrew University, Jerusalem  
  - "Awareness Through Movement as a guide to Mathematical Learning"
Monday, June 20

- 08:30-08:50 Registration, Poster placement and coffee
- 08:50-09:00 Opening Remarks Prof. Rivka Carmi, President of Ben-Gurion University

Session 1 – Motion Planning
Chair: Sandro Mussa-Ivaldi, Rehabilitation Institute of Chicago, USA

- 09:00-09:30 Björn Brembs, Universität Regensburg, Germany
  "The common biology of motor learning, operant conditioning and model-free learning"
  Keynote Lecture
- 09:30-10:00 Lior Shmuelof, Ben-Gurion University, Israel
  "On the fly planning of pre-planned curved trajectories"
- 10:00-10:30 Einat Couzin, Konstanz university, Germany
  "Control of 6-legged locomotion"
- 10:30-10:40 Discussion
- 10:40-11:20 Coffee break

Session 2 - Rehabilitation
Chair: Mindy Levin, McGill University, Canada

- 11:20-11:50 Mark Latash, Pennsylvania State University, USA
  "Impaired control of movement stability in neurological patients"
- 11:50-12:20 Tamar Weiss, University of Haifa, Israel
  "A multi-dimensional approach to evaluate performance of complex daily activities of young and older adults in a simulated mall"
- 12:20-12:50 Darcy Reisman, University of Delaware, USA
  "Locomotor Adaptation and Learning after Stroke"
- 12:50-13:00 Discussion
- 13:00-13:30 Lunch
- 13:30-14:30 Posters

Session 3 - Motor Control
Chair: Anatol Feldman, University of Montreal, Canada

- 14:30-15:00 Ron Meir, Technion, Israel
  "Optimal Neural Codes for Estimation and Control"
- 15:00-15:30 Robert Scheidt, Marquette University, USA
  "Neural correlates of nonlinear multisensory integration during wrist stabilization"
- 15:30-16:00 Prof. Amir Karniel Memorial Young Researcher Lecture
  Marc Deffains, Hebrew University, Israel
  "Computational physiology of Basal Ganglia & Parkinson’s disease"
- 16:00-16:10 Discussion
- 16:10-16:40 Coffee break and posters
Session 4 – Locomotion Control
Chair: Sigal Berman, Ben-Gurion University, Israel

- 16:40-17:10 Raziel Riemer, Ben-Gurion University, Israel
  “Biomechanical energy harvesting from human motion: Theory, design, and results”
- 17:10-17:40 Mati Joshua, Hebrew University, Israel
  “Linking the dynamics of activity in the frontal eye field to the planning of action selection”
- 17:40-17:50 Discussion
- 17:50-18:00 Best poster awards
- Sponsors: NBT, AlphaOmega
- 19:00 Dinner at "Avaz Hazahav" restaurant

Tuesday, June 21

Hike
An invitation to explore the ancient views within the beautiful landscape on a hike from The 'Jerusalem heals to Judea's Low lands. The core of the trip will be a 4-miles hike along 'Nahal HaMe'ara'(the cave wadi).