The 13\textsuperscript{th} Karniel Computational Motor Control Workshop

\textbf{March 14-16, 2017}

W. A. Minkoff Senate Hall, BGU Marcus Family Campus, Beer-Sheva, Israel
Tuesday, March 14
Lab visits - 11:00-13:00
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

Cognition
● Brain and Action Laboratory, Lior Shmuelof
● Lab tours will start from Student Center (near bank Hapohalim) at 11:00

Lunch 13:00 – 14:00
Purim festivities 14:00 – 15:30

Session 1 - The theory of motor control
Chair: Miriam Reiner, Technion, Israel
● 15:20 – 15:30 Opening Remarks Lior Shmuelof, BGU, Head of the organizing committee
● 15:30 – 16:00 Max Berniker, University Illinois Chicago, USA
"Seeing" the motor system through "blind" reaches"
● 16:00 – 16:30 Anatol Feldman, Montreal University, Canada
"Minimization principles and motor equivalency in the control of movements"

● 16:30 – 17:00 Tamar Flash, Weizmann Institute of Science, Israel
"Compositionality and timing of upper limb and locomotion movements"
● 17:00 – 17:10 Discussion

Evening Special Talk
● 17:10 – 18:00 reception at 58 building, room -101
● 18:00 – 19:00 – Eitan Globerson, The Jerusalem Academy of Music and Dance, Israel
"The neuro-pianist"

Festive dinner 19:30

Wednesday, March 15

● 08:20-08:50 Registration, Poster placement and coffee
● 08:50-09:00 Greetings by Andrey Broisman, Director of Applied Science and Engineering, Israel’s Ministry of Science, Technology and Space

Session 2 – Flow of Motor Information
Chair: Opher Donchin, Ben-Gurion University of the Negev, Israel
● 09:00-09:30 Ilana Nisky, Ben–Gurion University of the Negev, Israel
"Living in the past – how our brain copes with delayed information?"
● 09:30-10:00 Jason Friedman, Tel-Aviv University, Israel
"Using arm movements to inform our understanding of decision making, and vice-versa"
• 10:00-10:30 Nicholas Hatsopoulos, University of Chicago, USA
  “Spatio-temporal patterning in motor cortex required for movement initiation”
• 10:30-10:40 Discussion
• 10:40-11:20 Coffee break

Session 3 – Motor control and aging
Chair: Shelly Levy-Tzedek, Ben-Gurion University of the Negev, Israel
• 11:20-11:50 Naftali Raz, Wayne State University, USA and Max Planck Institute for Human Development, Germany
  “Longitudinal studies of cognitive consequences and correlates of the brain aging: Only Time will tell”
• 11:50-12:20 Daniela Aisenberg, Rupin Academic Center, Israel
  “The aging brain: decline and potential improvements of cognitive performance”
• 12:20-12:50 Joseph Galea, University of Birmingham, UK
  “Motivating motor learning in stroke patients and healthy older adults”
• 12:50-13:00 Discussion
• 13:00-13:30 Lunch
• 13:30-14:30 Posters

Session 4 – Keynote session
Chair: Eilon Vaadia, Hebrew University of Jerusalem
• Greetings Lior Shmuelof, BGU, Head of the organizing committee
• Greetings Prof. Rivka Carmi, President of Ben-Gurion University of the Negev
• 14:40-15:10 Jennifer Raymond, Stanford University, USA
  “Neural learning rules in the cerebellum”
• 15:10-15:40 Prof. Amir Karniel Memorial Young Researcher Lecture
• Samuel McDougle, Princeton University, USA
  “Analog computations drive strategic re-aiming of an intended movement”
• 15:40-16:10 Jeff Wickens, Okinawa Institute of Science and Technology, Japan
  “Contributions of dopamine and acetylcholine to the enigmatic motor functions of the basal ganglia”
• 16:10-16:20 Discussion
• 16:20-16:40 Coffee break and posters

Session 5 – The impaired motor system
Chair: Meir Plotnik, Sheba Medical Center, Israel
• 16:40-17:10 Tamar Makin, UCL, UK
  “Natural and artificial limb representation in amputees”
• 17:10-17:40 Vincent Cheung, The Chinese University of Hong Kong, China
  “Stroke rehabilitation through motor modules”
• 17:40-17:50 Discussion
• 17:50-18:00 Best poster awards sponsored by NBT
• 19:00 Dinner at “Avaz Hazahav” restaurant

Thursday, March 16
Hike in the Negev