



The 13th Karniel Computational Motor Control Workshop

March 14-16, 2017

W. A. Minkoff Senate Hall,
BGU Marcus Family Campus,
Beer-Sheva, Israel



אוניברסיטת בן-גוריון בנגב
Ben-Gurion University of the Negev



— KCMCW —
Karniel Computational
Motor Control Workshop



מרכז זלוטובסקי למדעי העצב
Zlotowski Center for Neuroscience



Ministry of Science,
Technology and Space
Israel



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Workshop Program

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

Session1- 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

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