



Sheba Academic Medical Center Hospital



Perception
AND Action
IN Complex
ENVIRONMENTS



Fourth PACE Thematic Workshop

"Rehabilitation"

10-13 March 2018 - Israel
Sheba Medical Center, Ramat-Gan, Israel

The 4th Thematic Workshop will present clinical aspects of science and technology around rehabilitation. Rehabilitation usually involves four parties: patients, caregivers, health professionals, and healthcare managers. Theories of motor learning and neuroplasticity have led to evidence-based rehabilitation practices, however, the rapid advancement of technologies such as e-health and tele-rehabilitation suggest new frontiers for research and innovation. To incorporate novel technologies, rehabilitation practice integrates multidisciplinary roles (e.g. from the areas of biomedical engineering and computer science). In this context, a comprehensive background is imperative for a successful application and long-term implementation of novel technologies in clinical practice. This Thematic Workshop will introduce participants to current research trends for investigating innovative techniques that lead to optimal health and the study of sensorimotor integration in healthy adults and patients living with chronic neurological conditions.

The workshop will approach the concept of behavioral intervention technologies that comprise components such as monitoring and practice devices. Novel clinical applications and therapeutic approaches require a user-centered design process to deliver self-efficacy for rehabilitation goals. Potential advantages of these technologies are cost benefit and outreach to vulnerable populations with difficult access to proper therapeutic treatments. Besides aiming to improve or recover functional aspects of human interaction with the environment (e.g. walking, fitness, upper extremity skills), the objective of implementing such technologies is to improve quality of life and independence in activities of daily living.

Among the workshop activities, Early Stage Researchers from the PACE International Training Network will engage in a series of debates responding to contemporary scientific questions related to the implementation of novel technologies in rehabilitation. Finally, the workshop will include a visit and set of demonstrations in the Center of Advanced Technologies in Rehabilitation at Sheba Medical Center.



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Saturday 10 March 2018 –Arrival of participants

DAY 1 - Saturday 10 March at Dizengoff Street 64, Tel Aviv	
18:00	Social reception –Table Talk restaurant
21:00	Lecture by <i>Dr. Daphna Yoel (Tel Aviv University)</i> Rethinking sex beyond the genitalia: The human brain mosaic

DAY 2 – Sunday 11 March	
8:30	Reception & welcome talk
9:00	Speaker: <i>Dr. Thomas Janssen* (VU University, Amsterdam)</i> Title: Activating Paralyzed Muscle: Necessary for Optimal Health?
10:00	Speaker: <i>Dr. Joyce Fung* (McGill University, Montréal)</i> Title: Advanced Technologies in Stroke Rehabilitation to Enhance Sensorimotor Integration
11:00	Coffee break
11:15	Speaker: <i>Dr. Benedetta Hiemler* (The Hebrew University, Jerusalem)</i> Title: Task Selectivity as a Comprehensive Principle for Brain Organization: Implications for Sensory Rehabilitation
12:15	Speaker: <i>Dr. Claudine Lamoth* (University of Groningen)</i> Title: Gamification for Home-Based Rehabilitation
13:15	Lunch break
14:30	Speaker: <i>Dr. Sandro Mussa-Ivaldi* (Northwestern University, Chicago)</i> Title: Guiding Learning Toward Recovery and Assistance

15:30	<p>Speaker: <i>Prof. Michal Beeri (Sheba Medical Center)</i></p> <p>Title: Risk and Protective Factors for Alzheimer's Disease Towards Prevention</p>
16:30	Coffee break
17:00	<p>Speaker: <i>Dr. Jason Friedman* (Tel Aviv University)</i></p> <p>Title: The Interplay of Planning and Feedback in Producing Movements Throughout the Lifetime</p>
18:00	Special Dinner – Jaffa

DAY 3 – Monday 12 March	
9:00	<p>Tour in the Center for Advanced Technologies in Rehabilitation</p> <ul style="list-style-type: none"> • “Steps” – Institute for orthopedic rehabilitation in motion • Center for Advanced Technologies in Rehabilitation – Bio-signals & Military medicine • Center for Advanced Technologies in Rehabilitation – Rehabilitation using VR • Center for Advanced Technologies in Rehabilitation – Ecologic rehabilitation
12:00	Lunch break
13:15	<p>Speaker: <i>Prof. Rivka Inzelberg (Tel-Aviv University)</i></p> <p>Title: Artistic Creativity and Neurodegeneration</p>
14:15	<p>Speaker: <i>Dr. Itshak Melzer (Ben Gurion University, Beer Sheva)</i></p> <p>Title: High Technology for Detection of Fall Avoidance Strategies and Treatment to Prevent Falls Among Older Adults</p>
15:15	Coffee break
15:45	<p>Students Debate</p> <p><u>Question 1:</u> Is restoring a body function a better solution than compensating for it? Yes: Adam Booth</p>

	<p>No: Jacob Nelson</p> <p><u>Question 2:</u> Is it a good idea that healthy people's brain activity will be continuously monitored by miniaturized EEG electrodes to track changes in their functions (e.g., motor)?</p> <p>Yes: Valentina Vencato No: Alix De Dieuleveult</p> <p><u>Question 3:</u> For people at risk, should we strive for continuous use of physical activity promoting and monitoring tools?</p> <p>Yes: Jana Maresch No: Desiderio Cano Porras</p> <p><u>Question 4:</u> Does the use of robots – and other innovative technology – in healthcare cultivates a mentality of “fixing what’s wrong” instead of maximizing quality of life?</p> <p>Yes: Ljubica Mathew No: James Mathew Yes: Muammer Berk Mirza No: Qinqi Xu</p> <p><u>Question 5:</u> Is the added value of technology, for patients in geriatric rehabilitation, larger for non-supervised treatment hours than for supervised treatment hours?</p> <p>Yes: Elisabeth Knelange No: Amirhossein Jahani</p> <p><u>Question 6:</u> What is the key limiting factor for successful implementation of advanced rehabilitation technologies in the clinical practice?</p> <p>A-Costs: Yeshavi Venkata B-Scientific evidence: Alessia Cacace</p>
17:30	Free night in Tel Aviv / Partners meeting

DAY 4 – Tuesday 13 March	
7:00	Guided tour in Jerusalem
13:00	Lunch in a restaurant
15:00	Bus to airport + BGU
17:00	Arrival to BGU