



THE HEBREW UNIVERSITY OF JERUSALEM
THE INSTITUTE FOR ADVANCED STUDIES

Conference on:

INNOVATIONS IN REHABILITATION
INTERVENTIONS

2 - 5 December 2007

All lectures will take place in the Feldman building, room 130,
at the Giv'at Ram Campus

Organizers: **Patrice (Tamar) Weiss** (University of Haifa), **Emily Keshner**
(Temple University), **Carolee Winstein** (University of Southern California)

P R O G R A M

Sunday, December 2

- 08:30-09:00 *Registration*
- 09:10-09:30 **Introduction and Purpose of Symposium: Emily Keshner, Patrice (Tamar) Weiss**
- 09:30-12:00 **HOME-BASED and TELE-REHABILITATION**
- 09:30-10:00 **David Brennan** (National Rehabilitation Hospital, Washington DC) *Human factors considerations in telerehabilitation research and development*
- 10:00-10:30 **Judith Deutsch** (University of Medicine and Dentistry of New Jersey, USA)
The role of the user in developing technology: Experiences with virtual reality and telerehabilitation
- 10:30-11:00 *Coffee break*
- 11:00-11:30 **Sue Mawson** (Sheffield Hallem University, UK) *The SMART stroke study: A user led project to develop a remote home rehabilitation system using innovations in sensor and communication technologies*
- 11:30-12:00 **Summing Up and Open Discussion Moderators: Mindy Levin** (McGill University, Canada) and **Heidi Sugarman** (Ono Academic College, Israel)

- 12:00 -13:30 **Lunch at Institute for Advanced Studies**
- 13:30-14:30 **POSTER SESSION** for doctoral students and young scientists
Moderated by **Naomi Josman** (University of Haifa, Israel)
- 14:30-17:30 **VIRTUAL REHABILITATION**
- 14:30-15:00 **Oshri Even-Zohar** (MOTek Medical Research, The Netherlands)
VISIBLE FORCES - 3D real-time muscle force estimation using the CAREN integrated reality system system
- 15:00-15:30 **Vittorio Sanguineti**
(University of Genova, Italy) *Braccio di Ferro: Minimally assistive, adaptive robot therapy for stroke survivors and MS patients*
- 15:30-16:00 **Coffee break**
- 16:00-16:30 **Sergei Adamovich** (University of Medicine and Dentistry of New Jersey, USA) *Neural mechanisms underlying interactions in a virtual environment: A pilot fMRI study*
- 16:30-17:00 **Emily Keshner** (Temple University, Philadelphia, USA)
Postural Control and Spatial Orientation Determined through Virtual Reality
- 17:00 **Summing Up and Open Discussion**
Moderators: **Albert "Skip" Rizzo** (University of Southern California, USA) and **Rachel Kizony** (University of Haifa, Israel)
- 19:00-21:00 **Discussion of recent developments in tele-rehabilitation and virtual reality** *Buffet dinner at the Beit Belgia library with Prof. Shani's committee (By invitation)*

Monday, December 3

- 08:30-09:00 **Registration**
- 09:00-09:10 **Haim Ring** (Loewenstein Rehabilitation Center and Tel Aviv University) **Greetings and Short Overview**
- 09:10-10:10 **W. Zev Rymer** (Rehabilitation Institute of Chicago and Northwestern University)
Keynote Address: *Moving forward into the next decade – What role should technology play in physical medicine and rehabilitation?*
- 10:10-12:40 **ROBOTS AND REHABILITATION**
- 10:10-10:40 **Maja Matic** (University of Southern California, Los Angeles, USA) *Developing socially assistive robots (videotaped lecture)*
- 10:40-11:10 **Carolee Winstein** (University of Southern California, Los Angeles, USA) *Potential for rehabilitation with socially assistive robots (videotaped lecture)*

- 11:10-11:40 *Coffee break*
- 11:40-12:10 **David Reinkensmeyer** (University of California at Irvine, USA)
Robotic assistance for upper extremity training
- 12:10-12:40 Summing Up and Open Discussion Moderators: Moderators:
Miriam Reiner, Technion Institute of Technology, Israel and **Dario G. Lieberman** (Tel Aviv University, Israel)
- 12:40 -13:10 *Lunch at Institute for Advanced Studies*
- 13:10-15:30 **Exhibits Showcase by presenters and manufacturers**
Moderator: **Uri Feintuch** (Hadassah-Hebrew University, Israel)
- 15:30-17:30 **AMBIENT & COLLABORATIVE TECHNOLOGIES**
- 15:30-16:00 **Giuseppe Riva** (Istituto Auxologico Italiano, Milan, Italy)
Towards Virtual Rehabilitation 2.0: Mashup and open source meets virtual reality
- 16:00-16:30 **Paolo Bonato** (Harvard Medical School, Boston, USA)
Advances in wearable technology for physical rehabilitation
- 16:30-17:00 **Patrice (Tamar) Weiss** (University of Haifa, Israel)
Collaborative interfaces for intervention and social action research
- 17:00-17:30 Summing Up and Open Discussion
Moderator: **Joyce Fung** (McGill University, Canada)
- 17:30-18:30 **Panel Discussion: How do I get the robot to the clinic (and what do I do with it when it is there)?**
Moderator: **Albert (Skip) Rizzo** (University of Southern California, USA) Panel members: **Ronald Brown** (Temple University, USA), **Giuseppe Riva** (Istituto Auxologico Italiano, Milan, Italy), **Noomi Katz** (Hadassah-Hebrew University, Israel), **Alma Merians** (University of Medicine and Dentistry of New Jersey, USA), **Zev Rymer** (Rehabilitation Institute of Chicago and Northwestern University), **Oshri Even Zohar** (Motek, Inc., The Netherlands)

Tuesday, December 4

- 08:30-09:00 *Registration*
- 09:00-12:30 **TECHNOLOGY-BASED RESEARCH AND INTERVENTION IN REHABILITATION**
- 09:00-09:30 **Joyce Fung** (McGill University, Canada)
Advancement in Gait Rehabilitation with Virtual Reality Technology
- 09:30-10:00 **Makoto Yoshizawa** (Tohoku University, Sendai, Japan)
Rehabilitation of hemispatial neglect with virtual reality
- 10:00-10:30 **Edelle Field-Fote** (University of Miami, Florida, USA)
Robotic locomotor training: How does high tech compare to low tech?
- 10:30-11:00 *Coffee break*
- 11:00-11:30 **Mindy Levin** (McGill University, Canada)
Upper limb rehabilitation using virtual reality technology
- 11:30-12:00 **Alma Merians** (University of Medicine and Dentistry of New Jersey, USA) *Virtual reality and stroke rehabilitation*
- 12:00-13:00 Summing Up and Open Discussion
Moderators: **Yocheved Laufer**, (University of Haifa, Haifa, Israel) and **Judy Deutsch**, University of Medicine and Dentistry of New Jersey, USA)
- 13:00 **AFTERNOON TOUR AND BANQUET** (By invitation)

Wednesday, December 5

- 9:00 – 11:00 **Planning Meeting for next conference (all invited)**
- 12:00-16:00 **Albert "Skip" Rizzo, Institute for Creative Technologies, University of Southern California,**
INTENSIVE COURSE FOR CLINICAL SPECIALISTS:
A Grand Overview and SWOT Analysis of the use of Virtual Reality for Applications in Mental Health and Rehabilitation