

IC VR 2019



INTERNATIONAL CONFERENCE ON VIRTUAL REHABILITATION

- Scientific Program -

July 21-24, 2019

Tel Aviv University, Tel Aviv, Israel



Sackler Faculty
of Medicine
Tel Aviv University



Affiliated with the International Society
for Virtual Rehabilitation | www.isvr.org

Sunday, July 21, 2019

Workshops

TIME	LOCATION	PARALLEL WORKSHOPS
9:00 AM – 12:00 PM	Conference Center (Health Professions Building, Tel-Aviv University)	Workshop 1a Virtual environments to evaluate and treat cognitive deficits in everyday function Evelyne Klinger Naomi Josman
	Conference Center (Health Professions Building, Tel-Aviv University)	Workshop 1b The Role of Mental Imagery in Virtual Rehabilitation Eric Franklin Amit Abraham
2:00 PM – 5:00 PM	Conference Center (Health Professions Building, Tel-Aviv University)	Workshop 2a Use of Touchscreen Devices as a Tool for Assessment and Treatment (Given In Hebrew Only) Alexandra Daniel Saad Orit Greenstein Noa Givon Shaham
	Sheba Medical Center	Workshop 2b Use of virtual reality technologies in basic & clinical science research Meir Plotnik Glen Doniger et al

Monday, July 22, 2019

8:00 AM – 9:00 AM	Registration
9:00 AM – 9:30 AM	Opening Remarks (General hosts)
9:30 AM – 10:30 AM	Keynote 1 Tactile mechanics as the foundation of the somatosensory function: New opportunities for applications of human machines interfaces, accessibility, and rehabilitation Prof. Vincent Hayward Professor, Sorbonne Université, Paris
10:30 AM – 11:00 AM	Break
11:00 AM – 12:00 PM	Session on Gaming - Stroke 1. Custom game paced video games played by persons post-stroke have comparable exercise intensity but higher accuracy, greater enjoyment and less effort than off-the-shelf game Judith Deutsch Brittany Hoehlein Marisa Priolo Joshua Pacifico Harish Damodaran Urska Puh 2. Playing self-paced video games requires the same energy expenditure but is more enjoyable and less effortful than standard of care activities Aurora James-Palmer Urska Puh Harish Damodaran Essie Kim Phyllis Bowlby Judith E Deutsch 3. Impact of Game Mode on Engagement and Social Involvement in Multi-User Serious Games with Stroke Patients Fábio Pereira Sergi Bermúdez i Badia Carolina Jorge Mónica da Silva Cameirão 4. Novel Gamified System for Post-Stroke Upper-Limb Rehabilitation using a Social Robot: Focus Groups of Expert Clinicians Ronit Feingold Polak Ariel Bistritsky Yair Gozlan Shelly Levy-Tzedek
12:00 PM – 1:15 PM	Lunch (ISVR Annual General Meeting)

1:15 PM – 2:45 PM

Session on Balance and Gait in Virtual Rehab

5. A Virtual Reality Four-Square Step Test for Quantifying Dynamic Balance Performance in People with Persistent Postural Perceptual Dizziness
[Moshe M.H. Aharoni](#) | [Anat V. Lubetzky](#) | [Zhu Wang](#) | [Maya Goldman](#) | [Tal Krasovsky](#)
6. An innovative visuolocomotor training program for people on waiting list for vestibular rehabilitation
[Elizabeth Dannenbaum](#) | [Joyce Fung](#) | [Catherine Loo](#) | [Romina Perrotti](#) | [Ruth Posthuma](#) | [Aselin Jiunn Weng](#) | [Xia Ting Yang](#)
7. Head Mounted Display Application for Contextual Sensory Integration Training: Design, Implementation, Challenges and Patient Outcomes
[Anat Lubetzky](#) | [Jennifer Kelly](#) | [Zhu Wang](#) | [Makan Taghavidilamani](#) | [Marta Gospodarek](#) | [Gene Fu](#) | [Erin Kuchlewski](#) | [Bryan Hujsak](#)
8. Is the room moving? - Muscle responses following visual perturbations
[Desiderio Cano Porras](#) | [Jesse V. Jacobs](#) | [Rivka Inzelberg](#) | [Ofer Keren](#) | [Gabriel Zeilig](#) | [Meir Plotnik](#)
9. The Effects of a Virtual Environment and Robot-Generated Haptic Forces on the Coordination of the Lower Limb During Gait in Chronic Stroke Using Planar and 3D Phase Diagrams
[Gianluca Sorrento](#) | [Philippe Archambault](#) | [Joyce Fung](#)
10. Developing and Validating Virtual Reality Tool for the Evaluation of Cognitive and Physical Performance During Simulated lengthy field March
[Shani Kimel Naor](#) | [Itay Ketko](#) | [Ran Yanovich](#) | [Amihai Gottlieb](#) | [Yotam Bahat](#) | [Oran Ben-Gal](#) | [Yuval Heled](#) | [Meir Plotnik](#)

2:45 PM – 3:00 PM

Fast Forward, Poster Session 1 - Balance, gait, gaming, low-cost systems, BCI

1. Processing words in the real world: A protocol for investigating the dual-task costs of making lexicality judgements while walking in young and older adults
[Nancy Azevedo](#) | [Gianluca U. Sorrento](#) | [Eva Kehayia](#) | [Gonia Jarema](#) | [Racheli Kizony](#) | [Joyce Fung](#)
2. Using Nintendo Wii Fit U to Enhance Balance Control of Community-dwelling Seniors
[Alexandre Monte Campelo](#) | [Jawad Ali Hashim](#) | [Larry Katz](#)
3. Exergaming for stroke rehabilitation: Lessons learned for future implementation strategies
[Marika Demers](#) | [Ai-Vi Nguyen](#) | [Yau-Lok Austin Ong](#) | [Cindy Xin Luo](#) | [Thiviya Thuraisingam](#) | [Michael Rubino](#) | [Mindy F. Levin](#) | [Franceen Kaizer](#) | [Philippe Archambault](#)
4. Objective but not subjective effect of height in a virtual slack-rope balance task
[Orit Elion](#) | [Sharon Amster](#) | [Ayelet Werthimer](#)

----- Scientific Program | Monday, July 22, 2019 -----

5. Assessment of the condition of balance under the influence of training in a virtual environment: the analysis of own observations

[Iryna Maryenko](#) | [Maryia Mozheiko](#) | [Sergey Likhachev](#) | [Mikhail Yurchenko](#) | [Nikita Susha](#) | [Artem Kachanovsky](#) | [Eugeniy Ivanitsky](#)

6. Virtual Self-Training of a Sensory Substitution Device for Blind Individuals

[Galit Buchs](#) | [Benedetta Heimler](#) | [Menachem Kerem](#) | [Shachar Maidenbaum](#) | [Liraz Braun](#) | [Amir Amedi](#)

7. Standardized experimental estimation of the maximum unnoticeable environmental displacement during eye blinks for redirect walking in virtual reality

[Adrian Borrego Gonzalez](#) | [Roberto Llorens](#) | [Belen Masia](#) | [Diego Gutierrez](#)

8. Design of a haptic-based virtual reality evaluation of discrimination of touch and vibration

[Maya Levanovsky](#) | [Anna Bouzovkin](#) | [Hodaya Stern](#) | [Hodaya Dahan](#) | [Noa Bitan](#) | [Sigal Portnoy](#)

9. Usability of an Immersive Virtual Playground: Enjoyment, Authenticity, Effort and Cybersickness

[Adina Houldin](#) | [Sarina Goldstand](#) | [Eynat Gal](#) | [Patrice L Tamar Weiss](#) | [Yotam Bahat](#) | [Doron Weiss](#) | [Adva Moran](#) | [Noa Yigal](#)

10. OpenVirtualObjects: An open set of standardized and validated 3D household objects for virtual reality-based research, diagnostics, and therapy

[Johanne Tromp](#) | [Mert Akbal](#) | [Leonardo Poll](#) | [Stephan Krohn](#) | [Eva Quinque](#) | [Felix Klotzsche](#) | [Arno Villringer](#) | [Michael Gaebler](#)

11. The Topo-Speech Algorithm: An intuitive Sensory Substitution for Spatial Information

[Benedetta Heimler](#) | [Amir Shur](#) | [Ophir Netzer](#) | [Tomer Bechor](#) | [Amir Amedi](#)

12. Coproducing Virtual Reality Technologies for Rehabilitation

[Dido Green](#) | [Shana Boltin](#) | [Aimee Ward](#) | [Francesca Gowing](#) | [Betty Hutchon](#)

13. Fully portable low-cost motion capture system with real-time feedback for rehabilitation treatment

[Jacob Kritikos](#) | [Anxhelino Mehmeti](#) | [George Nikolaou](#) | [Dimitris Koutsouris](#)

14. On Multidisciplinary Teamwork in the Design of DailyCog for Evaluating Mild Cognitive Impairment (MCI) in Parkinson's Disease

[Ariella Richardson](#) | [Sara Rosenblum](#) | [Sharon Hassin-Baer](#)

3:00 PM – 4:15 PM

Coffee & Dessert, Poster Session 1 - Balance, gait, gaming, low-cost systems, BCI

4:15 PM – 5:30 PM

Demos (Health Professions Building)

5:30 PM

Welcome Reception

Tuesday, July 23, 2019

8:30 AM – 9:30 AM

Mentoring Breakfast (Health Professions Building)

10:00 AM – 11:00 AM

Keynote 2

Virtual Reality a tool to address motor-cognitive interactions

Prof. Anat Mirelman | Director, Laboratory of Early Markers of Neurodegeneration (LEMON) Assoc. Director, Center for the Study of Movement, Cognition and Mobility (CMCM), Neurological Institute, Tel Aviv Medical Center Associate Professor, Sackler School of Medicine and Sagol School of Neuroscience, Tel Aviv University

11:00 AM – 12:00 PM

Session on Cognitive and Psychological Considerations in Virtual Rehab

11. Comparing adaptive cognitive training in virtual reality and paper-and-pencil in a sample of stroke patients

Ana Lúcia Faria | **Teresa Paulino** | **Sergi Bermúdez i Badia**

12. Cognitive-motor interaction during virtual reality trail making

Oran Ben-Gal | **Glen M. Doniger** | **Maya Cohen** | **Yotam Bahat** | **Gabi Zeilig** | **Michal Schnaider Beerli** | **Meir Plotnik**

13. Virtual reality therapy as adjunct to traditional physical therapy for a TBI patient who suffered a gunshot wound to the head: Case report

Lei Ma | **Frank Tornetta Jr** | **William Egan** | **W. Geoffrey Wright**

14. The efficacy of a virtual reality exposure therapy treatment for fear of flying: A retrospective study

Meir Plotnik | **Amihai Gottlieb** | **Yara Hussein** | **Glen M. Doniger** | **Shlomo Noy**

12: 00 PM – 1:00 PM

Lunch

1:00 PM – 2:15 PM

Session on Investigations Preceding Advanced Technology Adoption

15. A comparison of virtual reality and active video game usage, attitudes and learning needs among therapists in Canada and the US

Danielle Levac | **Stephanie Glegg** | **Sujata Pradhan** | **Emily J. Fox** | **Debbie Espy** | **Emily Chicklis** | **Judith E. Deutsch**

16. Dissemination of research in virtual reality-based rehabilitation: Journal publication profiles

Patrice Tamar Weiss | **Daphne Raban** | **Dorit Geifman** | **Emily Keshner**

17. Spatial Memory Rehabilitation in Virtual Reality: Generalizing from Epilepsy Patients to the General Population

Shachar Maidenbaum | **Ansh Patel** | **Elisabeth Stein** | **Joshua Jacobs**

18. How reaching kinematics differ between a low-cost 2D virtual environment and the real world

[Marika Demers](#) | [Mindy F. Levin](#)

19. Standardizing Visual Rehabilitation using Simple Virtual Tests

[Shachar Maidenbaum](#) | [Amir Amedi](#)

2:15 PM – 2:30 PM

Fast Forward, Poster Session 2 - Cognitive, Psychological, Pediatric

15. Brain Rehabilitation Assessment and InterventioN (BRAIN): Delivering Efficacious Training at Home

[Harry Hallock](#) | [Amit Lampit](#) | [Joseph Kuchling](#) | [Carsten Finke](#)

16. Technology on-the-go: understanding the risks of mobile phone use during walking

[Tal Krasovsky](#) | [Yasmin Felberbaum](#) | [Joel Lanir](#) | [Rachel Kizony](#)

17. Immersive Virtual Reality for the Assessment and Training of Spatial Memory: Feasibility in Neurological Patients

[Julia Belger](#) | [Stephan Krohn](#) | [Carsten Finke](#) | [Johanne Tromp](#) | [Felix Klotzsche](#) | [Arno Villringer](#) | [Michael Gaebler](#) | [Paul Chojecki](#) | [Eva Quinque](#) | [Angelika Thöne-Otto](#)

18. Memory Evaluation Through 360 Technologies: Preliminary Study with Spanish Population

[Sara Ventura](#) | [Eleonora Brivio](#) | [Giuseppe Riva](#) | [Rosa Baños](#)

19. A cognitive remediation using virtual reality and an electrophysiological marker of attention for promotion of cognition and everyday functioning among people with psychotic disorder: A case study

[Lena Lipskaya-Velikovskya](#) | [Hana Taubneblatt](#) | [Ethar Welly](#) | [Reut Komemi](#)

20. The feasibility of TECH: Tablet Enhancement of Cognition and Health, a novel cognitive intervention for people with Mild Cognitive Impairment

[Noa Givon Schaham](#) | [Inbal Elbo-Golan](#) | [Zvi Buckman](#) | [Shelley Sternberg](#) | [Debbie Rand](#)

21. Intentional, accurate and natural object placement in VR based cognitive rehabilitation tasks

[Mykyta Kovalenko](#) | [Detlef Runde](#) | [Paul Chojecki](#) | [David Przewozny](#) | [Oliver Schreer](#)

22. Virtual City system for cognitive training in elderly

[Iveta Fajnerová](#) | [Adéla Plechatá](#) | [Václav Sahula](#) | [Jan Hrdlička](#) | [Jiří Wild](#)

23. The Modification and Development of a Simulator for Powered Mobility for Children

[Naomi Gefen](#) | [Philippe Archambault](#) | [Patrice Weiss](#)

24. A systematic computerized training program for using Sensory Substitution Devices in real-life

[Ophir Netzer](#) | [Galit Buchs](#) | [Benedetta Heimler](#) | [Amir Amedi](#)

----- Scientific Program | Tuesday, July 23, 2019 -----

25. Virtual Reality Exposure Therapy in Patients with Obsessive-Compulsive Disorder
[Anna Francová](#) | [Barbora Darmová](#) | [Pavla Stopková](#) | [Jiřina Kosová](#) | [Iveta Fajnerová](#)

26. Reliability of the Empatica E4 wristband to measure electrodermal activity to emotional stimuli

[Adrian Borrego Gonzalez](#) | [Jorge Latorre](#) | [Mariano Alcañiz Raya](#) | [Roberto Llorens](#)

27. Multidimensional assessment of Virtual Reality paradigms in clinical neuropsychology: the "VR-Check" protocol

[Stephan Krohn](#) | [Johanne Tromp](#) | [Eva Quinque](#) | [Julia Belger](#) | [Felix Klotzsche](#) | [Michael Gaebler](#) | [Angelika Thöne-Otto](#) | [Carsten Finke](#)

28. Integration between virtual-reality and video-based systems to deliver cognitive tele-rehabilitation; three case studies

[Sharon Harel](#) | [Rachel Kizony](#) | [Hadas Kfir](#) | [Yoram Feldman](#) | [Mordechai Shani](#)

2:30 PM – 4:00 PM

Coffee & Dessert, Poster Session 2 - Cognitive, Psychological, Pediatric

4:00 PM – 4:15 PM

Early Career Award Presentation and Talk

4:15 PM – 5:15 PM

Application of VR and Advanced Technology in Pediatric Populations

20. Virtual reality as a Russian doll: exploring the 'active ingredients' of motor learning and transfer in virtual environments

[Danielle Levac](#) | [Morgan Taylor](#) | [Brennan Payne](#) | [Nathan Ward](#)

21. Adaptive VR-based rehabilitation to prevent deterioration in adults with cerebral palsy

[Belen R. Ballester](#) | [Anna Mura](#) | [Martina Maier](#) | [Laura Tobella-Pareja](#) | [Daniel Alfayate-Domingo](#) | [María Francisca Gimeno-Esteve](#) | [Angel Aguilar](#) | [Paul Verschure](#)

22. Personalization of an intelligent virtual gaming system for children with Cerebral Palsy

[Sarit Tresser](#) | [Tamar Weiss](#) | [Tsvi Kuflik](#) | [Irina Levin](#)

23. Programming Robotic Behavior by High-Functioning Autistic Children

[Orly Lahav](#) | [Vadim Talis](#) | [Ravit Shekovitz](#)

7:30 PM

Gala Event | Riverside, 2 Sderot Rokach, Daniel Rowing Center, Tel-Aviv

Wednesday, July 24, 2019

9:00 AM – 10:00 AM	Keynote 3 A simple-to-use EEG monitor of patient engagement for enhanced rehabilitation Dr. Goded Shahaf Reuth Research and Development Institute, Reuth Rehabilitation Hospital, Tel Aviv, Israel BrainMARC LTD
10:00 AM – 11:00 AM	Session on Virtual Rehab of the Upper Extremity - Part 1 24. Motor learning by cross education in Hemi-Parkinson: a neuroimaging feasibility study of the effects of virtual mirrored sensory feedback Ori Ossmy Lih Mansano Silvi Frenkel-Toledo Evgeny Kagan Shiri Koren Roe Gilron Daniel Reznik Nachum Soroker Roy Mukamel 25. Exercise intensity is increased during upper limb movement training using a virtual rehabilitation system Melanie C. Banina Roni Molad John Solomon Nachum Soroker Sigal Berman Dario G. Liebermann Silvi Frenkel-Toledo Mindy F. Levin 26. Inter- and Intra-Hemispheric EEG Connectivity in Healthy Subjects and Chronic Stroke Survivors Diego Andrés Blanco Mora Sergi Bermúdez i Badia Yuri Almeida Carolina Jorge Vieira 27. Autonomous use of the Home Virtual Rehabilitation System (HoVRS): a feasibility and pilot study Gerard Fluet Qinyin Qiu Jigna Patel Amanda Crouce Sergei Adamovich Alma Merians
11:00 AM – 11:30 AM	Coffee Break
11:30 AM – 12:30 PM	Yes/No Debate: Will virtual rehab replace clinicians?
12:30 PM – 1:30 PM	Lunch
1:15 PM – 2:00 PM	Industry Panel (Further details TBA)

2:00 PM – 3:00 PM

Session on Virtual Rehab of the Upper Extremity - Part 2

28. Novel Therapeutic Game Controller for Telerehabilitation of Spastic Hands: Two Case Studies

[Grigore Burdea](#) | [Kevin Polistico](#) | [Nam-Hun Kim](#) | [Ashwin Kadaru](#) | [Doru Roll](#) | [Namrata Grampurohit](#) | [Am Barrett](#) | [Jenny Masmela](#) | [Emma Kaplan](#) | [Phalgun Nori](#) | [Simcha Pollack](#)

29. Multi-touch-based assessment of hand mobility and dexterity. Preliminary study of validity, reliability and sensitivity to upper limb impairment severity in individuals with stroke

[Roberto Llorens](#) | [Adrián Borrego González](#) | [Sara Mollà Casanova](#) | [Mariano Alcañiz Raya](#) | [Carolina Colomer](#) | [Enrique Noé](#) | [Jorge Latorre Grau](#)

30. Post-stroke upper limb rehabilitation using virtual reality interventions: Do outcome measures used assess extent or type of motor improvement?

[Sandeep Subramanian](#) | [Mackenzie Cross](#) | [Cole Hirschhauser](#) | [Vineet Johnson](#) | [Timothy Reistetter](#)

31. Upper extremity intervention for stroke combining virtual reality, robotics and electrical stimulation

[Philippe S. Archambault](#) | [Nahid Gheidari Norouzi](#) | [Dahlia Kairy](#) | [Mindy F. Levin](#) | [Marie-Hélène Milot](#) | [Katia Monte-Silva](#) | [Heidi Sveistrup](#) | [Michael Trivino](#)

3:00 PM – 3:15 PM

Fast Forward, Poster Session 3 - Motor Rehabilitation - Cognitive, Psychological, Pediatric

29. Crossing iVRoad: The immersive VR application for detecting unilateral visuospatial neglect in right hemisphere poststroke patients

[Sebastian Wagner](#) | [Julia Belger](#) | [Bernhard Preim](#) | [Patrick Saalfeld](#)

30. Development of a virtual reality toolkit to enhance community walking after stroke

[Anouk Lamontagne](#) | [Andréanne Blanchette](#) | [Joyce Fung](#) | [Bradford James McFadyen](#) | [Samir Sangani](#) | [Nicolas Robitaille](#) | [Anne Deblock-Bellamy](#) | [Marco Antonio Buhler](#) | [Claire Perez](#) | [Anita Menon](#)

31. Effects of real-time visual feedback in the form of a virtual avatar on symmetry and other parameters of gait post stroke

[Le Yu Liu](#) | [Samir Sangani](#) | [Kara Patterson](#) | [Joyce Fung](#) | [Anouk Lamontagne](#)

32. Is the Downs and Black scale a better tool to appraise the quality of the studies using virtual rehabilitation for post-stroke upper limb rehabilitation?

[Sandeep Subramanian](#) | [Sheena Caramba](#) | [Oscar Hernandez](#) | [Quenton Morgan](#) | [Mackenzie Cross](#) | [Cole Hirschhauser](#)

33. The Impact of a Hand Training Programme in Chronic Stroke Survivors: A Qualitative Analysis of Participant Perceived Benefits

[Bronte Vollebregt](#) | [Kirsti Reinikka](#) | [Daniel Vasiliu](#) | [Andrea Pepe](#) | [Shreya S. Prasanna](#) | [Anshul Jain](#) | [Jane Lawrence-Dewar](#) | [Vineet B.K. Johnson](#)

34. A virtual reality-based training system for error-augmented treatment in patients with stroke

[Lily Sror](#) | [Michal Vered](#) | [Iuly Treger](#) | [Shelly Levy-Tzedek](#) | [Mindy F. Levin](#) | [Sigal Berman](#)

35. Remote rehabilitation training using the combination of an exergame and telerehabilitation application: A case report of an elderly chronic stroke survivor

[Dorra Rakia Allegue](#) | [Dahlia Kairy](#) | [Johanne Higgins](#) | [Philippe Archambault](#) | [Francois Michaud](#) | [William Miller](#) | [Shane Norman Sweet](#) | [Michel Tousignant](#)

36. Assessing spatial navigation in seniors and clinical settings: Stepwise progression from real-world to VR

[Sophia Rekers](#) | [Carsten Finke](#)

37. Observation of an expert model induces a coarticulated drawing movement pattern in a single session

[Maria Korman](#) | [Jason Friedman](#)

38. Improving wheelchair driving performance in a virtual reality simulator

[Philippe S. Archambault](#) | [Catherine Bigras](#)

39. Experience with head-mounted virtual reality (HMD-VR) predicts transfer of HMD-VR motor skills

[Julia Juliano](#) | [David Saldana](#) | [Allie Schmiesing](#) | [Sook-Lei Liew](#)

40. Two case studies of virtual reality therapy effect on CRPS patients in Occupational Therapy out patient clinic

[Uty H. Ostrei](#) | [Revital Uzan](#) | [Omer Weissberger](#) | [Ettie Rozenberg-Rothschild](#)

41. Multimodal brain-computer interface based on artificial intelligence

[Konstantin Sonkin](#) | [Yoav Zamir](#) | [Jason Friedman](#)

42. Use of virtual reality in musculoskeletal conditions – Examining the evidence

[Shreya Prasanna](#) | [Christopher Pate](#) | [Christopher Goodart](#) | [Sandeep Subramanian](#)

3:15 PM – 4:15 PM

Coffee & Dessert, Poster Session 3 - Motor Rehabilitation - Cognitive, Psychological, Pediatric

4:15 PM – 4:30 PM

Awards Ceremony and Closing Remarks

ICVR 2019

www.virtual-rehab.org/2019/

ICVRinfo@gmail.com



Congress Secretariat: DUET by HS EVENTS

Einat Bar-Ilan Mobile: +972-54-4304045 | E-mail: einat@hs-events.co.il
Shir Argovi: +972-54-7871671 | E-mail: shir@hs-events.co.il