

ER²SCHOOL



SantoStefano
RIABILITAZIONE

3° European R²S² Robotic Rehabilitation Summer School

13-14-15/20-21-22/27 September 2021

**Now
Virtual!**

An innovative educational approach for rehabilitation professional taking the advantage of a concrete perspective of engagement in Robotics Rehabilitation.

Promoted and organized by ESPRM - Robotic and new Technologies Committee under the auspices of PRM-UEMS Board, Simfer and SIRN. In cooperation with Santo Stefano Rehabilitation Group and International Industry Society for Advanced Rehabilitation technology.



We are supporting an innovative educational approach for rehabilitation specialists sharing and taking advantage of a concrete clinical European experiences in robotic treatments.

Promoted and organized by ESPRM - Robotic and new Technologies Committee under the auspices of PRM-UEMS Section and Board (which are in charge to select from all Europe the young and free PRM participants) and in cooperation with Simfer and SIRN in Italy.

Santo Stefano Rehabilitation and Kos Group are working for the organization and management as in previous edition.

IISART International Industry Society for Advanced Rehabilitation technology supports the international diffusion.

This 2021 edition will focus on the themes of pediatric rehabilitation activities with the use of technologically advanced and robotic equipment and it will allow the interpretation of very innovative experiences in this sector, in order to underline the essential role of the figure of the PRM specialist also in this very important clinical field.

The school will be online, with six sessions set up for educational activities and with a seventh session, set up to present the European Robotic Rehabilitation Community, a community born alongside and for merit of the activities of the school itself, which has the objective of carrying out the didactic activities in clinical comparison and research in this area.

All the activities will be in English and will include, as always, educational aspects of theoretical and practical content made in prerecorded and online video materials (which will then be accessible on the school website), in any case for the participants to interact with the teachers.

The event will be virtual on the GoToWebinar platform.

Day 1: Monday, September 13

PRESENTATION OF THE VIRTUAL 3rd EDITION OF THE ER² SCHOOL

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Nikolaos Barotsis
- 9:⁰⁰ a.m. **Opening: ESPRM/UEMS Section and Board Perspectives, clinical and educational aims**
Speakers: Mauro Zampolini, Nicolas Christodolou, Alessandro Giustini
- 9:³⁰ a.m. **Pediatric rehabilitation**
Epidemiology, analyzing frequent problems and emerging ones.
Disabled person becoming adult
Speaker: Ivana Petronic Markovic
- 10:⁰⁰ a.m. **Changes in expectations and approaches**
From conventional aids to advanced technologies and compensative/ dispensative tools in child growth
Speaker: Elena Ilieva
- 10:³⁰ a.m. **Robot-integrated rehabilitation: assessment of new technologies in terms of setting, investments and outcomes**
Speaker: Daiana Popa
- 11:⁰⁰ a.m. **Q&A**
- 11:²⁰ a.m. **Robotic Rehabilitation - Criticisms in educational needs and training programs for Health professionals**
Speaker: Thierry Lejeune
- 11:⁴⁰ a.m. **Competence Centre for Rehabilitation Engineering and Science RESC - ETH Zürich, Switzerland**
Speaker: Oliver Stoller
- 12:¹⁰ p.m. **Closing remarks**

Day 2: Tuesday, September 14

MOVEMENT ANALYSIS

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Massimo Vallasciani
- 9:⁰⁰ a.m. **The role of the Movement Analysis Laboratory: equipment, crawling and data processing**
Speakers: Massimo Vallasciani, Antonio Ruggiero, Francesca Tombolini, Rita Marconi
- 9:³⁰ a.m. **Gait analysis as an outcome assessment used for the pediatric rehabilitation**
Speakers: Gabriella Di Girolamo, Marco Franceschini
- 10:⁰⁰ a.m. **Movement Analysis: presentations and experiences from different Laboratories**
- Movement Analysis and Robotics: a strategic marriage for innovative therapeutic solutions**
Bambino Gesù Children's Hospital
Speaker: Maurizio Petrarca
- 10:³⁰ a.m. **Gait Analysis in cerebral palsy: the lessons we have been learning in twelve years of lab activity**
La Nostra Famiglia, *Speaker: Davide Conte*
- 11:⁰⁰ a.m. **The network of Movement Analysis Labs of the Don Carlo Gnocchi Foundation: experiences and applications in pediatric populations**
Fondazione Don Gnocchi
Speakers: Irene Aprile, Anna Castagna, Guido Pasquini, Joel Pollet, Maurizio Ferrarin
- 11:³⁰ a.m. **Gait analysis in children with neurological diseases: influence on treatment decision making and clinical research**
Fondazione Centri di Riabilitazione Padre Pio Onlus, Gli Angeli di Padre Pio
Speaker: Filoni Serena
- 12:⁰⁰ p.m. **Q&A**

Day 3: Wednesday, September 15

MOTOR REHABILITATION

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Antonio De Tanti
- 9:⁰⁰ a.m. **Using the REAplan robot for cognitive and motor neurorehabilitation**
Speaker: Martin Edwards
- 9:³⁰ a.m. **Robotic Rehabilitation of upper limb: Experiences with Armeo Spring, Gloreha, Motore**
Speakers: Enrico Castelli, Elena Beretta
- 10:³⁰ a.m. **Robotic rehabilitation: experience at Bambino Gesù Children's Hospital (Rome, Italy) with Lokomat, Re-Walk, In-Motion Arm and Wrist, HIROB**
Speakers: Flaminia Frascarelli, Giampietro Cordone
- 11:⁴⁵ a.m. **Q&A**



Day 4: Monday, September 20

VIRTUAL AND AUGMENTED REALITY FOR MOTOR REHABILITATION

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Marco Franceschini
- 9:⁰⁰ a.m. **Virtual reality: basics, evidences and perspectives. Applications in National Rehabilitation Services**
Speaker: Antonio De Tanti
- 9:⁵⁰ a.m. **Children motor rehabilitation through virtual reality tools: clinical experiences (Nirvana, Khymeia, Niurion)**
Speaker: Donatella Saviola
- 10:³⁰ a.m. **Robotic rehabilitation with support of virtual reality: experiences**
Speaker: Sanaz Pournajaf
- 11:¹⁰ a.m. **A wide-ranging experience: the GRAIL in Italy, for walking and balance ability improvements in engaging virtual reality environments**
Speakers: Cristina Maghini, Daniele Panzeri
- 12:⁰⁰ p.m. **Q&A**



Day 5: Tuesday, September 21

COMMUNICATION DISORDERS AND TECHNOLOGIES FOR ENSURING CONTINUITY OF CARE AND PATIENT EMPOWERMENT

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Enrico Castelli
- 9:⁰⁰ a.m. **Neurodevelopment disorders**
Epidemiology, the global patient take-charge (engagement and territory), ICF (activity and participation). Which rehabilitation program?
Speaker: Ornella Orsini
- 9:³⁰ a.m. **Augmentative and alternative communication for children with autism spectrum disorder. From scientific research to clinical practice**
Speakers: Chiara Glucini, Federica Salerno
- 10:⁰⁰ a.m. **General introduction to complex communication needs in children, regardless of the specific pathology. Principles of augmentative alternative communication. Low-tech clinical case**
Speaker: Clementina Antenore
- 10:³⁰ a.m. **Multidisciplinary evaluation and user needs assessment. Assistive technology solution implementation. Clinical case with high technology aid**
Speaker: Francesca Schettini
- 11:⁰⁰ a.m. **Technological and visual aids to support sight**
Speaker: Matteo Cantoni
- 11:³⁰ a.m. **Practice and training: LiMiX**
Speakers: Elisa Contini, Francesco Pezzuoli
- 12:⁰⁰ p.m. **Q&A**

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Mauro Zampolini
- 9:⁰⁰ a.m. **Advantages and disadvantages of the telerehabilitation; scientific evidences**
Speakers: Michela Goffredo, Marco Franceschini
- 9:³⁰ a.m. **Teleconsultation, Telecare, Telerehabilitation within a community network. New methodology and new training contents and outcomes**
Speaker: Giuseppina Sgandurra
- 10:⁰⁰ a.m. **Clinical assessment in order to set up a project of telerehabilitation Devices, software and sensors; users' point of view about usability in order to project an independent life**
Speaker: Massimo Vallasciani
- 10:³⁰ a.m. **Practice and training - Experiences in Europe**
Speaker: Paolo Tonin
- 11:⁰⁰ a.m. **Domestic life: Home automation (SMART HOUSE)**
Speakers: Emilia Calderisi, Ester Stefoni, Stefania Pepegna, Francesca Tombolini
- 11:³⁰ a.m. **Q&A**

- 8:³⁰ a.m. **Registration/Connection**
Chairman: Alessandro Giustini
- 9:⁰⁰ a.m. **ER² Community: Presentation of project**
Alessandro Giustini, Francesca Tombolini, Antonio Ruggiero
- 9:³⁰ a.m. **Experiences by the ER2 Community Groups**
- 11:⁰⁰ a.m. **Research perspectives. General discussion**
Take home message
- 12:³⁰ p.m. **Closing remarks**

Each speech includes a final moment for questions and discussion.
Practice sessions will be online, with interactive video-demonstrations.

SCIENTIFIC COMMITTEE

Alessandro Giustini, Nikolaos Barotsis, Daiana Popa, Elena Ilieva, Thjerry Lejeune, Ivana Petronic Markovic, Mauro Zampolini, Enrico Castelli, Antonio De Tanti, Marco Franceschini, Massimo Vallasciani.

Clementina Antenore, *Psychotherapist and expert in neuropsychology at the Childhood Rehabilitation Service of the Santa Lucia Foundation*

Irene Aprile, MD, PhD, *Head of rehabilitation department "S. Maria della Provvidenza", IRCCS Don Gnocchi Foundation*

Nikolaos Barotsis, *President of UEMS BOARD*

Elena Beretta, *PRM specialist, IRCCS Eugenio Medea*

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Giampietro Cordone, *PRM specialist, Bambino Gesù Children's Hospital*

Nicolas Christodolou, *ESPRM President*

Antonio De Tanti, *PRM specialist, Santo Stefano Rehabilitation Group*

Gabriella Di Girolamo, *PRM specialist, IRCCS San Raffaele*

Martin Gareth Edwards, *Coordinator, Psy-NAPS group - Psychological Sciences Research Institute and affiliated to the Institute of Neuroscience and Louvain Bionics*

Maurizio Ferrarin, *Manager, Technological Pole of the Don Gnocchi Foundation*

Serena Filoni, *Medical Director, Padre Pio Onlus Rehabilitation Centers Foundation, Gli Angeli di Padre Pio*

Marco Franceschini, *Full Professor in Physical Medicine and Rehabilitation, San Raffaele University - Rome*

Flaminia Frascarelli, *PRM specialist - Bambino Gesù Children's Hospital*

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Francesco Pezzuoli, *CEO and Founding Partner - LiMiX Srl*

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Dr. Massimo Vallasciani
L.A.M.PO. (Movement Analysis Laboratory)

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Bioengineer - Training Tutor

Francesca Tombolini
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