

1° European R²S² Robotic Rehabilitation Summer School 5-10 June 2017 Porto Potenza Picena (MC) - Italy

Learn as a rehabilitation professional in a rewarding educational programme with an innovative approach taking the advantage of a concrete perspective of employment in Robotics Rehabilitation

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



Apply Now!

The wide spectrum of employment in Rehabilitation of Robotics and New Technologies is a concrete reality: unfortunately proper programs with sufficient know-how are sparse and skills needed to appropriately apply these devices are usually achieved “on the field” by rehabilitation professionals without any prior specific education.

The actual gap is mostly educational and there is a great need to enhance training and knowledge for Physicians.

Robotic Committee of the European Society of PRM (ESPRM) promotes an innovative approach based on a summer school (Robotic Rehabilitation Summer School-R²S²) with the main goals to enhance scientific information and foster education in these advanced applications: the educational programme would be developed in the frame of the theoretical knowledge and evidence-based approach in connection with growing clinical experiences realized by PRM specialists all over the Europe: a broad functional and practical approach in relation to different clinical matters in Rehabilitation.

The school will be under the organisation of RT Committee under the ausices of ESPRM, UEMS PRM Section & Board and IISART. The international faculty for theoretical and practical activities will be present during the School and by the on-line educational activity by the creation of a specific European Robotic School WebSite. The project aims to realize similar future editions in different advanced rehabilitation centres spread all over Europe in cooperation with national societies.

Alessandro Giustini, *Chair of ESPRM Robotic Committee*

Day 1: Monday, June 5

Auditorium Porto Potenza Picena - Santo Stefano Rehabilitation

- 8.³⁰ a.m. Arrival from Natural Village, welcome coffee. Registration of participants.
- 9.⁰⁰ a.m. OPENING SESSION
Welcome by ESPRM, UEMS & Board, SIMFER, SIRN, IISART
Presentation of 2018 ESPRM Congress in Vilnius - Alvydas Jocevicius
School aims: Research and education about technologies for rehabilitation of disabled people.
- 9.³⁰ a.m. *Alvydas Juocevicius - Elena Ilieva*
State of art on the diffusion and (medical and professional) education in the use of new technologies across Europe.
- 10.²⁰ a.m. *IISART Serena Maggioni, Clemens Mueller*
Benefits, challenges and trends of advanced technologies in rehabilitation.
- 11.⁰⁰ a.m. Coffee break
- 11.³⁰ a.m. *Carlotte Kiekens*
Bionic man: ethical challenges.
- 12.⁰⁰ a.m. *Mauro Zampolini*
New rehabilitation technologies in the European Health Systems.
- 12.³⁰ a.m. SESSION 1: The rationale for motor recovery through assistive technology devices: clinical and instrumental movement analysis
Marianna Capecci, Lucia Pepa - UNIVPM/Massimo Vallasciani
State of the art on the role of assistive devices and technology in the evaluation of gait and posture and its integration with rehabilitation activities.
- 1.³⁰ p.m. Lunch
- 2.³⁰ p.m. *Massimo Vallasciani, Marianna Capecci, Elisa Andrenelli*
Laboratory activities: presentation of gait and posture analysis protocols.
- 5.³⁰ p.m. Discussion
- 6.³⁰ p.m. Conclusion and return to Natural Village.

Day 2: Tuesday, June 6

Auditorium Porto Potenza Picena - Santo Stefano Rehabilitation

SESSION 2: POSTURE AND GAIT REHABILITATION

8.³⁰ a.m. Arrival from Natural Village and opening session.

9.⁰⁰ a.m. *Franco Molteni*

The state of art: principles and aims of assistive technology use in posture and gait recovery.

10.⁰⁰ a.m. *Giorgio Maggioni*

Perspectives and critical issues of scientific research in robotic gait rehabilitation.

10.³⁰ a.m. Discussion

10.⁵⁰ a.m. Coffee break

11.¹⁰ a.m. *Antonello Morgantini, Maria Elena Collina, Giorgio Maggioni, Massimo Vallasciani*

Innovative technology devices for standing and gait recovery and clinical applications.

The participants, divided into small groups, will realize a guided tour across treatment stations, where different technology devices (Andago, ReWalk, Ekso, Geo-System, Anymove, Erigo, Hunova) are used in rehabilitation practice.

1.³⁰ p.m. Lunch

2.³⁰ p.m. *Morgantini, Collina, Maggioni, DeTanti, Vallasciani & Coll.*
Laboratory activities.

6.⁰⁰ p.m. Discussion

6.³⁰ p.m. Conclusion and return to Natural Village.

SESSION 3: UPPER LIMB REHABILITATION

- 8.³⁰ a.m. Arrival from Natural Village and opening session.
- 9.⁰⁰ a.m. *Stefano Mazzoleni*
Robotics and technologies for upper limb rehabilitation.
- 9.⁴⁰ a.m. *Federico Posteraro*
Recovering hand dexterity.
- 10.²⁰ a.m. Discussion
- 11.⁰⁰ a.m. Coffee break
- 11.³⁰ a.m. *Daniela Tulli*
Robot-assisted rehabilitation for upper limb recovery.

The participants, divided into small groups, will realize a guided tour across treatment stations, where different technology devices (GloreaH, Amadeo, Pablo, Diego) are used in rehabilitation practice.

- 1.³⁰ p.m. Lunch
- 2.³⁰ p.m. *Daniela Tulli, Federico Posteraro, Stefano Mazzoleni & Coll.*
Laboratory activities.
- 6.⁰⁰ p.m. Discussion
- 6.³⁰ p.m. Conclusion and return to Natural Village.

Day 4: Thursday, June 8

University Politecnica delle Marche, Medical Faculty
NeuroRehabilitation Department - Ancona

SESSION 4: MECHANISMS OF FUNCTIONAL RECOVERY AND PRINCIPLES OF ROBOT-ASSISTED REHABILITATION EFFICACY

- 9.⁰⁰ a.m. Arrival from Natural Village and opening session.
- 9.³⁰ a.m. *Maria Gabriella Ceravolo, Marianna Capecci*
Mechanisms of functional recovery in specific clinical conditions (brain injuries, spinal cord injuries, neurodegenerative diseases).
- 11.⁰⁰ a.m. Discussion
- 11.³⁰ a.m. Coffee break
- 11.³⁰ a.m. *Elisa Andrenelli*
The most frequently used assessment protocols to study neuroplasticity and post-injury recovery.
- 1.³⁰ p.m. Lunch
- 2.³⁰ p.m. *Elisa Andrenelli, Marianna Capecci, Chiara Orni, Francesco Maracci*
Guided tour to the Laboratory of Neurophysiology, where neuroplasticity study protocols will be exemplified in patients with neurological disorders.
- 5.³⁰ p.m. Discussion
- 6.⁰⁰ p.m. Conclusion and return to Natural Village.

Day 5: Friday, June 9

Auditorium Porto Potenza Picena - Santo Stefano Rehabilitation

SESSION 5: DEVICES, TECHNOLOGIES AND COGNITIVE RECOVERY

8.³⁰ a.m. Arrival from Natural Village and opening session.

9.⁰⁰ a.m. *Antonio De Tanti*
Robotics and technologies for upper limb rehabilitation.

9.⁴⁰ a.m. *Mauro Zampolini, Riccardo Magni*
State of art of assistive technology devices for cognitive rehabilitation.

10.²⁰ a.m. *Antonio De Tanti*
Potential value of cognitive training protocols exploiting virtual reality.

11.⁰⁰ a.m. Discussion

11.³⁰ a.m. Coffee break

12.⁰⁰ a.m. *Antonio De Tanti, Mauro Zampolini, Antonello Morgantini & Coll.*
Rehabilitation protocols exploiting virtual reality and other devices for tele-rehabilitation in patients with cognitive and motor disorders.

The participants, divided into small groups, will realize a guided tour across treatment stations, where different technology devices (VRRS, Nirvana, NU!Reha Desk-Tablets, Riablo) are used in rehabilitation practice.

1.³⁰ p.m. Lunch

2.³⁰ p.m. *Antonio De Tanti, Mauro Zampolini, Riccardo Magni, Antonello Morgantini & Coll.*
Laboratory activities.

6.³⁰ p.m. Discussion

7.⁰⁰ p.m. Conclusion and return to Natural Village.

CLOSING SESSION

9.⁰⁰ a.m. Appraisal of Robotic School activities and perspectives:

- School education events in other ESPRM Countries
- Perspectives of cooperation with IISART
- Role for PRM Doctors in the expert community in this field.

General Discussion

Collection of opinions and suggestions

11.⁰⁰ a.m. Assessment of learning outcome (achievement of theoretical knowledge and practical skills, through multiple-choice questions, discussion of clinical cases, preparation of protocols)

12.⁰⁰ a.m. *Alessandro Giustini, Giorgio Maggioni, Clemens Mueller*
Closing remarks.

TEACHERS

Andrenelli Elisa, *PRM Physicians, PhD Dept. of Experimental and Clinical Medicine - "Politecnica delle Marche" University, Ancona*

Capecci Marianna, *Assistant Professor of Physical and Rehabilitation Medicine - Dept. of Experimental and Clinical Medicine- "Politecnica delle Marche" University, Ancona*

Ceravolo Maria Gabriella, *Professor of Physical and Rehabilitation Medicine - Dept. of Experimental and Clinical Medicine- "Politecnica delle Marche" University, Ancona*

Collina Maria Elena, *PRM specialist, Santo Stefano Rehabilitation Group*

DeTanti Antonio, *PRM specialist, Santo Stefano Rehabilitation Group, Scientific Committee Coordinator*

Giattini Alberto, *PRM specialist, Santo Stefano Rehabilitation Group*

Giustini Alessandro, *School Scientific Director - Chair of ESPRM Committee "Robotic in Rehabilitation". Scientific Director of San Pancrazio Rehabilitation Hospital, Arco (Trento) - Santo Stefano Rehabilitation Group*

Ilieva Elena, *MD, PhD Head of Department of Physical and Rehabilitation Medicine Medical University of Plovdiv Vice Dean of Medical Faculty Plovdiv, Bulgaria*

Jocevicius Alvydas, *MD, PhD Rehabilitation, Physical and Sport Medicine Center, Medical Faculty Vilnius University, Vilnius University Hospital Santariskiu Kliniko. Lithuania*

Kiekens Carlote, *MD Department of Physical and Rehabilitation Medicine University Hospitals Leuven, Belgium*

Maggioni Serena, *Clinical Applications Manager, Hocoma*

Maggioni Giorgio, *MD, Neurorehabilitation Medicine, ICS Maugeri Pavia - ESPRM Robotic Committee Secretary*

Magni Riccardo, *R&D Director, Pragma Engineering s.r.l.*

Maracci Francesco, *PRM trainee Dept. of Experimental and Clinical Medicine - "Politecnica delle Marche" University, Ancona*

Mazzoleni Stefano, *PhD Assistant Professor, The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa*

Molteni Franco, *Director of Rehabilitation Department, Valduce Hospital Villa Beretta, Costa Masnaga (LC)*

Morgantini Antonello, *PRM specialist, Santo Stefano Rehabilitation Group Clinical Chief*

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Tulli Daniela, *PRM specialist, Santo Stefano Rehabilitation Group*

Vallasciani Massimo, *PRM specialist, Santo Stefano Rehabilitation Group*

Zampolini Mauro, *Director of Rehabilitation Department AUSL 2 Umbria - Foligno (PG)*

TUTORS - Santo Stefano Rehabilitation Group

Baldini Stefania, *Physiotherapist*

Bedeschi Stefano, *Speech Therapist*

Bovari Paola, *Occupational Therapist*

Ciarrocca Francesca, *Physiotherapist*

Ciarrocchi Claudia, *Physiotherapist*

Cipriani Michela, *Physiotherapist*

Gaetani Lorena, *Physiotherapist*

Fioschini Paola, *Physiotherapist*

Grillo Camilla, *Occupational therapist*

Lattanzi Linda, *Speech therapist*

Malchiodi Carolina, *Physiotherapist*

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Naticchi Sara, *Speech Therapist*

Pompozzi Michela, *Speech Therapist*

Ravizza Lara, *Occupational Therapist*

Ruffini Roberta, *Occupational Therapist*

Ruggiero Antonio, *Biomedical Engineer*

Spagnuolo Chiara, *Physiotherapist*

Sparapani Alessandro, *Physiotherapist*

Tombolini Francesca, *Biomedical Engineer*

How to apply

The event is open to a **maximum of 30 participants** and is open to physicians specialists and specializing in physical medicine and rehabilitation.

Participation is subject to enrollment and the payment of dues € 700.00 + VAT (€ 854,00 VAT included).

The application form can be submitted online through the Santo Stefano Rehabilitation Group site: summerschool.sstefano.it no later than **10 May 2017**.

Registration will be confirmed by an email.

As the limited number event, participation requests will be considered in the order of arrival.

General notes

For practical activities, participants will be divided into groups of around six people to be able to act closely and personally: the main goal will be to see, to test, to evaluate and compare many devices, and in the same time to compare and discuss clinical protocols and results together many PRM colleagues (and professional members of their Teams as PhT, OT, SpeechT, Engineers) with concrete experience around these devices.

Annexed the list of Devices presented and utilized during the School.

There is a very useful technical cooperation with many Companies but absolutely no sponsorship.

All the School will be video recorded and will available on the ESPRM Robotic School Web Site, together educational texts and papers.

Logistic

Locations: Marche Region in Italy, Porto Potenza Picena and Ancona University.

Well connected by Speed Train, Ancona Airport, MotorWay.

Attendants and speakers, arriving on Sunday June 4 evening, will be hosted all together at Natural Village (breakfast and dinner included) located in front of the sea, 5 minutes far from the School venue, until Saturday June 10.

A social dinner will take place on Friday evening.

The transport from and to the Village will be granted by the organizing committee.

In Natural Village Companies might also provide information and materials about devices.

Event Secretariat

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