

Monday - June 27, 2011: PRELIMINARY PROGRAM

Workshops INRS 2011				
09:00 – 09:30	Coffee and registration			
09:30 – 10:30	Robotics in the rehabilitation of upper limb function in SCI Armin Curt, MD Spincal Cord Injury Center, Balgrist University Hospital, University of Zurich, Switzerland	Very early mobilization Prof. Andreas Luft University Zurich, Switzerland	Implementation of robotics in clinical settings Leslie VanHiel, PT Shepherd Center Dr. Kerstin Baldauf Helios Klinik Zihlschlacht Dr. Chan Kay Fei Tan Tock Seng	Non invasive spinal assessment Cesare Mannhart, MSc ETH HMS iddiag, Switzerland
10:30 – 11:00	Coffee break/poster session/exhibition			
11:00 – 12:00		Erigo® basic Dr. Arash Dodge Hocoma, Switzerland	Lokomat® basic Julia Bühlmeier, PhD Hocoma, Switzerland	Virtual reality-based rehabilitation with YouGrabber and YouKicker PD Dr. Daniel Kiper YouRehab, Switzerland
12:00 – 13:00	Lunch/poster session/exhibition			
13:00 – 14:00	Robot-supported locomotor training in pediatric neurorehabilitation: application, assessment and achievements Huub van Hedel, PhD PT Rehab Research Group, Rehabilitation Center, University Children's Hospital Zurich, Switzerland	Armeo® Power basic Dr. Alexander Duschau-Wicke Hocoma, Switzerland	Lokomat® advanced Julia Bühlmeier, PhD Hocoma, Switzerland	Pablo® Plus – upper limb rehabilitation Maik Hartwig, MSc OT Tyromotion, Austria
14:00 – 14:15	Coffee break/poster session/exhibition			
14:15 – 15:15		Armeo® Spring basic Peter Schenk, PhD Hocoma, Switzerland	Valedo® basic Clinical Expert (tbd)	Amadeo® – advanced fingerrehabilitation Goncalo Goncalves, PT Tyromotion, Austria
15:15	End of workshops			
15:45	Start social event INRS 2011 hosted by Hocoma			

For workshop details see pages 4 – 9

Tuesday - June 28, 2011: PRELIMINARY PROGRAM

International Neurorehabilitation Symposium 2011		
08:30 – 09:00	Coffee and registration	
09:00 – 09:10	Welcome Address	ICVR/INRS
09:10 – 09:45	Principles of CNS reorganisation (basic science)	Reggie Edgerton
09:45 – 10:20	Principles of CNS reorganisation (basic science)	Skip Rizzo
10:20 – 10:50	Coffee break/poster session/exhibition	
10:50 – 11:15	Classical approaches	<i>To be confirmed</i>
11:15 – 11:40	Classical approaches	Susan Woll
11:40 – 12:05	Classical approaches	Jill Whitall
12:05 – 12:30	Classical approaches	Susan Harkema
12:30 – 14:00	Lunch/poster session/exhibition	
14:00 – 14:25	Clinical potential of new technologies	Volker Dietz
14:25 – 14:50	Clinical potential of new technologies	Jules Dewald
15:10 – 15:35	Clinical potential of new technologies	Michael Boninger
15:35 – 16:00	Clinical potential of new technologies	Jane Burridge
16:00 – 16:30	Coffee break/poster session/exhibition	
16:30 – 16:45	Evidence versus experience	Andreas Luft
16:45 – 17:00	Evidence versus experience	John Krakauer
17:00 – 17:15	Evidence versus experience	Michael Weller
17:15 – 17:30	Evidence versus experience	Steve Wolf
17:30 – 18:00	Roundtable discussion: Evidence versus experience	

Wednesday - June 29, 2011: PRELIMINARY PROGRAM

International Neurorehabilitation Symposium 2011		
07:30 – 08:00	Coffee and registration	
08:00 – 08:20	Rehab Week Zurich: Welcome Address	ICCOR/ICVR/INRS
08:20 – 09:00	Rehab Week Zurich: Plenary lecture	Olaf Blanke
09:00 – 09:40	Rehab Week Zurich: Plenary lecture	Zev Rymer
09:40 – 10.20	Rehab Week Zurich: Interactive Podium Presentation, Fast Forward (1 min each)	various
10.20 – 10:50	Coffee break/poster session/exhibition	
10:50 – 11:15	Clinical application of new technologies (current achievements)	Andreas Meyer-Heim
11:15 – 11:40	Clinical application of new technologies (current achievements)	Carolynn Patten
11.40 – 12:05	Clinical application of new technologies (current achievements)	Albert Lo
12:05 – 12:30	Clinical application of new technologies (current achievements)	Keith Tansey
12:30 – 14:00	Lunch/poster session/exhibition	
14:00 – 14:40	Rehab Week Zurich: Plenary lecture	Carolee Winstein
14.40 – 15:20	Rehab Week Zurich: Plenary lecture	Tim Lüth
15:20 – 16:00	Rehab Week Zurich: Interactive Podium Presentation, Fast Forward (1 min each)	various
16:00 – 16:30	Coffee break/poster session/exhibition	
16.30 – 16.50	Clinical application of new technologies (supportive and combined therapy)	Giancarlo Ferrigno
16.50 – 17:10	Clinical application of new technologies (supportive and combined therapy)	Thomas Schauer
17:10 – 17:30	Clinical application of new technologies (supportive and combined therapy)	Franco Molteni
17:30 – 17:50	Clinical application of new technologies (supportive and combined therapy)	Vittorio Sanguinetti
17:50	Transfer to gala dinner location at the venue Lake Side Zurich	

Workshops INRS 2011

09:30 – 12:00

Robotics in the rehabilitation of upper limb function in SCI

Armin Curt, MD

Hosted by Spinal Cord Injury Center, University of Zurich, Balgrist University Hospital, Zurich, Switzerland

The field of rehabilitation robotics has seen increasing interest over the last decades. Robotic devices are a promising solution to complement conventional therapy, and provide a unique platform for more objective and sensitive assessment. This workshop focuses on robotics in upper limb rehabilitation.

Workshop Program

- Welcome
Armin Curt, MD; Spinal Cord Injury Center, Balgrist University Hospital, University of Zurich, Switzerland
- The advanced assessment of upper limb function
Inge-Marie Velstra, MSc; Swiss Paraplegics Centre, Nottwil, Switzerland
- Advanced approaches in upper limb rehab
Milos Popovic, PhD; Rehabilitation Engineering Laboratory, Torontot, Canada
- Task-oriented training of the upper extremity in SCI: Concepts and methods for rehabilitation technologies
Angelique Timmermans, PhD; Maastricht University, Netherlands
- How to identify targets and tools in upper limb SCI rehab
Michael L. Boninger, MD; University of Pittsburgh, School of Medicine, Pittsburgh, USA
- First insights into the Armeo application in tetraplegia
José Zariffa, MSc; ICORD, University of British Columbia, Canada
- Clinical standards: European perspective
Doris Maier, MD; Trauma Center Murnau, Germany
- Clinical standards: North American perspective
Deborah Backus, PhD; Spinal Cord Injury Research, Shepherd Center, Atlanta, USA
- Wrap up and lessons learned
John Steeves, PhD; ICORD, University of British Columbia, Canada

09:30 – 11:00

Very early mobilization

Prof. Andreas Luft

Hosted by Universitätsspital Zürich, Zurich, Switzerland

The aim of this workshop is to provide an overview on standards and guidelines for very early mobilization in different pathologies like Stroke, TBI and SCI and to discuss recent and future developments within the field. Furthermore to provide an insight on how new technologies are currently integrated and applied into the clinical setting and their future potential.

Details to follow soon...

09:30 – 10:30

Implementation of robotics in clinical settings – best practice examples

Leslie VanHiel, PT; Shepherd Center
Dr. Kerstin Baldauf; Helios Klinik Zihlschlacht
Dr. Chan Key Fei; Tan Tock Seng, Singapore

Hosted by Hocoma, Switzerland

In this workshop speakers from leading rehabilitation centers from over the world will present their experience with the implementation of robotics into their clinical settings.

The speakers will introduce their centers and robotic devices with their target patients treated with robotics. Furthermore they will present the new working environment of their therapists, talk about their experience with reimbursement, and report from problems they were confronted with when they started with robotics and how they solved them.

There will be three talks a 15 minutes.

During the last 15 minutes of this workshop, all speakers are available for answering your questions.

09:30 – 10:30

Non invasive spinal assessment

Cesare Mannhart, MSc ETH HMS

Hosted by iddiag, Switzerland

This workshop will provide an overview on different non invasive spinal assessment methods with an emphasis on the SpinalMouse®.

The SpinalMouse® is an assessment device to determine shape and mobility of the spinal column (Th1 – S3) in the sagittal and frontal planes in a non invasive way. The device is rolled over the skin down the back as the mobile sensors independently follow the shapes and angles of the vertebrae. Based upon a scientifically valid and reliable computing method, the following clinically relevant parameters are computed:

- Mobility and posture of individual motion segments, anatomical regions and the overall spine in the sagittal and frontal planes
- Postural competence and sufficiency
- Scral-Hip Joint positioning
- Length of the back

Understanding the position and mobility of vertebral segments helps to identify back specific findings, to define an individually tailored therapy and eventually to evaluate and report on the therapeutic progress. The participants will have the opportunity to use the SpinalMouse®.

11:00 – 12:00

Erigo® basic. Early mobilization: current standards enhanced using Erigo advanced robotic movement therapy

Dr. Arash Dodge and Harald Kinzner

Hosted by Hocoma, Switzerland

In recent years early mobilization of patients in acute care has proven to be an effective therapy for stroke and intensive care patients. For example helping stroke patients moving and loading their legs when in the upright position as early as 24h after onset has proven to be a safe procedure where patients can faster regain the ability to walk in a significant way. However this type of treatment requires 2-3 physiotherapists and is difficult to sustain for longer periods of training. The purpose of Erigo therapy is to use an advanced robotic device to support this type of treatment by combining verticalization, mobilization of the hip, knee and ankle joints in a physiological manner, and cyclic loading of the legs in order to support therapists when performing early mobilization of moderate to severely affected patients as early as possible. The Erigo has proven to be an effective therapy for bringing patients faster in the upright position by keeping patients' cardiovascular system stable during verticalization.

In this workshop we will

- Give a brief overview of early mobilization standards in the scientific and clinical community today

- Demonstrate the Erigo product with an overview of its features and benefits
- Present Erigo therapy implementation in different acute care clinical settings such as a neurointensive ward for spinal cord injured patients, and in a stroke unit
- Discuss scientific results using Erigo in acute and post acute care for neurological patients

This workshop is targeted to physiotherapists and physicians working in acute care settings such as stroke units, intensive care units, or rehabilitation facilities where early rehabilitation is a mindset. We will help you take your early rehabilitation therapy concepts to the next level!

No experience with the device necessary.

11:00 – 12:00

Lokomat[®] basic. Enhanced functional locomotion therapy with the Lokomat[®]

Julia Buehlmeier and Annick Schmartz

Hosted by Hocoma, Switzerland

Locomotion therapy supported by an automated gait orthosis on a treadmill has shown to be an effective intervention for improving over-ground walking function caused by neurological diseases and injuries in many cases. The Lokomat system assists walking movements of gait-impaired patients and is used to improve mobility in individuals following stroke, spinal cord injury, cerebral palsy and multiple sclerosis as well as other neurological diseases and injuries. The LokomatPro has been on the market since 2001 and has been a crucial improvement in the art and science of locomotion therapy.

In this workshop, we will

- perform a product demonstration
- explain the advantages of Lokomat therapy compared to conventional gait training, such as longer and more intensive training, real time feedback for a higher motivation and compliance, physiological gait pattern provided by individually adjustable orthoses, assessment and reporting functionality
- present the field of application of the Lokomat
- give insight into current scientific evidence
- Clinical application specialists will be present to discuss and answer your questions.

This workshop targets therapists as well as medical doctors interested in bringing gait therapy to the next level using novel technologies, and it will provide an overview over the clinical benefits and the field of application of the Lokomat.

No experience with the device necessary.

11:00 – 12:00

Virtual reality-based rehabilitation with YouGrabber and YouKicker

PD Dr. Daniel Kiper, Co-Founder
Oliver Ullmann, Co-Founder & CEO

Hosted by YouRehab, Switzerland

YouGrabber is a new virtual reality-based tool for upper limb rehabilitation. It is unique in its ability to measure bimanual reaching and grasping in 18 degrees of freedom, combined with class-leading gaming software. Using YouGrabber, therapists can implement several therapy forms with one system, e.g. functional training, constraint-induced therapy, virtual mirror therapy. This workshop will demonstrate the clinical use of YouGrabber and its companion YouKicker for lower-limb rehabilitation.

13:00 – 15:15

Robot-supported locomotor training in pediatric neurorehabilitation: application, assessment and achievements

Huub van Hedel, PhD

Hosted by Pediatric Rehab Research Group, Rehabilitation Center Affoltern am Albis, University Children's Hospital Zurich, Switzerland

The goal of this workshop is to provide an insight into our approach at the Rehabilitation Center Affoltern am Albis to train children with neurological disorders with the pediatric driven gait orthosis Lokomat[®]. In addition, we present the tests we use to evaluate changes in walking ability and we will present an up-to-date overview about the scientific achievements in this field.

The target audience we aim for are therapists who are working in a pediatric setting and (are interested in working) with the pediatric Lokomat. This workshop will consist of several presentations, as well as some practical exercises.

Your hosts for this workshop:

- Huub van Hedel, PhD, PT
- Karin Brütsch, PhD
- Corinne Ammann, MPTSc
- Tabea Schuler MSc

The preliminary program looks as follows:

- Introduction to our center and expectations of the workshop participants
- Robotic Body Weight Supported Treadmill Training (BWSTT) in children from a practical point of view: target population, inclusion/exclusion criteria, adjusting training parameters
- Biofeedback and virtual reality for robotic BWSTT in children
- Clinical results of robotic BWSTT in children
- Standardized assessments: Timed walking tests and feasibility of the electronic walkway system "GaitRite"
- 3D gait analysis to monitor improvement in quality of walking – a clinical example

13:00 – 14:00

Introducing the Armeo[®]Power: Guiding severely affected patients towards clinical success

Dr. Alexander Duschau-Wicke and Nicole Schüpfer

Hosted by Hocoma, Switzerland

In this workshop, we will present the Armeo[®]Power to an international public for the first time. The ArmeoPower completes Hocoma's established Armeo Therapy Concept and was specifically designed for patients with severe movement impairment who have no voluntary activation of their arm muscles yet. In addition to the Arm Weight Support, those severely affected patients specifically require assist-as-needed support for goal-directed movements. The motors of the ArmeoPower arm exoskeleton fulfill these needs by supporting and guiding patients as needed during the training of functional movements in a large 3D workspace.

Get to know the ArmeoPower in a hands-on seminar, and learn about experiences and best practices with the ArmeoPower research prototype (ARMin III, ETH Zurich) during a stroke multicenter trial in 4 Swiss rehabilitation hospitals.

No experience with the device necessary.

13:00 – 14:00

Lokomat[®] advanced: provoking best therapy efficiency in every therapy period

Julia Bühlmeier, PhD together with Clinical Expert (tbd)

Hosted by Hocoma, Switzerland

This workshop targets therapists as well as medical doctors who are already familiar with the basics of the Lokomat[®].

In this workshop, we will provide best practice examples with the Lokomat.

Furthermore we will focus on the following:

- how to challenge the patients with their specific needs during the course of the disease
- how to adapt and modulate training parameters in order to provoke best possible outcomes

Experience with device essential.

13:00 – 14:00

Pablo[®]Plus - Upper Limb Rehabilitation

Maik Hartwig, MSc. OT

Hosted by Tyromotion, Austria

Introducing the evidence-based therapy system Pablo[®]Plus for patients with sub-acute and chronic arm-paresis with plegic, paretic and spastic handicaps.

The practice oriented workshop shows a great variety of training methods with both the Pablo[®]Multiball and Pablo[®]Multiboard, which not only allow to train upper limb movements, strength and tonus-control but also record each and every assessment for documentation and evaluation.

14:15 – 15:15

Enhancing Arm and Hand Rehabilitation with Armeo[®]Spring

Peter Schenk, PhD and Tom Vanderhenst, MSc

Hosted by Hocoma, Switzerland

Since its introduction in 2007, the Armeo[®]Spring has gained a lot of attention and has been introduced successfully into leading centres worldwide. Through the combination of the passive Arm Weight Support and Augmented Feedback, it facilitates intensive, repetitive, self-initiated movement exercises even for patients with severe motor impairments. The Augmented Feedback provides game-like exercises and functional tasks, but also Assessment Tools.

In this workshop, we will

- introduce the rationale for the ArmeoSpring therapy
- present the Armeo Therapy Concept
- present current scientific evidence
- perform a live demonstration

Clinical application specialists will be present to discuss and answer your questions.

This workshop targets therapists as well as medical doctors interested in bringing upper extremity therapy to the next level using novel technologies, and it will provide an overview over the clinical benefits and the field of application of the ArmeoSpring.

No experience with the device necessary.

14:15 – 15:15

Valedo™ Therapy Concept – Low back pain treatment with motivating functional movement therapy

Clinical Expert (tbd)

Chronic low back pain is a major and occupational public health problem, which is associated with high medical costs mainly through the loss of productivity due to sick leave. Research suggests that many back injuries and incidences of low back pain can be improved by active functional movement therapy. Nevertheless, the main problems in low back pain therapy are insufficient patient motivation as well as the patient's difficulty to exercise independently.

The Valedo™Motion is a medical back training device for professional hospital and clinical use. It consists of three lightweight orientation and motion sensors and a tablet PC providing the Augmented Feedback software as well as audio and visual feedback. Therapeutic exercise regimes typically focus on three areas: Stabilizing the spine whilst undertaking additional upper body movements. Mobilize the spine to ensure safe and flexible movements and improving patient movement awareness and proprioception. With the ValedoMotion we offer clinical relevant exercises to patients, engaging them in a self guided therapy program and prove the therapy and assessment for compliances.

Within the workshop we will give you an overview of the features and benefits of the Valedo Therapy Concept. You will see how Valedo makes a difference in daily clinical practice with patients. You will see how Valedo has been integrated in the value change of the Spine and Joint Center in Rotterdam. You will have the chance to experience ValedoMotion yourself.

No experience with the device necessary.

14:15 – 15:15

Amadeo® - Advanced Fingerrehabilitation

Goncalo Goncalves, PT

Hosted by Tyromotion, Austria

There are just as many different hands as there are people. The Amadeo® creates a system for all phases of neurologic rehabilitation.

Target oriented exercises on the device help to improve motor functions of patients with restricted movement in individual fingers or in the whole hand.

The varied training and the clear feedback evaluations are very motivating for the patient. The therapy progress is made measurable and can be explained easily when discussing the effect of the therapy.