

PROGRESS IN MOTOR CONTROL XIV


Bambino Gesù
OSPEDALE PEDIATRICO



***ROME, Italy
September 27 - 30, 2023***

*Auditorium Antonianum
Viale Manzoni, 1
Rome*

un evento
organizzato da



PROGRAMME



Welcome message

The Organizing Committee, the International Society of Motor Control (ISMC), and the “Bambino Gesù” Children’s Hospital are happy to extend a warm welcome to our colleagues and friends attending the Progress in Motor Control XIV meeting in Rome, Italy, from 28-30 September 2023. Progress in Motor Control is the biennial meeting of the ISMC. The Mission of the Society is to “stimulate and foster education and open debate among scientists from all nations on basic and applied research in the area of the control of movements of biological systems.” Previous meetings have been held worldwide in Auckland (virtual), Amsterdam, Miami, and Budapest. The Progress in Motor Control meeting will be held with support from the Movement Analysis and Robotics Laboratory (MARlab), which was founded in 2000 as a part of the Neurorehabilitation Division in the Department of Neurorehabilitation and Robotics at the “Bambino Gesù” Children’s Hospital, one of the largest and oldest research children’s hospital in Italy. The meeting will be held in the Auditorium Antonianum, Viale Manzoni 1, Rome, Italy.

Organizing Committee

Maurizio Petrarca

Susanna Summa

Daniele Piscitelli

Mindy Levin

Mark Latash

Monica Perez



PROGRESS IN MOTOR CONTROL XIV

Rome
September 27-30, 2023



PROGRAMME

27 September 2023

Symposia

Meeting venue for this session:
Auditorium "Valerio Nobili" - Ospedale
Pediatrico Bambino Gesù

Address: Viale Ferdinando Baldelli, 38,
00146 Roma RM

It's Time to Move Forward: Translating Motor Control Principles into Clinical Neurorehabilitation

Integration of neuromodulation, neuroimaging, and behavioral approaches for shedding new light on sensorimotor cortical networks

Marco Santello

Decoding neural motor commands to muscles using non-invasive high-density electromyographic recordings

Francesco Negro

Balance stability in walking and standing: towards new definitions and assessment methods

Paradigms of sensorimotor interactions in children with developmental coordination disorders and adult neurological populations: windows to timing and motor control

Lousin Moumdjian



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28 September 2023

[Auditorium Antonianum](#)

[Viale Manzoni 1, Rome](#)

1st Session: Action perception coupling

09:00 am **The perception-action coupling in collective dynamics**

Speaker: William Warren

09:30 am **Locomotor Coordination, Visual Perception and Head Stability**

Speaker: Richard Van Emmerik

10:00 am **Can movement patterns reveal the status of the musculoskeletal system? A complex approach to injury and recovery**

Speaker: Sérgio T. Fonseca

10:30 break

11:00 am **Student -Oral presentation:** 3 x 10 min

11:30 am *Lunch -Poster presentation*

2d Session: Coordination

13:30 **Synergic control of movement: From single muscles to the whole body**

Speaker: Mark L Latash

14:00 **On the coordination dynamics of agency**

Speaker: Scott Kelso

14:30 **Low-dimensional models of motor coordination at the kinematic and muscular levels**

Speaker: Andrea D'Avella

15:00 break

15:30 **Student -Oral presentation:** 3 x 10 min

16:00 **Poster Session**

18:00 *Welcome cocktail*



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29 September 2023

Auditorium Antonianum

Viale Manzoni 1, Rome

1st Session: Motor learning – rules of interaction

09:00 am **Sensorimotor control meets surgical robotics - a model of the surgeon can benefit patients**

Speaker: Ilana Nisky

09:30 am **Computational joint action: from joint coordination to artificial partners**

Speaker: Vittorio Sanguineti

10:00 am **Student -Oral presentation:** 3 x 10 min

10:30 break

11:00 am **Student -Oral presentation:** 3 x 10 min

11:30 am *Lunch -Poster presentation*

2d Session: Motor learning – translation of motor learning principles

13:30 **Neural substrates of rapid consolidation of procedural motor skill**

Speaker: Leonardo G. Cohen

14:00 **Exploring to learn synergies and its applications in rehabilitation after stroke and in upper limb prosthetics**

Speaker: Raoul Bongers

14:30 **From planning to execution: Motor sequence control in the peri-movement phase**

Speaker: Katja Kornysheva

15:00 break

15:30 **Student -Oral presentation:** 3 x 10 min

16:00 **Poster Session**

18:00 ISMC Bernstein Lecture

19:00 ISMC AGM

20:30 *Gala Dinner*



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30 September 2023
Auditorium Antonianum
Viale Manzoni 1, Rome

1st Session : Goal-oriented action

09:00 am **Toward a neural theory of goal-directed reaching movements**

Speaker: Gregor Shoner

09:30 am **Translation of principles of motor control to improve sensorimotor outcomes following brain injury**

Speaker: Mindy Levin

10:00 am **Goal-Oriented Action: New Perspectives with Special Emphasis on Neurorehabilitation**

Speaker: Carolee J. Winstein

10:30 break

11:00 am **Student -Oral presentation:** 3 x 10 min

11:30 am *Lunch -Poster presentation*

2d Session: Human-machine interaction

13:30 **How Motor Control Inspires Soft Robotics Technologies for Prosthetics and Rehabilitation**

Speaker: Antonio Bicchi

14:00 **Non-invasive spinal interfacing for rehabilitation applications**

Speaker: Ivan Vujaklija

14:30 **How input can drive neural firing throughout movement**

Speaker: Andrew B. Schwartz

15:00 break

15:30 ISMC Early Career Award & Presentation

16:00-18:00 **ASIA Session - Corticospinal Tract / regeneration - Linda Bambrick – NINDS**

16:00 **Are we optimizing our rehabilitative therapies enough?**

Monica Perez

16:30 **The Role of the Corticospinal Tract and Activity-Dependent Processes for Functional Restoration After Spinal Cord Injury**

John (Jack) Martin

17:00 **The role of the corticospinal tract for functional restoration after spinal cord injury?**

Patrick Freund

17:30 **A New Framework for Action and Perception.**

Anatol Feldman

ASIA Session Moderator:

Linda Jones