

A forum to foster the growing interest in scientific work at the intersection of Motor Control and Biomechanics.

SYMPOSIUM OF THE ISB WORKING GROUP IN MOTOR CONTROL MOTOR CONTROL IN BIOMECHANICS

TUESDAY 25 JULY 2017 | 8:30 AM TO 4:30 PM • WEDNESDAY 26 JULY 2017 | 10:15 AM TO 11:15 AM

2017 XXVI CONGRESS OF THE INTERNATIONAL SOCIETY OF BIOMECHANICS

BRISBANE CONVENTION AND EXHIBITION CENTER • CNR MERIVALE & GLENELG STREETS, SOUTH BANK, BRISBANE, QUEENSLAND (AUS)

ORGANIZERS: ISB WORKING GROUP IN MOTOR CONTROL • DR. PAOLA CONTESSA (USA) • DR. WILLIAM Z. RYMER (USA)

INVITED SPEAKERS

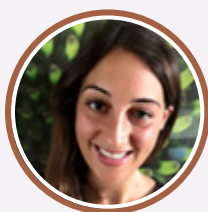
Each invited talk will be followed by oral presentations. For the full schedule please visit biomech2017.com



Dr. Penelope McNulty
Neuroscience Research
Australia and University of
New South Wales
(Australia)



Dr. Glen A. Lichtwark
University of Queensland
(Australia)



Dr. Martina Mancini
Oregon Health and
Science University
(USA)



Dr. John H. Challis
Pennsylvania State
University
(USA)



Dr. Fuminari Kaneko
Sapporo Medical
University
(Japan)

Who Should Attend: Researchers and students with an interest in Biomechanics and Motor Control should attend. Participants will have the opportunity to discover the latest developments at the intersection of these two fields and discuss with experienced investigators.

Registration and Fee: Participation is free for all ISB attendees. Register at: biomech2017.com/registration.php



With the support of the De Luca Foundation, MA (USA): Established by Professor Carlo J. De Luca to recognize researchers in the field of Electromyography and Biomechanics with emphasis on Motor Control. The foundation provides an annual award, the Delsys Prize; and

the Emerging Scientist Award administered by the International Society of Biomechanics.

With the support of ISB: An award of \$ 500 is made available to students and researchers who submitted their work to the symposium.

SPECIAL SESSION | Wednesday, 26 July 2017 • 10:15 AM to 11:15 AM

Lifelong Contributions of Carlo De Luca to the Study of Human Movement: Motor Control Innovations

Opening: Prof. William Z. Rymer (USA)

*Speakers: Dr. Serge Roy (Delsys Inc & Boston University, USA)
and Dr. Roberto Merletti (Politecnico di Torino, Italy)*



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- PROGRAM -

TUESDAY 25 JULY

9:30 - 10:30 am	Neuromuscular Disorders and Rehabilitation
9:30 - 9:54 am	<u>Opening Invited Talk</u> Quantifying rehabilitation efficacy in chronic stroke requires a multi-modal approach: combining biomechanics, neurophysiology and clinical measures Dr. Penelope A. McNulty (Neuroscience Research Australia and University of New South Wales, Australia)
9:54 - 10:06 am	Knee muscle activation strategy in girls with generalized joint hypermobility Dr. Bente Rona Jensen
10:06 - 10:18 am	Evaluation and monitoring of motor control of the lumbopelvic movement in patients with chronic nonspecific low back pain Dr. Sharon MH Tsang
10:18 - 10:30 am	Motor cortex representation of deep neck flexor muscles differs between individuals with and without neck pain Ms. Edith Elgueta-Cancino
11:00 - 12:00 pm	Musculoskeletal Biomechanics
11:00 - 11:24 am	<u>Opening Invited Talk</u> The potential influence of tendon compliance on sensory feedback from lower limb muscles Dr. Glen Lichtwark (University of Queensland, Australia)
11:24 - 11:36 am	Influence of residual force enhancement and elongation of attached cross-bridges on the stretch-shortening cycle Dr. Atsuki Fukutani
11:36 - 11:48 am	Differences between concentric and eccentric contraction on the activation of biceps, brachioradialis and triceps muscle Dr. Catherine Disselhorst-Klug
2:00 - 3:00 pm	Balance and Gait
2:00 - 2:24 pm	<u>Opening Invited Talk</u> Insights into freezing of gait from wearable sensors Dr. Martina Mancini (Oregon Health and Science University, USA)

2:24 - 2:36 pm	Changes in movement variability with increased mechanical demand may be influenced by limb preference Abbigail Fietzer
2:36 - 2:48 pm	Investigating gait variability and motor control in knee osteoarthritis Miss Gwenllian Tawy
2:48 - 3:00 pm	High corresponding COP and COG movement during tandem stance in mid-aged and elderly Yuanji-dancers Dr. Yun-Ju Lee
3:00 - 4:00 pm	Motor Coordination
3:00 - 3:24 pm	<u>Opening Invited Talk</u> Individual muscle forces and musculo-skeletal models of human movement Dr. John H. Challis (Pennsylvania State University, USA)
3:24 - 3:36 pm	Detecting the relevance of each motion component in whole-body motion to performance Dr. Ken Takiyama
3:36 - 3:48 pm	Coordination of motor unit firings during cyclic activities of the upper-limb Dr. Joshua Kline
3:48 - 4:00 pm	Spatiotemporal control of redundant musculoskeletal system is modularly regulated in motor adaptation Dr. Shota Hagio

WEDNESDAY 26 JULY

9:30 - 10:30 am	Motor Training and Adaptation
9:30 - 9:54 am	<u>Opening Invited Talk</u> Exposure to a unique visual stimulus with kinesthetic sensation results in synchronized reciprocally induced spontaneous muscular recruitment Dr. Fuminari Kaneko (Sapporo Medical University, Japan)
9:54 - 10:06 am	New insights into using the emg power spectrum to assess firing patterns during muscle fatigue Dr. Michael Asmussen
10:06 - 10:18 am	Confounding factors in the analysis of fatigue-induced motor unit firing adaptations Dr. Paola Contessa
10:18 - 10:30 am	The effects of pain on motor learning outlasts the duration of the painful stimulus Sauro Salomoni
4:00 - 5:00 pm	Special Session: Lifelong Contributions of Carlo De Luca to the Study of Human Movement: Motor Control Innovations
4:00 - 4:12 pm	Opening Dr. William Z. Rymer (Shirley Ryan Ability Lab, USA)
4:12 - 4:36 pm	Lifelong Contributions of Carlo De Luca to the Study of Human Movement: Motor Control Innovations Dr. Serge Roy (Delsys Inc. & Boston University, USA)
4:36 - 5:00 pm	Lifelong contributions of Carlo De Luca to the study of human movement: a global perspective Dr. Roberto Merletti (Politecnico di Torino, Italy)