Muscle Decline in Aging and Neuromuscular Disorders
Mechanisms and Countermeasures

Terme Euganee, Padova (Italy), April 13 - 16, 2016

WEDNESDAY April 13, 2016 - Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

17.30 Exercise and FES in premature and late aging: Tutorial and get-together, H Kern, U Carraro, Chairs
17.30 Functional Electrical Stimulation (FES) of aging muscle, Helmut Kern, Vienna, Austria
18.00 In-Bed Gym and FES: Fighting muscle weakness by take-home strategies, Ugo Carraro, et al., Venice, Italy

THURSDAY April 14, 2016 - Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

9.00 Workshop “Circadian rhythms in skeletal muscle”, Christiaan Leeuwenburgh, Stefano Schiaffino, Chairs
10.00 Intrinsic and extrinsic control of circadian gene expression in skeletal muscle, Kenneth A. Dyar, München, Germany
10.40 Workshop “Diaphragm, structure and function” – C Leeuwenburgh and C Reggiani, Chairs
10.40 Bench to bedside research on critical illness myopathy (CIM) and ventilator induced diaphragm muscle dysfunction (VIDD): Underlying mechanisms and intervention strategies, Lars Larsson, Stockholm, Sweden
11.20 A finite element approach to diaphragm mechanics: multiscale modeling from fiber to whole muscle, Lorenzo Marcucci, Piero Pavan, Luana Toniolo, Lina Cancellara, Arturo Natali, Carlo Reggiani, Padova, Italy
11.40 Plasticity of mouse diaphragm: aging and response to endurance training, Silvia Quartesan, Lina Cancellara, Sara di Siena, Cinzia Calabrese, Fabio Naro, Carlo Reggiani, Padova, Italy
12.00 7-day denervation-atrophy is absent in diaphragm of oldest rats, Daniela Danieli, et al., Padova, Italy
14.15 Openings, Marco Sandri, CIR-Myo, Head, Rosario Rizzuto, University of Padua, Rector, Italy
14.30 Workshop “Neuromuscular adaptations to exercise and ES in aging”, Lee Sweeney, Marco Sandri, Chairs
14.40 CIR-Myo - Lecture 1: Autophagy and the control of neuromuscular junction, Marco Sandri, Padova, Italy
15.30 Role of MuRF1 and autophagy for the maintenance of neuromuscular junction, Rüdiger Rudolf, Mannheim, Germany
16.00 CK2-dependent phosphorylation in skeletal muscle regulates neuromuscular junction stability and mitochondrial homeostasis, Saida Hashemolhosseini, Erlangen, Germany
16.30 Spatial distribution of neuromuscular junction components. Pretzels are more complex than we have anticipated, Tomasz Proszynski, Warsaw, Poland
17.00 Mitochondrial Alarms are key intercellular signals in the degeneration &regeneration of the Neuromuscular Junction, Cesare Montecucco, Padova, Italy
17.45 Introduction by Gerta Vrbova, London, UK
18.00 CIR-Myo – Lecture 2 - Difference in muscular adaptation due to regular exercise or through electrical stimulation, Christiaan Leeuwenburgh, University of Florida, Gainesville, FL, US
20.00 Dinner
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Organizers: Ugo Carraro, Helmut Kern, Christiana Leeuwenburgh, Werner Lindenthaler, Francesco Piccione, Carlo Reggiani, Marco Sandri

FRIDAY April 15, 2016
Muscle Meeting in Villa Veneta - Villa dei Vescovi, Luvigliano, Euganee Hills

08.30 Courtesy Bus to Luvigliano di Torreglia, Euganee Hills (Padova)
09.00 Introduction by Carlo Reggiani, Padova, Italy
09.10 CIR-Myo – Lecture 3 - Therapeutic Targets for Muscular Dystrophy, Lee Sweeney, Univ. of Florida, Gainesville, US
10.00 “Mobility impairments in aging and myopathies - I” Christiana Leeuwenburg, Ugo Carraro Chairs
10.10 Handling growth and glucose through muscle IGF, Elizabeth Barton, University of Florida, Gainesville, FL, US
10.30 Molecular determinants of triadic junction formation, Enea Liguori, V Sorrentino et al., Siena, Italy
10.50 Role of CASQ1 mutations in human skeletal muscle diseases, Valeria Del Re, V Sorrentino et al., Siena, Italy
11.00 Tat-MyoD fused proteins and myogenic fate of equine MSC, Chiara Gomiero, et al., Padova, Italy
11.30 Calcium Entry Units (CRUs): discovery of intracellular junctions that promote assembly of STIM1 and Orai1 in skeletal muscle, Simona Boncompagni, Chieti, Italy
12.00 CIR-Myo - Lecture 4 – Deep Brain Stimulation in Parkinson and dystonia, Angelo Antonini, Venice/Padova, Italy
13.00 Lunch
14.00 CIR-Myo - Lecture 5 – Link between malignant hyperthermia (MH) and environmental heat stroke (EHS): just a medical hypothesis? Feliciano Protasi, University of Chieti, Italy
14.40 Workshop "Mobility in elderly": Molecular approaches – Helmut Kern, Antonio Musarò, Chairs
15.10 Insights into the oxidative stress-mediated sarcopenia and dismantlement of NMJ, Antonio Musarò, Rome, Italy
15.30 Muscle trophism and mitochondria dynamics in ageing human skeletal muscle trained with Electrical Stimulation, Sandra Zampieri et al., Padova/Vienna
15.50 ERG1a K+ Channel Modulates NFkB Activity in Atrophying Skeletal Muscle, Amber Pond, Southern Illinois University, Carbondale, US
16.10 In situ analyses of human MHC and SR adaptations to aging and FES, Simone Mosole et al., Padova, Italy
16.10 “Mobility impairments in aging and myopathies- II” Stefano Masiero, Francesco Piccione, Chairs
16.10 Power dacay in elderly: Lessons from Master athletes, Paolo Gava et al., Padova, Italy
16.30 Electrical Stimulation in neuromuscular impairments: educational reports, Andrea Marcante et al., Venice, Italy
16.50 Gut inflammation and chronic low back pain, Sergio Veneziani et al., Bergamo, Italy
17.10 Novel insights into skeletal muscle function by mechanomyography in health and disease, Fabio Esposito, Milan, Italy
17.30 CIR-myo - Lecture 6 – Muscle and bone assessed by Color CT, gait analysis and EMG, Paolo Gargiulo, Reykjavik, Iceland
18.30 Courtesy Return Bus to Hotel Augustus, Terme Euganee (Padova)
20.00 Dinner
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SATURDAY April 16, 2016
Hotel Augustus, Viale Stazione 150, Montegrotto Terme (Padova), Italy

09.00  CIR-Myo - Lecture 7 – The RISE Project: roots, outcomes, byproducts, Helmut Kern, Vienna, Austria

09.40  MED®EL Workshop: Functional Rejuvenation in Aging, Werner Lindenthaler, Winfried Mayr, Chairs

09.40  The effects of chronic electrical muscle stimulation (EMS) following nerve injury on time to reinnervation and appropriate reinnervation of muscular targets, Mike P Willand, et al., Toronto, Ontario, Canada, and more ...

10.10  Establishing a hypertrophy model in rats using ‘SpillOver’ stimulation to cause co-contraction, Jonathan C. Jarvis, et al., Liverpool/Vienna

10.40  Investigating Energy Efficiency for different Pulse shapes and electrode arrangements to activate motor neurones, Martin Schmoll, Jonathan C. Jarvis

11.00  Coffee break

11.20  MiniVStim18B: A highly configurable battery powered FES implant for long-term implantation in small animals, Manfred Bijak, Ewald Unger, Michael Haller, Martin Schmoll, Jonathan C. Jarvis, Hermann Lannmuller, Vienna/Liverpool

11.40  Chronic electrical stimulation in rodents: Results of a feasibility study, Michael Karbinder, Graz

12.10  Chronic neurostimulation for treatment of age related laryngeal muscular atrophy, Markus Gugatschka, Graz, Austria

12.30  Lunch

14.00  MED®EL Workshop: ES in Neuromuscular Disorders, Jonathan C. Jarvis, Feliciano Protasi, Chairs

14.00  Method for selective surface stimulation of denervated muscles in the larynx, Berit Schneider-Stickler, Matthias Leonhard, Lukas Kneisz, Winfried Mayr, Vienna/Innsbruck

14.30  Determining optimal settings for selective surface stimulation in order to recruit paralyzed facial muscles under non painful conditions, Gerd Fabian Volk, Orlando Guntinas-Lichius, Tobias Schmid, ENT Jena; Lukas Kneisz, Matthias Ladurner, MEDEL Innsbruck; Winfried Mayr, Vienna, Austria

15.00  Round Table on ES-induced muscle damage, Discussant: Jonathan C. Jarvis, Winfried Mayr, Ugo Carraro, Justin Perkins

15.30  Coffee break

16:00  Vagus stimulation and other ES managements Jonathan C. Jarvis, Francesco Piccione, Chairs

16:00  Percutaneous Auricular Vagus Nerve Stimulation, Eugenius Kaniusas, Stefan Kampusch, Jozsef Constantin Széles, Vienna, Austria

16.30  “Noisy” electrical stimulation patterns facilitate the activity of cultured muscle cells, Marina Sciancalepore, et al., Trieste, Italy

17.00  Evaluation of tSCS treatment for the alleviation of lower limb spasticity, Thordur Helgason et al., Reykjavik, Iceland

17.20  Quantifying muscle degeneration from nonlinear trimodal regression analysis of radiodensitometric CT distributions, Kyle J. Edmunds et al., Reykjavik, Iceland

17.40  Biomarkers in aging and neuromuscular disorders, S Masiero, U Carraro, Chairs

17.40  Intracellular Ca\textsuperscript{2+} decoders as biomarkers of skeletal muscle plasticity in neurorehabilitation, Alessandra Nori et al., Padova, Italy

18.10  Biomarkers of bone, muscle and PNS plasticity for neurorehabilitation, Barbara Zavan et al., Padova, Italy

18.40  Conclusive Remarks, Winfried Mayr, Vienna Austria

19.00  U. Carraro - Arrivederci, Auf Wiedersehen, See You to 2017 PaduaMuscleDays 20.00 Dinner