

Padua University & Interuniversity Institute of Myology
Interdepartmental Research Center of Myology & C.N.R. Institute of Neuroscience, Padua, Italy

2007Spring PaduaMuscleDays **E. Gutmann Heritage, 30-year after** **The Long Lasting Denervated Muscle**

Terme Euganee&Palazzo del Bo, Padova (Italy), April 11 – 14, 2007
G. Vrbova and U. Carraro, Organizers

Terme Euganee Conference Hall, Hotel Augustus, Viale Stazione 150 - 35136 Montegrotto Terme (Padova)
Phone +39 049 793 200 - Fax +39 049 793518 - http://www.hotelaugustus.com/english/pages/hotel_augustus.php
2007 Ernest Gutmann Heritage Openings: Aula Magna of the Padua University, April 12, 2007
Via VIII FEBBRAIO, 3 - I-35100 Padova, Italy

Topics

Muscle electrical stimulation: from bench to trials - The long lasting denervated muscle: biology and clinical applications - Muscle atrophy/hypertrophy & adaptations - From regenerative myogenesis to muscle reconstruction - Muscle diseases and therapies – Exercise-induced muscle damage & rehabilitation

PROGRAM

Wednesday April 11, 2007

Terme Euganee Conference Hall: Hotel Augustus, Viale Stazione 150 - Montegrotto Terme (Padova)

16.00 **Registration & 2007Spring PaduaMuscleDays Workshop**
Hotel Augustus, Viale Stazione 150 - 35136 Montegrotto Terme (Padova), Italy

2007Spring PaduaMuscleDays Translational Myology Workshop
Muscle Electrical Stimulation: From bench to trials (FES & Electroporation)
Dirk Pette & Carlo Reggiani, *Chairmen*

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| 16.30 | Murgia Marta et al., Padova, Italy | <i>Nuclear Factor of Activated T cells NFAT family members control activity-dependent specification of skeletal muscle fiber types</i> |
| 17.00 | Rigatelli G.L. et al., Rovigo, Italy | <i>A new intravascular approach for minimally-invasive intramuscular massive muscle stimulation</i> |
| 17.30 | Rossini Katia et al., Padova, Italy | <i>N-CAM expression in permanent denervated human muscle before and after FES</i> |
| 18.00 | Cerrel-Bazo H. , Verona, Italy | <i>Patient training in walking with FES by thoracic-level paraplegics</i> |
| 18.30 | Gargiulo P. et al., Reykjavik, Iceland | <i>Segmentation of muscle bellies: a novel technique to monitor growth of denervated degenerated muscle treated with functional electrical stimulation</i> |
| 19.00 | Koffer Anna , London, UK | <i>Signalling to actin cytoskeleton in mast cells</i> |
| 20.30 | Dinner | |

Thursday April 12, 2007

The Aula Magna, University of Padova

8.45 2007 Gutmann Heritage Openings

Vincenzo Milanesi, *University of Padova, Rector*, **Giorgio Palù**, *Medical Faculty, Dean*
Ugo Carraro, *Interdepartmental Research Center of Myology, Head*

Celebration of Ernest Gutmann' life and work

- 9.00 What was the secret of Ernest Gutmann's charm? **Gerta Vrbova**, London, UK
9.20 Ernest Gutmann - an example and friend **Dirk Pette**, Konstanz, Germany
9.40 Ernest Gutmann in his own words **Anna Koffer-Gutmann**, London, UK
10.00 Ernest Gutmann in Italy **Stefano Schiaffino**, Padua, Italy

Break

Ernest Gutmann Heritage Lectures - Stefano Schiaffino & Corrado Angelini, *Chairmen*

- 10.30 **Clara Franzini-Armstrong** An evolutionary look at the architecture of protein interactions in the control of calcium movements in muscle cells
11.00 **Reggie V. Edgerton** Activity and non-activity dependent mechanisms for maintaining functional muscle properties
11.30 **Alfred Goldberg** Molecular mechanisms for the protein loss in atrophying muscle
12.00 **Victor Dubowitz** Histochemical studies of developing and diseased muscle

13.00 *Lunch at the Isola di Caprera Restaurant and Visit of The Anatomical Theatre*

EG-H Session 1.1. The biology of the long lasting denervated muscle

H. Kern & U. Carraro, *Organizers* – Milan R Dimitrijevic & Francesco Mazzoleni, *Chairmen*

- 14.10 **Bruce Carlson**, Ann Arbor, US "The Denervated Muscle" - 45 Years Later
14.40 **Tessa Gordon**, Edmonton, Ca Selective muscle denervation and adaptive changes in ALS
15.00 **Olga Hudlicka**, Birmingham, UK Do changes in the vascular bed contribute to the development of denervation atrophy in skeletal muscle?
15.20 **Christine K Thomas**, Miami, US Time-course of muscle atrophy and recovery when reinnervation is from embryonic neurons transplanted into adult rat peripheral nerve
15.40 **Maurilio Sampaolesi**, Pavia, IT Cell therapy in a large animal model for Muscular Dystrophy
16.00 **Gregory Borschel**, St. Louis, US Muscle tissue engineering: the *in vivo* axial-vessel approach

Break

EG-H Session 1.2 The long lasting denervated muscle: Functional Electrical Stimulation (FES)

H. Kern & U. Carraro, *Organizers* – Milan R Dimitrijevic & Francesco Mazzoleni, *Chairmen*

- 16.30 **Helmut Kern**, Wien, Austria Restoration of the long term denervated human muscle by FES
17.00 **Ugo Carraro**, Padova, Italy Human myofiber permanent denervation: Long lasting atrophy, and recovery by Functional Electrical Stimulation
17.20 **Feliciano Protasi**, Chieti, Italy Structural recovery of skeletal muscle fibers in absence of innervation in humans
17.40 **Winfried Mayr**, Wien, Austria Technical equipment for FES of denervated muscles: Demands and limitations
18.00 **Thórdur Helgason**, Reykjavik Monitoring bone mineral density of femur during electrical stimulation therapy of denervated degenerated thigh muscles.
18.20 **Daniel Graupe**, Chicago, USA Performance and patient training in walking with FES by thoracic-level paraplegics
18.40 **Dimitrijevic Milan R** Conclusions of a long lasting day

20.30 *Terme Euganee Conference Hall: Informal Dinner & Trio Concert*

Friday April 13, 2007

2007Spring PaduaMuscleDays

Terme Euganee Conference Hall: Hotel Augustus, Viale Stazione 150 - Montegrotto Terme (Padova)

EG-H Session 2. Muscle atrophy/hypertrophy & adaptations

S. Schiaffino & M. Sandri, *Organizers* – Alfred Goldberg & Stefano Schiaffino, *Chairmen*

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| 9.00 | Mario Pende , Paris, FR | The mTOR pathway in muscle pathophysiology: from cell size to muscle integrity |
| 9.30 | Antonio Musarò , Rome, Italy | Counteracting muscle wasting in a mouse model of ALS: the role of mIGF-1 |
| 10.00 | Marco Sandri , Padova, Italy | Coordination of autophagy-lysosome and ubiquitin-proteasome systems during muscle atrophy |
| 10.30 | Dario Coletti , Rome, Italy | Free-exercise amplifies skeletal muscle damage in cachectic mice |
| Break | | |
| 11.30 | Carlo Reggiani , Padova, Italy | Skeletal muscle adaptations to hypobaric hypoxia: sensors, signals and changes in gene expression |
| 11.20 | Giorgio Vescovo , Padova, Italy | Heart failure and skeletal muscle reprogramming |
| 12.30 | Marcus C Schaub , Zurich, CH | Long-term genome reprogramming by acute cardiac protective mechanisms |

Lunch & Posters

EG-H Session 3. The long lasting denervated muscle II

H. Kern & U. Carraro, *Organizers* – Bruce Carlson and Olga Hudlicka, *Chairmen*

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| 15.00 | Francini Fabio , Florence, Italy | Sodium and L-type Ca ²⁺ current in skeletal muscle from normal and long-term denervated rat |
| 15.30 | Marini Marina , Bologna, Italy | Gene expression changes in long term denervated rat muscle |
| 16.00 | Anna Jakubiec , Warsaw, Poland | Effects of locomotor training on the structure of the denervated rat soleus muscle |
| 16.30 | Christine K Thomas , Miami, US | Reinnervation from embryonic neurons transplanted into adult rat peripheral nerve: Materials and Methods |

Break

EG-H Session 4. From regenerative myogenesis to muscle reconstruction

F. Mazzoleni & U. Carraro, *Organizers & Chairmen*

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| 17.20 | Giuseppe Vita , Messina, Italy | Nuclear factor kappa-B blockade reduces muscle degeneration and promotes muscle regeneration |
| 18.00 | Vincenzo Vindigni , Padova, Italy | Towards an in vivo vascularized muscle construct |
| 18.20 | Flaibani Marina , Padova, Italy | In vitro engineering of muscle precursor cell niche by mimicking multiple stimuli |
| 18.35 | Carnio Silvia , Padova, Italy | Satellite cells seeded onto 3D scaffolds: a powerful tool for cell therapy protocols as well as basic myo-sciences |
| 18.50 | Sferrazza Rossella , Padova, Italy | Myogenic events in muscle massive crushing |
| 20.30 | Dinner | |

Saturday April 14, 2007

Terme Euganee Conference Hall: Hotel Augustus, Viale Stazione 150 - Montegrotto Terme (Padova)

EG-H Session 5. Muscle Diseases and Therapies

C. Angelini & G. Vita, *Organizers*

- 9.00 **Alfred Stracher**, New Yourk, US Calpain inhibition as a therapeutic approach in neuromuscular and neurodegenerative diseases
- 9.40 **Cenacchi Giovanna**, Bologna, IT The contemporary role of electron microscopy muscle pathology
- 10.10 **Messina Sonia**, Messina, Italy Effect of vascular endothelial growth factor gene transfer on muscle regeneration in mdx mice
- 10.30 **Libero Vitiello**, Padova, Italy Systemic administration of morpholino antisense oligos in aged mdx mice: effects in skeletal and cardiac muscle

Break

- 11.20 **Corrado Angelini**, Padova, Italy Heterogeneous pathogenesis of LGMD2: Consequence for therapy
- 12.00 **Romeo V., et al.**, Padova, Italy PET – SPECT findings in Myotonic Dystrophy type 1 and type 2
- 12.20 **Spinazzi M., et al.**, Padova, Italy A new OPA1 gene mutation associated with polineuropathy
- 12.40 **Gagliardi G., et al.**, Padova, Italy Ventilatory support with NPPV-Helmet in 2 patients with acute respiratory failure secondary to Guillain-Barré syndrome

Lunch

EG-H Session 6. Muscle Diseases and Therapies II

C. Angelini & G. Vita, *Organizers*

- 14.30 **Bernardi Paolo**, Padova, Italy Mitochondria, cyclosporin and collagen VI disease: an update
- 15.00 **Zampieri Sandra**, Padova, Italy Autoantibodies in idiopathic inflammatory myopathies
- 15.20 **Borsato C., et al.**, Padova, Italy Myositis: an heterogeneous inflammatory pathology of skeletal muscle
- 15.40 **Rodolico Carmelo**, Messina, Italy Congenital myasthenic syndromes: clinical variability and molecular features in Italian families
- 16.00 **Corbu A., et al.**, Padova, Italy Preliminary approach to study satellite cell in myopathic aging muscle

Break

- 16.40 **Pichiecchio Anna**, Pavia, Italy Muscle MRI: state of the art in myopathies
- 17.10 **Sorarù G., et al.**, Padova, Italy Skeletal muscle involvement and cognitive profile in SBMA patients and female carriers
- 17.30 **Albertini E., et al.**, Padova, Italy MUSK-positive patients: A particular bulbar atrophic phenotype. Clinical features and therapeutic response features and therapeutic response
- 17.50 **Malerba A. et al.**, Padova, Italy Macrophage-secreted factors allow to selectively stimulate a sub-population of putative myogenic stem cells and allow in vivo muscle reconstruction after subtotal ablation
- 18.30 **Ugo Carraro** Arrivederci, Aufwiederseen, Aurevoir, Goodbye!
- 20.30 Dinner