Programme

MONDAY, September 20, 2021

PRESENTATIONS OF SPONSORS

12:30-13:00 Matthew Borkowski
Aurora Scientific
Three Techniques, One System: How to Effectively Characterize Complete Muscle Function

13:00-13:30 Michiel Helmes
Ion Optix
Beating the myocyte: Increased throughput enables novel experimental design

13:30-14:45 **Poster session 1**

CONFERENCE OPENING

14:45-15:00 **Wolfgang A. Linke** and **Jolanta Rędowicz**
Welcome address

BREAKING NEWS ON THE SKELETAL MUSCLE SARCOMERE — Chair: **Kristina Djinovic-Carugo**

15:00-15:30 Keynote speaker: **Stefan Raunser**
Max Planck Institute of Molecular Physiology, Dortmund, Germany
Cryo-ET reveals sarcomere structures at molecular resolution

15:30-15:45 Invited speaker: **Frank Schnorrer**
Aix Marseille University, IBDM, Marseille, France
The molecular elasticity of insect titin determines sarcomere and thick filament length

15:45-16:00 Special speaker: **Kristina Djinovic-Carugo**
University of Vienna, Austria
Order from disorder in the sarcomere: FATZ forms fuzzy complex and phase-separated condensates with α-actinin

16:00-16:10 **Marco Linari**
University of Florence, Florence, Italy
The molecular basis of the difference in slow-fast muscle efficiency

16:10-16:20 **Anthony Hessel**
YOUNG RESEARCHER *University of Muenster, Muenster, Germany*
Graded titin cleavage reduces residual force enhancement and lengthens optimal sarcomere length in permeabilized skeletal fibers

16:20-16:30 **Jennifer Fleming**
University of Konstanz, Konstanz, Germany
The emerging role of titin's N2A element in muscle mechanical performance

16:30-16:45 TIME FOR COFFEE

MYOPATHIES: MECHANISMS, MODELING, MEDICATION — Chair: **Coen Ottenheijm**

16:45-17:10 Keynote speaker 1: **Carsten Bonnemann**
National Institute of Neurological Disorders and Stroke, NIH, Bethesda, USA
Disorders of the Sarcomere - New Phenotypes, Genes, and Mechanisms

17:10-17:30 Keynote speaker 2: **Henk Granzier**
University of Arizona College of Medicine, Tucson
USARole of Nebulin in Health and Disease

17:30-17:50 Keynote speaker 3: **Jim Dowling**
Hospital for Sick Children and University of Toronto, Canada
Molecular mechanisms of centronuclear myopathies

17:50-17:58 **Danuta Szczesna-Cordary**
University of Miami, Miami, USA
The role of the super relaxed state of myosin in the manifestation of diverse cardiomyopathy phenotypes associated with the MYL3 gene

17:58-18:06 **Chiara Consorti**
YOUNG RESEARCHER
University of Padua, Padua, Italy
Zebrafish as a model for dissecting the in vivo roles of Collagen VI

18:06-18:14 **Ricardo Galli**
YOUNG RESEARCHER
Amsterdam University Medical Centers, Amsterdam, Netherlands
Kbtbd13R408C-knockin mouse model displays muscle-type dependent onset and progression of NEM6 myopathy

18:15-18:30 TIME FOR COFFEE

CARDIAC/SMOOTH MUSCLE ULTRASTRUCTURE AND REGULATION **Chair: Steve Marston**

18:30-19:00 Keynote speaker: **Vitold Galkin**
Eastern Virginia Medical School, Norfolk, USA
Regulation of the thin filament - novel paradigms revealed by cryo electron microscopy

19:00-19:20 Invited speaker: **Charlotte Scarff**
University of Leeds, Leeds, UK
The interacting-heads motif of myosin: from smooth muscle to cardiac

19:20-19:40 **Danielle Paul**
University of Bristol, Bristol, UK
In situ cryo-electron tomography reveals filamentous actin with the microtubule lumen

19:40-19:50 **Ivanka Sevrieva**
King's College London, London, UK
Phosphorylation-dependent interactions of myosin binding protein-C and troponin coordinate the myofilament response to PKA

19:50-20:00 **Pradeep Luther**
Imperial College London, London, UK
Cryo-electron tomography of intact cardiac muscle reveals myosin binding protein-C linking myosin and actin filaments

20:00-21:00 **Poster session 2**

TUESDAY, September 21, 2021

13:30-15:00 **Poster session 3**

NOVEL INSIGHT INTO PATHOMECHANISMS OF CARDIOMYOPATHY AND HEART FAILURE **Chair: Pieter de Tombe**

15:00-15:25 Keynote speaker: **James Ware**
Imperial College London, London, UK
Understanding the genetic architecture of cardiomyopathies: challenges & opportunities

15:25-15:45 Invited speaker: **Ines Falcao-Pires**
University of Porto, Porto, Portugal
Heart failure with preserved ejection fraction – are we seeing the light at the end of the tunnel?

15:45-16:05 Special speaker: **Wolfgang A. Linke**
University of Munster, Munster, Germany
Pathomechanisms underlying cardiomyopathy due to TTN truncation

16:05-16:20 Invited speaker: **Cecilia Ferrantini**
University of Florence, Florence, Italy
Precision medicine in HCM: evidence for mutation-specific pathomechanisms and negative inotropic drug efficacy

16:20-16:30 **Urszula Florczyk**
Jagiellonian University, Cracow, Poland
The role of miR-378a in development of cardiomyopathy of dystrophic mice

16:30-16:45 TIME FOR COFFEE

CYTOSKELETON AND (MECHANO)SIGNALING — Chair: **Elisabeth Ehler**

16:45-17:15 Keynote speaker: **Benjamin Prosser**
University of Pennsylvania Perelman School of Medicine, Philadelphia, USA
Microtubules orchestrate local translation to enable cardiac growth

17:15-17:30 **Michaela Yuen**
Amsterdam University Medical Centers, Amsterdam, the Netherlands
Localisation and mobility of nebulin in adult muscle sarcomeres

17: 30-17:45 **Marta Gawor**
YOUNG RESEARCHER *Nencki Institute of Experimental Biology, Warsaw, Poland*
Novel role of drebrin in the AChR clustering and the organization of cytoskeleton at postsynaptic machinery

17:45-18:00 **Andrew Coleman**
YOUNG RESEARCHER *University of Maryland School of Medicine, Baltimore, USA*
Tubulin acetylation increases cytoskeletal stiffness to regulate mechanotransduction in striated muscle

18:00-18:15 **Olga Mayans**
University of Konstanz, Konstanz, Germany
Stretch-induced unfolding of titin-like kinases as in vivo mechanosensing mechanism

18:15-18:30 TIME FOR COFFEE

MUSCLE AND BEYOND — Chair: **Jolanta Rędowicz**

18:30-18:55 Keynote speaker: **Ruediger Rudolf**
IZN, University of Heidelberg, Germany
Acetylcholine Receptor Turnover at the Neuromuscular Junction: Role of cAMP-Microdomain and Sympathetic Regulation

18:55-19:15 Invited speaker: **Urszula Sławińska**
Nencki Institute of Experimental Biology, Warsaw, Poland
Skeletal muscle phenotype and function conducted by CNS orchestra. In tribute to Gerta Vrbova

19:15-19:35 Invited speaker: **Laszlo Csernoch**
University of Debrecen, Debrecen, Hungary
Disrupted T-tubular network accounts for asynchronous Ca^{2+} release in MTM1 deficient skeletal muscle

19:35-19:43 **Lisa Gambarotto**
YOUNG RESEARCHER *University of Padua, Padua, Italy*
AMBRA1 deficiency impairs mitophagy in skeletal muscle

19:43-19:51 **Agnese de Mario**
University of Padua, Padua, Italy
The positive modulation of the Mitochondrial Calcium Uniporter activity by Amorolfine sustains skeletal muscle trophism

19:51-19:59 **Paulina Podkalicka**
YOUNG RESEARCHER
Jagiellonian University, Cracow, Poland
MicroRNA-378 loss mediates systemic metabolic changes in the mdx model of Duchenne muscular dystrophy

20:00-21:00 **Poster session 4**

WEDNESDAY, September 22, 2021

13:30-14:00 **General assembly meeting: Wolfgang A. Linke**

MUSCLE IN A DISH: NEW MODELS FOR THE STUDY OF MUSCLE FUNCTION AND DYSFUNCTION

Chair: Wolfgang A. Linke

14:00-14:20 Keynote speaker: **Sasha Mendjan**
Institute of Molecular Biotechnology AAS, Vienna, Austria
Cardioids reveal self-organizing principles of human cardiogenesis

14:20-14:40 Invited speaker: **Milena Bellin**
Leiden University Medical Center, Netherlands
Human-iPSC-derived three cell-type cardiac microtissues promote post-natal cardiomyocyte maturation and reveal contributions to heart disease

14:40-14:55 Invited speaker: **Lukas Cyganek**
University of Goettingen, Germany
Preclinical testing of personalized CRISPR treatments for Noonan syndrome

14:55-15:05 **Pasquale Bianco**
University of Florence, Sesto Fiorentino, Italy
The atrial cardiac myosin is a weaker force and power generator than the ventricular isoform as measured by the synthetic myosin nanomachine

15:05-15:15 **Judith Montag**
Hannover Medical School, Hannover, Germany
Burst-like transcription of MYH7 in Hypertrophic Cardiomyopathy patients is mimicked in patient-derived hPSC-CMs

15:15-15:25 **Jessika Iwanski**
YOUNG RESEARCHER
University of Arizona, Tucson, USA
Modeling patient-specific Lmod2 dilated cardiomyopathy using human iPSC-derived cardiomyocytes

15:30-15:45 TIME FOR COFFEE

2nd Jean Hanson Keynote Lecture at the Virtual European Muscle Conference 2021

Introduction: Elisabeth Ehler, Kings College London, UK

15:45-16:30 **Eric N. Olson**
UT Southwestern Medical Center, Dallas, USA
Muscle Making and Muscle Breaking: From Developmental Mechanisms to Therapeutics for Muscle Disease

16:30-16:45 TIME FOR COFFEE

Regulation and kinetics of thick-thin filament interaction

Chair: Joanna Moraczewska

16:45-17:07 Keynote speaker: **Luca Fusi**
Kings College London, UK
The interaction between thin and thick filament-based regulation in skeletal and cardiac muscle

17:07-17:29 Keynote speaker: **Massimo Reconditi**
University of Florence, Italy
Thick filament regulation in cardiac muscle

17:29-17:45 Invited speaker: **Michael J. Previs**
University of Vermont, Burlington, USA
A new view of cardiac thick filament structure: It's all mixed up

17:45-17:55 **Matthew Doran**
YOUNG RESEARCHER *Boston University School of Medicine, Boston, USA*
The Structure and Function of the Human Cardiac Actomyosin Complex

17:55-18:05 **Bellinda Bullard**
University of York, York, UK
Tropomyosin and stretch activation of insect flight muscle

18:54-18:15 **Venus Joumaa**
University of Calgary, Calgary, Canada
Evidence for changes in cross-bridge cycling kinetics at steady-state following active shortening but not active stretching.

18:15-18:30 TIME FOR COFFEE

SMALL MOLECULE MODULATORS OF SARCOMERE PROTEIN FUNCTION — Chair: **Chiara Tesi**

18:30-18:53 Keynote speaker: **Suman Nag**
MyoKardia/Bristol Myers Squibb, San Francisco, USA
Modulating the cardiac sarcomere to develop precision medicine for different classes of heart diseases - the story of mavacamten and danicamtiv

18:53-19:16 Keynote speaker: **Anne Houdusse**
Institut Curie, Paris, France
Muscle diseases: from molecular mechanisms to new treatments

19:16-19:31 Invited speaker: **Thomas Kampourakis**
King's College London, London, UK
High throughput screening for cardiac troponin activators and inhibitors

19:31-19:38 **Leonardo Nogara**
University of Padua, Padua, Italy
Piperine-derived compounds modulate in both directions skinned fibers resting ATPase activity

19:38-19:47 **Pierre-Edouard Grillet**
YOUNG RESEARCHER *Montpellier University, Montpellier, France*
Diastolic dysfunction in a rat COPD model: impact of ß-adrenergic blockade on cardiac features

19:47-19:54 **Andras Malnasi-Csizmadia**
Lorand Etvos University and Motorpharma, Ltd., Budapest, Hungary
MPH-220, a first-in-class anti-spastic drug candidate efficiently relaxes spastic muscles by direct skeletal muscle inhibition

19:54-20:01 **Beatrice Scellini**
University of Florence, Florence, Italy
Omecamtiv Mecarbil modulation of force generation in human cardiac muscle

CONFERENCE CLOSING

20:05-20:15 **Wolfgang A. Linke** and **Jolanta Rędowicz**
Concluding remarks