

# The Saltin Symposium

## Exercise and Integrative Physiology

June 2-4, 2015

*Venue:*

*Rigshospitalet, Auditorium I  
Copenhagen, Denmark*

Arranged by

CENTER FOR  
PHYSICAL

ACTIVITY RESEARCH



### **Scientific Committee**

Henriette Pilegaard, Henrik Klitgaard and Robert Boushel

### **Organizing Committee**

Bente K. Pedersen, Emil Holm Toft,  
Inge Holm, Marie Kvistgaard and Morten Zacho

### **Consultancy Committee**

Gisela Sjøgaard, Gunnar Grimby, Mark Hargreaves,  
Michael Joyner, Peter Schantz and Ylva Hellsten

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# PROGRAM

## June 2

15:00-15:10 **Opening:** *Jannik Hilsted, Medical Director of Rigshospitalet*

### **The History - Continuing in the Steps of Krogh and Lindhard**

15:10-15:25 *Chairs: Birgitta Essén-Gustavsson & Jan Henriksson*

15:25-15:40 Formative Years in Stockholm  
*Peter Schantz*

15:40-15:55 The August Krogh Institute: Capillaries and beyond  
*Gisela Sjøgaard*

### **The Copenhagen Muscle Research Centre**

15:55-16:10 *Chairs: Jerome Dempsey & Peter B. Raven*

16:10-16:25 How to Get Value for Money  
*Peder Olesen Larsen*

16:25-16:40 The Activity  
*Michael Kjær*

16:40-16:55 The International Standing  
*Michael Joyner*

17:00-19:00 **Reception (Rigshospitalet)**  
*Saltin Salutations and Mingling*

## June 3

### **Muscle Physiology**

08:30-08:45 *Chairs: Erik A. Richter & Stephen Harridge*

08:45-09:00 Overview of Muscle and Exercise  
*Mark Hargreaves*

09:00-09:15 Muscle Fibre Type and Beyond  
*Stefano Schiaffino*

09:15-09:30 New Insights on Muscle Metabolic Profile  
*Niels Ørtenblad*

09:30-09:45 Muscle Adaptation to Exercise: New Paradigms  
*Frank Booth*

09:45-10:15 Discussion

10:15-10:45 **Coffee/Tea**

### **Signalling Events and Muscle Metabolism**

10:45-11:00 Chairs: *Henriette Pilegaard and Terry Graham*

11:00-11:15 Imaging: Muscle Structure and Substrates  
*Clara Prats*

11:15-11:30 Substrate Choice  
*Bente Kiens*

11:30-11:45 Exercise and Muscle Signal Transduction  
*Jørgen Wojtaszewski*

11:45-12:00 Mitochondrial Function and Exercise  
*Darrell Neuffer*

12:00-12:15 Oxidative Capacity vs. Exercise  $VO_2$   
*Eva Blomstrand*

12:15-12:45 Discussion

12:45-13:30 **Lunch**

### **Cardiovascular Physiology I**

13:30-13:45 Chairs: *Niels H. Secher and Jere Mitchell*

13:45-14:00 Muscle Vasodilator Mechanisms  
*Ylva Hellsten*

14:00-14:15 The Role of ATP in Muscle Blood Flow  
*Jose Gonzalez-Alonso*

14:15-14:30 Central and Regional Blood Flow Regulation  
*Jose A.L. Calbet*

14:30-14:45 Reflex Control of Circulation  
*Paul Fadel*

14:45-15:15 Discussion

15:15-15:45 **Coffee/Tea**

## Cardiovascular Physiology II

- 15:45-16:00 *Chairs: Jaya Rosenmeier & Susanne Vissing*
- 16:00-16:15 Cardiovascular Regulation with Aging and Training  
*Stefan Mortensen*
- 16:15-16:30 Physiological adaptations to exercise training  
*Carsten Lundby*
- 16:30-16:45 Cardiovascular Regulation in the Arctic  
*Robert Boushel*
- 16:45-17:00 Cardiovascular Regulation After Bedrest and Spaceflight  
*Benjamin Levine*
- 17:00-17:15 Modeling O<sub>2</sub> Transport as an Integrated System: Effect of Training  
*Peter D. Wagner*
- 17:15-17:45 Discussion

**19:30 Dinner in Tivoli Gardens (*separate registration needed*)  
Celebrating Bengt's 80<sup>th</sup> Birthday**  
*Chairs: Henrik Klitgaard & Susanne Vissing*

## June 4

**08:50** **All participants must be seated**  
09:00 Arrival of HRH Crown Prince Frederik

### **Saltin Award Ceremony**

- 09:00-09:05 *Chair: Henrik Klitgaard*
- 09:05-09:15 **Saltin Award Presentation**  
*HRH Crown Prince Frederik*
- 09:15-09:30 Awardee Talk: Human responses to altitude  
*Christoph Siebenmann*

### **Applied and Comparative Physiology**

- 09:30-09:45 *Chairs: Eva Jansson and Gerrit van Hall*
- 09:45-10:00 Sport Physiology  
*Jens Bangsbo*

- 10:00-10:15 Olympic Scientific Activity  
*Stefan Lindeberg*
- 10:15-10:30 Elite Skiers  
*Hans Christer Holmberg*
- 10:30-11:00 The Kenyan Runners  
*Henrik Larsen & William Sheel*
- 11:00-11:15 Mitochondrial Fitness in the Cold:  
From Inuit Hunters to High-Altitude Climbers  
*Erich Gnaiger*
- 11:15-11:30 Discussion
- 11:30-12:00 ***Coffee/ Tea and Sandwiches***

### **Exercise and Health**

- 12:00-12:15 Chair: *Bente Klarlund Pedersen*
- 12:15-12:30 The 'Saltin-Grimby Physical Activity Level Scale' and its  
Application to Health Research  
*Gunnar Grimby*
- 12:30-12:45 Muscle, Exercise and Health throughout the Lifespan  
*Mark Tarnopolsky*
- 12:45-13:00 Discussion
- 13:00 **Closing**: Inge Holm

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## **Symposium Chairs, Lecturers and Organizers**

### **Benjamin Levine**

Director, Institute for Exercise and Environmental Medicine, S. Finley Ewing Jr.  
Chair for Wellness at Texas Health Presbyterian Dallas, Harry S. Moss Heart  
Chair for Cardiovascular Research, Professor of Medicine and Cardiology,  
Distinguished Professorship in Exercise Science, University of Texas  
Southwestern Medical Center at Dallas, USA

### **Bente Kiens**

Professor, Section of Molecular Physiology, Department of Nutrition , Exercise  
and Sports, University of Copenhagen, Denmark

**Bente Klarlund Pedersen**

Professor, Director, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

**Birgitta Essén-Gustavsson**

Associate Professor, Swedish University of Agricultural Sciences, Department of Large Animal Clinical Sciences, Uppsala, Sweden

**Carsten Lundby**

Professor, Center for Integrative Human Physiology (ZIHP), University of Zurich, Institute of Physiology, Zürich, Switzerland

**Christoph Siebenmann (Saltin Awardee)**

Postdoc Researcher, Royal Institute of Technology, School of Technology and Health, Stockholm, Sweden

**Clara Prats**

Associate Professor, Systems Biology Research Section, Panum Institute, University of Copenhagen, Denmark

**Darrell Neuffer**

Director, Professor, Departments of Physiology and Kinesiology, East Carolina Diabetes and Obesity Institute, USA

**Emil Holm Toft**

Administrative student assistant; BA of Laws, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

**Erich Gnaiger**

Professor, Daniel Swarovski Research Laboratory, Department of Visceral, Transplant and Thoracic Surgery, Medical University of Innsbruck and CEO, Oroboros Instruments Corp., Austria

**Erik A. Richter**

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**Eva Jansson**

Professor, Division of Clinical Physiology, Department of Laboratory Medicine, Karolinska Institute, Stockholm, Sweden

**Frank Booth**

Professor, Departments of Biomedical Sciences, Medical Pharmacology and Physiology, and Nutrition and Exercise Physiology, Dalton Cardiovascular Institute, University of Missouri, USA

**Gerrit van Hall**

Professor, Department of Endocrinology, Rigshospitalet and University of Copenhagen, Denmark

**Gisela Sjøgaard**

Professor, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark, Denmark

**Gunnar Grimby**

Professor Emeritus, Department of Neuroscience and Physiology, Section of Clinical Neuroscience and Rehabilitation, University of Gothenburg, Sweden

**Hans-Christer Holmberg**

Professor, HLV, Mid Sweden University, Sweden

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**Henrik Klitgaard**

Henrik Klitgaard, PhD, Vice President, Neuroscience Therapeutic Area, UCB Pharma, Belgium

**Henrik B. Larsen**

Cand. Scient., Copenhagen, Denmark

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Professor Emeritus, Department of Physiology and Pharmacology, Karolinska Institute, Stockholm, Sweden

**Jaya Birgitte Rosenmeier**

Chief Consultant Cardiologist Ph.d., Department of Cardiology, Bispebjerg Hospital, Copenhagen, Denmark

**Jens Bangsbo**

Professor, Deputy Head of Research, Integrative Physiology, Department of Nutrition, Exercise and Sport, University of Copenhagen, Denmark

**Jere H. Mitchell**

Clinical Professor, Internal Medicine, Physiology, Biomedical Engineering, UT Southwestern Medical Center, Dallas, USA

**Jerome Dempsey**

John R. Sutton Professor Emeritus of Population Health Sciences Director, John Ranking Laboratory of Pulmonary Medicine, School of Medicine and Public Health, University of Wisconsin-Madison, USA

**José A.L. Calbet**

Professor of Exercise Physiology, Dept. of Physical Education, University of Las Palmas de Gran Canaria, Spain

**José Gonzalez-Alonso**

Professor of Exercise and Cardiovascular Physiology, Director of Centre for Sports Medicine and Human Performance, Brunel University London, United Kingdom

**Jørgen Wojtaszewski**

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**Marie Kvistgaard**

Symposium secretary, Centre for Physical Activity Research (CFAS) and Centre of Inflammation and Metabolism (CIM), Rigshospitalet and University of Copenhagen, Denmark

**Mark Hargreaves**

Pro Vice-Chancellor of Melbourne Research, Professor of Physiology, Dept. of Physiology, Faculty of Medicine Dentistry and Health Sciences, University of Melbourne, Australia

**Mark Tarnopolsky**

Professor, Department of Pediatrics and Department of Medicine, McMaster University, Hamilton, Ontario, Canada

**Michael Joyner**

Professor, The Human and Integrative Physiology and Clinical Pharmacology laboratories, Mayo Clinic, Rochester, USA

**Michael Kjær**

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**Niels H. Secher**

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**Niels Ørtenblad**

Associate Professor, Head of Research Unit, Institute of Sports Science and Clinical Biomechanics, Muscle Physiology and Biomechanics, University of Southern Denmark, Denmark

**Paul Fadel**

Associate Professor, Medical Pharmacology and Physiology, School of Medicine, University of Missouri Health System, USA

**Peder Olesen Larsen**

Head of the Board and Director of the Danish National Research Foundation from 1991 to 1998, University of Copenhagen, Denmark

**Peter B. Raven**

Professor, Department of Integrative Physiology and Anatomy, University of North Texas Health Science Center, Fort Worth, USA

**Peter Schantz**

Professor in Human Biology, GIH, Swedish School of Sport and Health Sciences, Stockholm, Sweden

**Peter D. Wagner**

Distinguished Professor of Medicine and Bioengineering, Division of Physiology, Department of Medicine, University of California, San Diego, USA

**Robert Boushel**

Professor, GIH, Swedish School of Sport and Health Sciences, Stockholm, Sweden

**Stefan Lindeberg**

President of the Swedish Olympic Committee (SOK) Executive Board, Stockholm, Sweden

**Stefan Mortensen**

Associate Professor, Cardiovascular and Renal Research, University of Southern Denmark, Denmark

**Stefano Schiaffino**

Professor Emeritus, University of Padova, and Vice President, Venetian Institute of Molecular Medicine (VIMM), Italy

**Stephen Harridge**

Professor of Human and Applied Physiology, Director at Centre of Human and Aerospace Physiological Sciences, Faculty of Life Sciences and Medicine, Kings College London, United Kingdom

**Susanne Vissing**

MD, DMSc, Medical Specialist, Dermatology, Copenhagen, Denmark

**Terry Graham**

Professor Emeritus, Human Health and Nutritional Sciences, University of Guelph, Canada

**William Sheel**

Professor, University of British Columbia, Vancouver, Canada

**Ylva Hellsten**

Professor, Integrated Physiology, Department of Nutrition, Exercise and Sport, University of Copenhagen, Denmark

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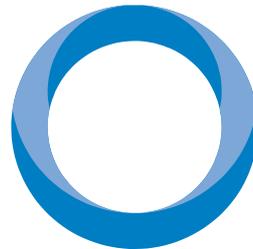
**The Saltin Symposium  
'Exercise and Integrative Physiology'**

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