

# RACMEM-2017

## Fribourg, Switzerland

The RACMEM-2017 keynote lectures and proceedings of the body composition satellite meeting have been published in a special issue of the *European Journal of Clinical Nutrition*: <https://www.nature.com/ejcn/volumes/72/issues/5>

### Local Organising Committee:

Abdul Dulloo, Jennifer Miles-Chan, Jean-Pierre Montani, Yves Schutz

### Scientific Program

#### Thursday 19th October

10:00 – 18:00      9th Fribourg Obesity Research Conference (FORC-2017)  
[\(click here to view program\)](#)  
(Proceedings published in special issue of *Obesity Reviews* 2018 Dec;19 Suppl 1)

#### Friday 20th October

09:00 – 18:00      Pre-Meeting Satellites [\(click below to view programs\)](#):

**Satellite I:** [Doubly-Labeled Water: Introduction & Current Issues](#)

**Satellite II:** [Novel concepts in the relationships between Body composition, Energy Balance Regulation & Cardiometabolic Health](#)

18:15 – 21:00      RACMEM Welcome Reception

#### Saturday 21st October

08:15 – 08:30      Welcome to RACMEM-2017  
*Abdul Dulloo*  
Department of Medicine/Physiology, University of Fribourg, Switzerland

08:30 – 09:00      Keynote Lecture 1:  
**The contribution of Swiss scientists to the assessment of energy metabolism**  
*Jean-Pierre Montani*  
Department of Medicine/Physiology, University of Fribourg, Switzerland

09:00 – 12:30      Morning Session 1:  
**Calorimetry Measurements & Data Adjustments**  
**1a: Symposium Lectures** - Chair: *Raffaella Crescenzo* (Naples, Italy)

- Man and machine variability in calorimetric studies  
*Guy Plasqui*  
Human Biology, Nutrition & Translational Research in Metabolism, Maastricht University, Netherlands
- An evaluation of 'A guide to analysis of mouse energy metabolism'  
*Martin Klingenspor*  
Research Center for Nutrition and Food Sciences, Technische Universität München, Germany
- Cost of thermal regulation affects various components of energy expenditure in mice at vivarium temperature  
*Patrick Even*  
AgroParisTech, INRA, University Paris-Saclay, France

09:00 – 10:30

- Energy flux and susceptibility to obesity in humans: data adjustment controversies  
*Dale Schoeller*  
Department of Nutritional Sciences, University of Wisconsin-Madison, USA

10:30 – 11:00

Coffee/tea break, combined with sponsor exhibition

11:00 – 12:30

**1b: Short Oral Communications** - Chair: *Peter Murgatroyd* (Cambridge, UK)

- Determining the Accuracy and Reliability of Indirect Calorimeters Utilizing the Methanol Combustion Technique  
*Jamie Cooper*  
Department of Foods & Nutrition, University of Georgia, GA, USA
- Influence of a protocol to correct metabolic cart data on resting energy expenditure and respiratory quotient in humans  
*Jose E. Galgani*  
Pontificia Universidad Católica de Chile, Chile
- Metabolic flexibility as a biomarker of body weight gain  
*Kristina Bardova*  
Department of Adipose Tissue Biology, Institute of Physiology of the Czech Academy of Sciences, Prague, Czech Republic
- Re-evaluation of data handling rules to increase the accuracy and precision of sleeping energy expenditure  
*Jasper Most*  
Pennington Biomedical Research Center, Baton Rouge, Louisiana, USA
- Building a room calorimeter by mistake: a New Zealand first  
*Terry O'Donnell*  
Centre for Translational Physiology, University of Otago, Wellington, New Zealand

12:30 – 14:00

**Lunch / Poster Session / Sponsor exhibition**

14:00 – 17:00

**Afternoon Session 2:**

**Physical Activity, Sedentarity & Sleep**

**2a: Symposium Lectures** - Chair: *Luís B. Sardinha* (Lisbon, Portugal)

14:00 – 15:30

- Posture allocation & sedentary threshold  
*Jennifer Miles-Chan*  
School of Biological Sciences, University of Auckland, New Zealand
- Sit-stand movement assessment & breaking sitting time  
*Yoichi Hatamoto*  
The Fukuoka University Institute of Physical Activity, Fukuoka, Japan
- Use of nutrient tracers to link activity energy expenditure and fat oxidation  
*Audrey Bergouignan*  
Institut Pluridisciplinaire Hubert CURIEN, University of Strasbourg, France
- Exploring approaches for phenotyping human variability in movement-associated thermogenesis  
*Abdul Dulloo*  
Department of Medicine/Physiology, University of Fribourg, Switzerland

15:30 – 16:00

Coffee/tea break, combined with sponsor exhibition

16:00 – 17:00

**2b: Short Oral Communications** - Chair: *Bengt Kayser* (Lausanne, Switzerland)

- Standardising the energy cost of walking  
*Nuala Byrne*  
School of Health Sciences, Faculty of Health, University of Tasmania, Australia

- Use of the ActiGraph GT9X Inertial Measurement Unit to Predict Energy Expenditure Using Artificial Neural Networks  
*Samuel LaMunion*  
Department of Kinesiology, Recreation, and Sport Studies, The University of Tennessee Knoxville, USA
- Effects of a high fat diet followed by an exercise on substrate oxidation and glycemic and ketone body controls in non-obese patients with DMII  
*Takanori Fukushima*  
University of Electro-Communications, Tokyo, Japan
- Metabolic Adaptations and the Limits of Sustained Energy Expenditure in Humans  
*Herman Pontzer*  
Department of Anthropology, Hunter College, City University of New York, USA

17:00 – 17:40

**Points-of-View - Chair: Lilian de Jonge (Fairfax, Virginia, USA)**  
**Defining Metabolic (In)Flexibility - amid literature confusions**

One View: *Paul Maclean*  
University of Colorado Denver, USA

Another View: *Eric Ravussin*  
Pennington Biomedical Research Center, Baton Rouge, Louisiana, USA

17:40 – 18:25

**The RACMEM Lectures**

**Part I: A tribute to John Garrow**  
**From his "Energy Balance & Obesity" .....**  
*Yves Schutz*  
Eurobesitas, Vevey, Switzerland

**....to his "Treat Obesity Seriously"**  
*Steve Heymsfield*  
Pennington Biomedical Research Center, Baton Rouge, USA

**Part II: History of RACMEM**  
*Ed Melanson and Paul Maclean*  
University of Colorado Denver, USA

18:30 – 21:30

**Gala Dinner (Soirée Fondue)**

**Sunday 22nd October**

08:15 – 08:20

Welcome back

08:20 – 09:00

**Keynote Lecture 2 - Chair: John Blundell (Leeds, UK)**  
**Normalizing Energy Expenditure across the Life Course: Challenges & Hopes**

*Manfred Müller*  
Institute of Human Nutrition and Food Science, University of Kiel, Germany

09:00 – 12:30

**Morning Session 3:**  
**Energy Metabolism Measurements over 24 hours or more**  
**3a: Symposium Lectures - Chair: Marleen van Baak (Maastricht, Netherlands)**

- Coupling 24h chamber calorimetry with continuous glucose monitoring  
*Anja Bomy-Westphal*  
Institute of Nutritional Medicine, University of Hohenheim, Germany

09:00 – 10:30

- Effects of timing of exercise or meals on energy metabolism  
*Kumpei Tokuyama*  
Faculty of Health and Sport Sciences, University of Tsukuba, Japan

- Challenges in measuring energy balance in the mother and her baby  
*Leanne Redman*  
Pennington Biomedical Research Center, Baton Rouge, USA
- Assessing maternal-offspring energy transfer: lessons from farm animal research  
*Korinna Huber*  
Institute of Animal Science, University of Hohenheim, Germany

10:30 – 11:00

*Coffee/tea break, combined with sponsor exhibition*

11:00 – 12:30

**3b: Short Oral Communications** - Chair: James Stubbs (Leeds, UK)

- Low 24-hour core body temperature as a thrifty metabolic trait contributing to the enhanced efficiency of fat deposition during weight regain  
*Julie Calonne*  
Department of Medicine / Physiology, University of Fribourg, Switzerland
- Energy expenditure, substrate oxidation, and satiety effects during a controlled 48-h high protein- vs. medium-protein diet, after 2 yrs on this diet - a PREVIEW respiration chamber study  
*Mathijs Drummen*  
Department of Human Biology and Movement Sciences, Maastricht University, Maastricht, The Netherlands
- Metabolic flexibility in normal weight and overweight Asians  
*Stefan Camps*  
Clinical Nutrition Research Centre (CNRC), Singapore Institute for Clinical Sciences (SICS), Agency for Science, Technology and Research (A\*STAR) and National University Health System, Centre for Translational Medicine, Singapore.
- Post-Breakfast Respiratory Quotient Kinetics to define Metabolic Flexibility  
*Elvis A. Carnero*  
Translational Research Institute for Diabetes and Metabolism, Florida Hospital-Sanford, Burnham Prebys Medical Discovery Institute, USA
- Validation of the doubly labeled water method using integrated cavity output spectroscopy and isotope mass spectrometry against whole-room indirect calorimetry  
*Edward L. Melanson*  
Division of Endocrinology, Metabolism, and Diabetes & Division of Geriatric Medicine, Department of Medicine, University of Colorado Anschutz Medical Campus, Colorado, USA
- Shake-Spear17: metabolic adaptations due to extreme environment and physical activity  
*John Hattersley*  
University Hospitals Coventry and Warwickshire, University of Warwick, University of Coventry, UK

12:30 – 14:00

**Lunch / Poster Session / Sponsor exhibition**

14:00 – 17:30

**Afternoon Session 4:**

**Organ/Tissue Thermogenesis & Fuel Substrate Trafficking**

**4a: Symposium Lectures** - Chair: José Galgani (Santiago, Chile)

- Towards assessing the quantitative contribution of brown fat to thermogenesis in humans  
*Kong Chen*  
Diabetes, Endocrinology, and Obesity Branch, NIDDK, NIH, USA
- Challenges in delineating shivering & non-shivering thermogenesis during cold acclimation  
*François Haman*  
Faculty of Health Sciences, University of Ottawa, Canada

14:00 – 15:40

- State-of-the-art measurements of brown adipose tissue  
*Tim Nagy*  
Department of Nutrition Sciences, University of Alabama-Birmingham, USA
- Fuel substrate trafficking in brown adipose tissue thermogenesis  
*Denis Richard*  
Department of Medicine, Université Laval, Canada
- Shivering and pre-shivering thermogenesis: what do they really represent?  
*Esa Hohtola*  
Department of Biology, University of Oulu, Finland

15:45 – 16:15

Coffee/tea break, combined with sponsor exhibition

16:15 – 17:30

**4b: Short Oral Communications** - Chair: *Jan Nedergaard* (Stockholm, Sweden)

- The Effect of Skeletal Muscle Lipoprotein Lipase Overexpression on Obesity, Weight Loss Maintenance, and Weight Regain  
*David M Presby*  
Department of Medicine, Divisions of Endocrinology, Metabolism, and Diabetes. University of Colorado School of Medicine, USA
- Analysis of interscapular brown fat metabolism by combining Indirect Calorimetry with Multispectral Optoacoustic Tomography  
*Monja Willershäuser*  
Technical University of Munich, TUM School of Life Sciences, Freising, Germany
- Energy expenditure of human cervico-thoracic brown fat and muscles during mild cold stress: A positron emission tomography study  
*Mueez u Din*  
Turku PET Centre, Turku University Hospital, University of Turku, Turku, Finland
- The influence of propranolol on resting energy expenditure and other physiological parameters in cold and warm condition  
*Robert J. Brychta*  
Diabetes, Endocrinology, and Obesity Branch, NIDDK, NIH, Bethesda, MD, USA
- Investigating cold-induced thermogenesis in humans: Recognizing the importance of using an integrative approach  
*Denis Blondin*  
Department of medicine, Centre de Recherche du Centre Hospitalier Universitaire de Sherbrooke, Université de Sherbrooke, Canada

17:30 – 18:15

**Debate** - Moderator: *Jan Nedergaard* (Stockholm, Sweden)

**Switching on brown adipose tissue to cure obesity: will it work?**

- Yes:** *Wouter van Marken Lichtenbelt*  
NUTRIM School for Nutrition & Translational Research in Metabolism, Maastricht University, Netherlands
- No:** *John Speakman*  
Institute of Biological & Environmental Sciences, University of Aberdeen, UK; and Institute of Genetics & Developmental Biology, Chinese Academy of Sciences, Beijing, China.

18:15 – 18:30

**Closing Remarks**

*Abdul Dulloo*  
Department of Medicine/Physiology, University of Fribourg, Switzerland