

# RACMEM-2008

## Denver, USA

### Local Organising Committee:

*Edward Melanson, Paul MacLean, Robert Eckel, James Hill, Dalan Jensen, Lilian de Jonge, Klaas Westerterp*

### Scientific Program

#### Tuesday 5th February

12:45 – 13:00

#### Opening Remarks

*Edward Melanson & Paul MacLean*

13:00 – 13:55

#### Opening Debate - Moderator: Edward Melanson

##### **Impact of Adaptive Thermogenesis**

*Angelo Tremblay vs. Dale Schoeller*

14:00 – 15:30

#### Breakout 1 (concurrent)

##### **Clinical Applications and Data Analysis**

##### Issues for Clinical Nutrition - Moderator: Ian Brown

- Measuring energy expenditure in clinical practice  
*Troy Donahoo*
- Best practices for measuring resting metabolic rate  
*Lilian de Jonge*
- Clinical use of radioactive dietary tracers  
*Janine Higgins*

##### Issues for Clinical Nutrition - Moderator: Jed Friedman

- Considerations for indirect calorimetry calculations  
*Paul MacLean*
- Innovations in body composition analysis  
*Tim Nagy*
- Examining the energy gap after weight loss  
*James Hill*

15:30 – 16:00

Coffee/tea break

16:00 – 16:50

#### Emerging Controversy - Moderator: Steve Heymsfield

##### **Relevance of Brown Fat to Human Metabolism**

*Jan Nedergaard*

17:00 – 18:00

#### Sable Travel Award Presentations - Moderator: John Lighton

- The acetate recovery factor to correct tracer derived dietary fat oxidation in humans  
*Audrey Bergouignan, Dale A Schoeller, Susanne Votruba, Chantal Simon, Stéphane Blanc*
- A novel approach for the evaluation of physical activity: recognition of human movements and assessment of their durations and intensities using a triaxial accelerometer.  
*Alberto G Bonomi, Annelies HC Goris, Bin Yin and Klaas R Westerterp*

- Insulin sensitivity, mitochondrial function and fat metabolism are related in children with burn injury, and improved with PPAR- $\alpha$  agonist treatment.  
*Melanie G Cree, Jennifer J Zwetsloot, David N Herndon, Ting Qian, Ricki Fram, Asle Aarsland, Robert R Wolfe.*
- Normal metabolic flexibility to glucose in Type-2 Diabetes after controlling for glucose disposal rate.  
*Jose Galgani, Leonie Heilbronn, Koichiro Azuma, David Kelley, Jeanine Albu, Xavier Pi-Sunyer, Steven Smith, Eric Ravussin, the Look AHEAD Adipose Research Group.*

18:00 – **Opening Reception**

### Wednesday 6th February

08:00 – 08:15 **Opening Remarks**  
*Paul MacLean*

13:00 – 13:55 **Keynote 1 - Moderator: James Hill**  
**Energy expenditure and body weight regulation**  
*Arnie Astrup*

09:15 – 09:30 Coffee/tea break

09:30 – 11:30 **Plenary 1 - Moderator: Dan Bessesen**  
**Topics in Metabolic Efficiency**

- Technical considerations for estimating metabolic efficiency  
*Michael Toth*
- Body size, energy metabolism, and lifespan  
*John Speakman*
- Weight loss, leptin, and skeletal muscle work efficiency  
*Michael Rosenbaum*

11:30 – 12:30 **Lunch, Exhibits**

12:30 – 14:00 **Breakout 2 (concurrent)**  
**Indirect Calorimeter Systems**

*Human Calorimetry Systems* - Moderator: *Lillian de Jonge*

- New developments in whole room calorimetry  
*Paul Schoffelen*
- Larger and faster responding whole-room indirect calorimeters  
*Tuong Nguyen*
- Energetics of weight gain in children  
*Nancy Butte*

*Animal Calorimetry Systems* - Moderator: *Patrick Even*

- Innovations in animal calorimetry  
*Ken Kober*
- Oxygen consumption/metabolic rate in small animals  
*John Lighton*
- Ambient temperature and energy balance  
*Mike Overton*

14:00 – 15:30 **Posters and Exhibits**

15:30 – 17:30

Plenary 2 - Moderator: Edward Melanson

**Using Stable Isotopes to Assess Metabolism**

- Isotopic approaches vs other measurements of energy expenditure  
*Klaas Westerterp*
- Applications to clinical and basic research  
*Dale Schoeller*
- Examining fuel partitioning in animals  
*Stephen Previs*

**Thursday 7th February**

08:00 – 08:15

Opening Remarks

*Edward Melanson*

08:15 – 09:15

Keynote 2 - Moderator: Robert Eckel

**Fuel Utilization and Body Weight Regulation**

*Eric Ravussin*

09:15 – 09:30

Coffee/tea break

09:30 – 11:30

Plenary 3 - Moderator: Yves Schutz

**Topics in Fuel Utilisation**

- Ingested fuels and the energetics of weight change  
*Richard Feinman*
- Assessing metabolic flexibility in human health and disease  
*Bret Goodpaster*
- Fuel trafficking in humans and animals  
*Daniel Bessesen*

11:30 – 12:30

Lunch, Exhibits

12:30 – 14:00

Breakout 3 (concurrent)

**Exercise and Physical Activity**

*Free Living Assessments in Humans* - Moderator: *Klaas Westerterp*

- Innovations in accelerometry & GPS  
*Yves Schutz*
- Processing data from accelerometer studies  
*Dave Pober*
- Validity and feasibility in the epidemiological setting  
*Soren Brage*

*Exercise and Physical Activity in Animals* - Moderator: *Mike Overton*

- APS guidelines for physical activity in animals  
*Kevin Kregel*
- Monitoring levels of physical activity in animals  
*Catherine Kotz*
- Fast-response systems for pharmaceutical and exercise studies  
*Patrick Even*

14:00 – 15:30

Free Communications (concurrent)

**Oral Abstract Presentations**

Session 1 - Moderator: Ray Browning

- Artificial Neural Network for Predicting Energy Expenditure from Actigraph Accelerometer.  
Elizabeth A Booth, Megan Rothney, Ashley Beziat, Cindy A Dorminy, Jason Rapaport, Kong Y Chen, Mac S Buchowski.
- A New Approach to Detect Short Term Changes in Human Energy Expenditure in Whole Room Indirect Calorimetry.  
Robert J Brychta, Tuong Nguyen, Megan P Rothney, Emily Schaefer, Monica C Skarulis, Kong Y. Chen.
- Different Indices of Activity Energy Expenditure Lead to Differing Interpretations of Data Among Women of African Descent.  
Amy Luke, Lara Dugas, Adebowale Adeyemo, Ramon A Durazo-Arvizu, Guichan Cao, Dale A Schoeller.
- Contribution of Sedentary, Locomotive and Lifestyle Activity in Daily Life Assessed by a Triaxial Accelerometer.  
Yoshitake Oshima, Kaori Kawaguchi, Ryosuke Doi, Kazunori Ohkawara, Yuki Hikiyama, Kazuko Ishikawa-Takata, Shigeho Tanaka, Naoyuki Ebine, Kazuo Aoki, Junichi Misumi, Izumi Tabata.
- An Error Analysis of the Doubly Labeled Water Technique.  
George D Swanson.
- Cross-Sectional Time Series Modeling to Predict 24-h Total Energy Expenditure from Heart Rate and Accelerometry.  
Issa Zakeri, Anne Adolph, Maurice Puyau, Firoz Vohra, Nancy Butte.

Session 2 - Moderator: Nicole Stob

- Computational Model of Whole-Body Human Energy Metabolism  
Kevin D Hall.
- Hyperthermia-Induced Hyperventilation Dissociates Respiratory Exchange Ratio from Respiratory Quotient.  
François Haman and Matthew White.
- The Effect of UCP1 Expression in Skeletal Muscle on Lifespan, Substrate and Energy Metabolism in Mice.  
Susanne Keipert, Yvonne Katterle, Susanne Klaus.
- Oxygen Reperfusion Damage in an Insect: A Case Study of Small Animal Respirometry.  
John RB Lighton and Pablo E Schilman.
- An Error Analysis of the Doubly Labeled Water Technique.  
George D Swanson.
- Using Modeling Techniques to Analyze the Energy Expenditure in Open-Circuit Respiration Chambers.  
Jaap van Milgen, Serge Dubois and Jean Noblet.
- Acute Effects on Metabolism and Appetite Profile of One Meal Difference in the Lower Range of Meal Frequency.  
Astrid J. Smeets and Margriet S. Westerterp-Plantenga.

15:30 – 05:45

Coffee/tea break

15:45 – 18:00

**Plenary 4 - Moderator: Troy Donahoo**

**Uncoupling, Substrate Cycling, and Tissue Metabolism**

- Connecting mitochondrial proton leak to whole body metabolism  
Mary Ellen Harper

- Substrate cycling and measuring substrate oxidation and fuel utilization  
*Abdul Dulloo*
- Measuring metabolis rates of specific tissues  
*Steven Heymsfield*

18:00 –

**Closing Remarks**