



# Environmental & Exercise Physiology Section Newsletter

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### ***1. Congratulations to the 2008 EEP Section Award winners***

**New Investigator Award:** Dr. Brad Jon Behnke - Assistant Professor in Department of Applied Physiology and Kinesiology. He received his Ph.D. from Kansas State University College of Veterinary Medicine and was a post-doctoral fellow in the Department of Kinesiology at Texas A&M University and in the Department of Exercise Physiology at West Virginia University School of Medicine. He has been a prolific scientist with numerous high impact publications regarding aging effects on oxygen delivery at the microcirculatory level, control of blood flow in chronic heart failure and diabetes, effects of increased activity on blood flow within skeletal and adipose tissues.

### Post-doctoral Awards:

**EEP Gatorade Award for Beginning Investigator:** Darren P. Casey, Mayo Clinic - "Nitric Oxide contributes to the augmented vasodilation during hypoxic exercise"

**EEP Space Biomedical Research Institute's Gravitational Physiology Award for Beginning Investigator:** Clay Pandorf, University of California – Irvine - "Differential Epigenetic Modifications of Histones at the Myosin Heavy Chain Genes"

**EEP Military Physiology Award for Beginning Investigator:** Lara DeRuisseau, Syracuse University - "Muscle contractile dysfunction and oxidative injury are observed in the soleus muscle of metallothionein deficient mice following acute spinal injury"

**EEP Recognition Awards for Beginning Investigators:**

Gary L. Pierce, University of Colorado at Boulder - "Habitual aerobic exercise is associated with reduced vascular endothelial cell oxidative stress, NADPH oxidase and NFkB in middle-aged and older humans"

Megan Nichole Hawkins, UT Southwest Medical Center - "Neuronal nitric oxide synthase (nNOS) and c-Fos expression in the nucleus tractus solitarius (NTS) of normotensive and hypertensive rats"

Pre-doctoral Awards:

**EEP Gatorade Award for Young Investigator:** Anna Katherine Leal, UT Southwest Medical Center - "Exaggeration in skeletal muscle metaboreflex activity is attenuated by increasing nitric oxide production within the brainstem of spontaneously hypertensive rats"

**EEP Space Biomedical Research Institute's Gravitational Physiology Award for Young Investigator:** Carl J. Ade, Kansas State University - "Influence of negative hydrostatic column and central fluid shift via -60° head-down tilt posture on cardiovascular performance"

**EEP Military Physiology Award for Young Investigator:** Grant H. Simmons, University of Oregon - "Cutaneous vasoconstriction during 30 minutes of progressive cold exposure is increased by hypoxia"

**EEP Recognition Awards for Young Investigators:**

Federico Formenti, University of Oxford - "A genetic disease in humans demonstrates the importance of hypoxia-inducible factor in skeletal muscle metabolism"

Anne Crecelius, Colorado State University - "Effect of combined nitric oxide and prostaglandin inhibition on hypoxic exercise hyperemia"

**2. New EEP Steering Committee Members:**



Scott Powers, Professor of Applied Physiology and Kinesiology, University of Florida, will be EEP Section Chair-Elect for the next year, and then be EEP Section Chair for three years beginning after EB10.



Susan A. Bloomfield, Professor of Health & Kinesiology at Texas A&M University, will be an EEP Environmental Physiology Councilor for the next three years, beginning after EB09.



George A. Brooks, Professor of Integrative Biology, University of California – Berkeley, will be an EEP Exercise Physiology Councilor for the next three years, beginning after EB09.

### **3. Thank You to Outgoing EEP Steering Committee Members**

EEP appreciates the hard work and excellent service for the following outgoing steering committee member service during the past three years.



Scott W. Trappe, Ball State University, served past three years as an EEP Exercise Physiology Councilor.



Vincent J. Caiozzo, University of California – Irvine, served the past three years as an EEP Environmental Physiology Councilor.

#### 4. Adolph Lecture and Student Luncheon:



Bente Karlund Pedersen, M.D., DMSc. Is the 2009 Adolph lecturer. She is Professor of Integrative Medicine, Director of Centre of Inflammation and Metabolism (CIM) with the University of Copenhagen, Faculty of Health Sciences, Copenhagen Denmark. She is a prolific scientist with many high-impact publications on immune responses to acute and chronic exercise. The Adolph Lecture title is *“Skeletal Muscle as an Endocrine Organ”*

Dr. Karlund Pedersen will participate in a free luncheon with graduate students and post-doctoral trainees at EB09. Limited reservations are still available (contact Mike Sawka): Time & Place: Noon, Sunday, April 19, Grand Salon 9, Hilton New Orleans Riverside



#### 5. EEP Honor Award:

Frank W. Booth, Ph.D. is the 2009 EEP Honor Award winner. Dr. Booth is Professor of Biomedical Sciences, Medical Pharmacology and Physiology, Dalton Cardiovascular Center, University of Missouri at Columbia. Dr. Booth has been studying mechanisms by which signals are sensed, transduced, and effect the expression of genes in skeletal muscle. Dr. Booth’s ultimate

research goal is to provide molecular level evidence-based medicine for why sedentary lifestyle increases the risk of many unhealthy conditions. Dr. Booth is a prolific scientist with many high impact studies that are published ~200 full-length open literature publications.

#### 6. EB08 EEP Activities:

EEP Program Committee Meeting, Friday, April 17, 4:00 pm, Cambridge, Hilton New Orleans Riverside

EEP Steering Committee Meeting, Sunday, April 19, 6:30 am, Cambridge, Hilton New Orleans Riverside

Graduate Student & Postdoctoral Student Lunch with Adolph Lecturer, Sunday, April 19, 12:00 pm, Grand Salon 9, Hilton New Orleans Riverside (**free lunch**; limited space contact Dr. Sawka for reservation)

EEP Awards and Business Meeting, Monday, April 20, 6:00 pm  
Melrose, Hilton New Orleans Riverside

EEP Reception (**FREE FOOD & Cash Bar**), Monday, April 20, 7:00 pm  
Marlborough A&B, Hilton New Orleans Riverside

## 7. EB08 Scientific Sessions of EEP Interest:

The 2009 American Physiological Society / Experimental Biology Meeting is from April 18-22 in New Orleans, LA. Below is a preview of some exciting scientific sessions of interest to EEP members.

Sunday, April 19

- Skeletal Muscle as an Endocrine Organ (Adolph Lecture) – Pedersen
- Muscle Fatigue Featured Topic - Renaud
- History of Human Thermoregulation Featured Topic - Ryan
- Preconditioning & Acquired Tolerance for Protection from Exertional, Environmental & Traumatic Injury Featured Topic - Leon
- New Functions of Dorsomedial Hypothalamus Thermoregulation & Beyond Symposium – Romanovsky / Morrison
- Insights into Oxygen Sensing Symposium
- Ventilatory Control Disorders Symposium

Monday, April 20

- Genetics of Adaptation to Exercise Feature Topic – Bouchard / Olfert
- Erythrocytes & Endocrine Signaling Symposium – Sprague / Ellsworth
- Metabolic Signaling Featured Topic –
- Thermoregulation in Extreme Environments Featured Topic – Noren
- Fibrosis: Signaling Physiology & Therapies Symposium – Pitts / Plato
- Leptin: From Bench to Clinical Applications Symposium - Mantzoros

Tuesday, April 21

- Exercise-Induced Signals to Phenotype Adaptation in Skeletal Muscle Symposium – Hood
- Hypoxia & Stem Cells Symposium – Chandel / Simon
- Cardiovascular & Metabolic Actions of Leptin: Consequences in Obesity Symposium – Mark ./ Casis
- Cytoprotective Mechanisms & Regulation of Mitochondrial Permeability Transition Symposium – Cammarata / Baines

Wednesday, April 22

- Understanding Cross-Talk Between Skeletal Muscle & Adipocyte in Obesity Symposium - Keslacy / Nosek
- Emerging Role of MicroRNAs in Skeletal Muscle Biology – Andrade / McCarthy
- Environmental Stress Responses: Cellular, Molecular & Genetic Mechanisms Featured Topic - Choe
- Novel Insights into Nitric Oxide Signaling Symposium – Stamler / Calvert
- Time Domains of Hypoxic Ventilatory Responses Feature Topic - Powell

- Intermittent Hypoxia on Metabolism, Vascular Dysfunction & Atherosclerosis Featured Topic – O'Donnell / Polotsky
- Neuroplasticity of Autonomic Behavior in Health & Disease Featured Topic – Machado / Prahakar

## 8. EEP “Legends” Featured in APS Living History Program

The APS has initiated the Living History of Physiology Project. The Society encourages the membership to consider interviewing senior physiologists at their institutions to provide a living history of physiology. The videos focus on each physiologist's training and career and their professional interactions. EEP “Legends” Clark Blatteis, Elsworth Buskirk, John Greenleaf and Edgar Folk are among the first persons entered into APS web-site (<http://www.the-aps.org/livinghistory/index.htm>). In the next year, EEP “Legends” will include

Charles Tipton.



Charles Tipton – EEP Legend

## 9. Nominations for EEP Honor Award and Adolph Lectureship

**Environmental and Exercise Physiology Section Honor Award:** Recognizes a previous or current primary member of the EEP Section who has made significant research contributions to the scientific advancement of environmental, exercise, or thermal physiology while enhancing the objectives of the section. Applications should include a nomination letter and current curriculum vitae and be submitted by **1 April, 2009**. Applications and questions should be directed to Michael Sawka, EEP Section Chair, [michael.sawka@us.army.mil](mailto:michael.sawka@us.army.mil).

**Environmental and Exercise Physiology Section Edward F. Adolph Distinguished Lectureship:** Is given to an eminent research scholar contributing to the areas of environmental, exercise and/or thermal physiology. Recipients are recognized at the EEP Awards Reception at the EB meeting. Candidates must provide copy of their curriculum vitae. Applications should include a nomination letter and current curriculum vitae and be submitted by **1 April 2009**. Applications and questions should be directed to Michael Sawka, EEP Section Chair, [michael.sawka@us.army.mil](mailto:michael.sawka@us.army.mil).

## 10. EEP News Update



Mike Sawka – EEP Chair

APS Council approved the request to increase the Featured Topic allocation from \$1,000 to \$2,000, effective with EB 2010.

APS Council approved re-allocation of existing programming slots (both Featured Topic and Symposia) effective with **EB 2010**, using the model recommended by Section Advisory Committee. This resulted in EEP adding an additional Featured Topic starting at EB10.

APS Council approved expanded programming through Wednesday afternoon effective with **EB2011**, using the session allocation proposal submitted by Section Advisory Committee. This resulted in EEP adding an additional Symposium starting at EB11.

APS Council approved a travel award program for the 2009 IUPS Congress (to be held Jul-Aug 2009 in Kyoto, Japan). The program will be administered similar to previous IUPS travel awards, and it is anticipated that 50 awards of \$1000 each will be presented.

New Funding Source! The Partnership for Clean Competition (PCC) is a new organization (sponsored by Olympic Committee and professional sports) that will be awarding grants. The will focus on the development of effective tests for detection of performance enhancing substances. Additional research may explore non-test based methods to decrease doping and performance-enhancing drug use across all levels of athletic participation and competition, from the casual youth sports participant to the elite amateur and professional athlete. The PCC will review submitted pre-applications on a rolling basis. Applicants whose pre-applications align with PCC research objectives and show considerable potential will then be asked to submit full grant applications. Round 1: Pre-applications due March 1; Full applications due April 1 Round 2: Pre-applications due July 1; Full applications due August 1 Round 3: Pre-applications due November 1; Full applications due December 1. For information see website at [www.cleancompetition.org](http://www.cleancompetition.org) <<http://www.cleancompetition.org>> !

Iditarod Trail Sled Dog Race, the world's longest sled race. They are the premier ultra-endurance competitors, covering 1,100 miles from Anchorage to Nome, Alaska, sometimes in just nine days. It is unclear how they can keep running, despite heavy blizzards, temperatures as low as -40°F, and winds up to 60 mph. No other animal has been found to come close to the physiological attributes these dogs display. Dr. Michael Davis' work focuses on the mysteries of this breed for more than a decade. To watch the Oklahoma State University professor give an overview of his work, see: <http://www.the-aps.org/Video/Clips/michaeldavis.htm>

## 10. Journal of Applied Physiology – Update



Jerry Dempsey – Editor-In-Chief, Journal of Applied Physiology

It has been about 3.5 years since our editorial team began their leadership for the Journal of Applied Physiology (JAP). Based on input from our associate and consulting editors, it was decided that our major goals were: a) to improve the quality, significance, and impact of published manuscripts in the JAP; and b) to diversify offerings so that the Journal provides a forum for debate, for better communication among investigators and especially to encourage participation from new investigators. .

Manuscript Quality/Impact: Our approach to this problem was to emphasize the importance of “significant advances in physiologic understanding” to our reviewers, to obtain three carefully selected referees for each manuscript, and to expand the number and expertise of our associate editors (12 full-time and 7 half-time). We also now have nine consulting editors who actively participate in Journal decisions. The result of these efforts has been a gradual rise in rejection rate from 50-55% to 64-69%. This has led to two indications of increased quality of our published manuscripts: a) the collective opinions of our associate and consulting editors; and b) a 14% increase in our 2007 impact factor to 3.6 (from ≤ 3.0 over the previous years).

Communication: JAP now has a regular Point-Counterpoint and Viewpoint manuscript series which include brief, peer-reviewed commentaries from the readership. Most encouraging in this regard are the gradual increase in manuscripts and commentaries submitted by beginning investigators. We also now publish many more editorials on original manuscripts and more Letters to the Editors are submitted and published.

## **12. Know Your Steering Committee**

The following individuals were elected to serve your interests. If you have any program or other ideas / concerns regarding APS and EEP issues please do not hesitate to contact the following:

Chair - Michael N. Sawka (508) 233-5665  
Joint Program Committee Representative – Craig Crandall (214) 345-4623  
Exercise Physiology Councilor – Peter A. Farrell (252 ) 328-4635  
Exercise Physiology Councilor - Scott William Trappe (765) 285-1145  
Environmental Physiology Councilor - Vincent J. Caiozzo (949) 824-7752  
Environmental Physiology Councilor - Robert C Roach (303) 724-1670  
Thermal Physiology Councilor - Samuel N. Cheuvront (508) 233-5607  
Thermal Physiology Councilor - Nisha Charkoudian (507) 255-8475  
Committee-on-Committees Representative - Michael C. Hogan (619) 534-2773

Trainee Advisory Representative - Lacy M.A. Holowatz (814) 863-2948  
International Committee Representative – Hiroshi Nose (81) 263-372681  
Liaison with Industry – Karen Mittleman (908) 231-4015