EB 2012 AWARD WINNERS

Awards were presented at the EB 2012 meeting in San Diego CA to faculty, post-doctoral fellows, and graduate students. The recipients were chosen by the E&M section steering committee. The post-doctoral and graduate student awards were based on the merit of the research they presented at this years meeting. Congratulations!

New Investigator Award

Brian A. Irving, PhD
*Mayo Clinic College of Medicine*

Virendra B. Mahesh Award for Excellence in Endocrinology

Gina L.C. Yosten
*Saint Louis University*

Mead Johnson Research Award in Endocrinology and Metabolism

Kavaljit H. Chhabra
*LSUHSC, New Orleans*
Hariom Yadav
*NIDDK-NIH*

Endocrinology and Metabolism Section Research Recognition Award

David M. Gunderman
*University of Texas Medical Branch*
TanYa M. Gwathmey
*Wake Forest University School of Medicine*
Xuemei Shi
*Baylor College of Medicine*
Kristine Wadosky
*University of North Carolina at Chapel Hill*

Now is the time to begin thinking about participating in the EB 2013 meeting to be held in Boston, MA April 20-24, 2013. The section is sponsoring several sessions that promise to be at the forefront of endocrinology and metabolism.

**Featured Topics and Poster Sessions**

The E&M Section will sponsor three symposia and two featured topics, in addition to the Berson Lecture at EB 2013.

**Symposium Award Lecture:** Monday 4/22 at 10:30 in Room 210A

**Symposium #1: Is there a physiological role for C-peptide?**  
Chairs: Christine Maric-Bilkan and Gina Yosten  
Tuesday 4/23 at 10:30 in Room 206A

Connecting Peptide, or C-peptide, is a product of the insulin prohormone, and is released with and in amounts equimolar to that of insulin. While it was once thought that C-peptide was biologically inert and had little significance beyond its role in the proper folding of insulin, it is now known that C-peptide binds specifically to the cell membranes of a variety of tissues and initiates specific intracellular signaling cascades that are pertussis toxin-sensitive. Although it is now clear that C-peptide is a biologically active molecule, controversy still remains as to what is the physiological significance of the peptide. Interestingly, C-peptide appears to reverse the deleterious effects of insulin in some tissues, including the kidney and the vasculature. C-peptide is thus a potential therapeutic target for the treatment of diabetes-associated complications. In this symposium, we will address the possible physiologically relevant roles of C-peptide in both normal and disease states, and discuss the effects of the peptide on sensory nerve function, in the vasculature, and in renal function. Furthermore, we will highlight the intracellular effects of the peptide and novel strategies for the determination of the C-peptide receptor(s). Speakers will present new data as well as offer possible future directions to this emerging field.

**Symposium #2: Branched-chain Amino Acids in Obesity and Insulin-Resistance: Friend or Foe?**  
Chairs: Tracy G. Anthony and Sean Adams  
Tuesday 4/23 at 15:15 in Room 206A

Traditional viewpoints concerning the (patho)physiology and metabolic sequelae of obesity, insulin resistance and type 2 diabetes have centered around alterations of glucose and fatty acid metabolism that take place prior to or concurrent with deteriorating metabolic health. Recent advancements in metabolomics technologies have enabled a broader interrogation of whole-body and tissue-specific biochemical systems beyond fats and sugars. Considering contemporary findings from metabolomics studies and historic biochemical data, it has become evident that amino acid homeostasis is perturbed in the insulin-resistant or diabetic state, e.g., with elevated blood branched-chain amino acid (BCAA) concentrations consistently associated with these conditions, even in the fasted state. Whether this reflects a cause or effect of BCAAs on metabolic disease has been the subject of debate. While many studies have indicated positive effects of high protein or BCAA-rich diets on metabolic phenotypes in obese/type 2 diabetic subjects and in obese animal models, BCAA can also impinge upon cellular systems such as mTOR that could ultimately inhibit insulin signaling. Furthermore, the etiology of elevated fasting blood BCAAs and a select set of other essential amino acids in the obese, insulin-resistant or diabetic state requires further study. Does this reflect a reduction in BCAA blood clearance or an increase in lean tissue BCAA release, and/or is this driven by a shift toward incomplete or inefficient BCAA oxidative metabolism in some tissues due to down-regulation of oxidative enzyme systems (such as the rate-limiting branched-chain alpha-ketoacid dehydrogenase, BCKD)? This symposium will address these issues head-on, through presentations that consider mitochondria-to-whole body observations, tissue-specific regulation of BCAA metabolism, and the impact of dietary protein on metabolic health outcomes.

**Symposium #3: Mitochondrial phospholipids, aldehydes, and protein carbonyls: An evaluation of the good, sometimes good, and ugly consequences of dietary PUFAs**  
Chairs: Ethan Anderson and William Stanley  
Sunday 4/21 at 15:15 in Room 209
A diet that is high in fat and refined carbohydrates (i.e. 'Western style' diet), is known to cause obesity and metabolic syndrome, followed eventually by dysfunction in the heart (i.e. cardiomyopathy). Polyunsaturated fatty acids (PUFAs), particularly n-6 PUFAs from soybean and vegetable oil, are abundant in Western diet, and in body tissues these PUFAs can readily be oxidized and form lipid peroxides. The end result of the peroxidation of n-6 and n-3 PUFAs is formation of 4-hydroxynonenal (HNE) and 4-hydroxyhexenal (HHE), respectively, which are highly reactive aldehydes capable of forming carbonyl-adducts with proteins, phospholipids and DNA. A growing body of literature supports a fundamental role for these aldehydes as major players in the etiology of a broad spectrum of diseases, including obesity and type 2 diabetes, cardiovascular disease, neurodegenerative disease, and many more. Particular attention has been directed at the physiological and pathological role of their formation in mitochondria, an organelle that contains an abundant amount of polyunsaturated fatty acids. Other benefits of PUFAs have been shown to be a consequence of altered mitochondrial phospholipid composition in various experimental models. In particular, the mitochondrial phospholipid cardiolipin is altered following PUFA-enriched diet, and this has been suggested to be a mechanism by which mitochondrial function can be improved with this intervention. In this symposium, a spectrum of speakers will discuss the basic mechanisms of how PUFAs can affect various physiological systems through formation of reactive aldehydes and altering mitochondrial function. The paradoxical role of these aldehydes in causing beneficial outcomes in cells and tissues through induction of anti-oxidant systems and protective autophagy (hormesis) will also be discussed. This topic bridges multiple disciplines and has broad-reaching implications for all investigators interested in cardiovascular physiology and intermediary metabolism.

**Featured Topics and Poster Sessions:**

Abstracts may be submitted for any one of the following Featured Topics or Poster Sessions. Please remember that abstracts chosen for oral presentation in one of the Featured Topics must also be presented during the poster sessions. Also, for young investigators to apply for an award through the E&M Section, they must submit an abstract to one of these sessions.

**Featured Topic #1: Novel Interventions for Treating Obesity and Type 2 Diabetes**

Chairs: T.H. Reynolds and Joseph T. Brozinick  
Tuesday 4/23 at 8:00 in Room 206A

**Featured Topic #2: Crosstalk between 1-carbon Metabolism and Pathways Associated with Metabolic Diseases**

Chair: Li Wang  
Wednesday 4/24 at 8:00 in Room 207

**Cross-Sectional Symposia:** More information in the next newsletter.

**The Physiology Society (UK) sponsored Symposium: Neuroendocrine Regulation of the Mammalian Reproductive Axis**  
Tuesday 4/23 at 8:00 in room 210A entitled

**POSTER Session Topics:**

- **Poster Session with Featured Topic 1: Novel Interventions for Treating Obesity and Type 2 Diabetes**

- **Poster Session with Featured Topic 2: Crosstalk Between 1-carbon Metabolism and Pathways Associated with Metabolic Diseases**

**Other Poster Sessions:**  
Exercise, nutrition and muscle protein synthesis  
Mitochondrial function  
Cardiovascular endocrinology, including renin-angiotensin-aldosterone  
Gestation, fetal, and neonatal biology including mammary gland and lactation
Growth, connective tissue and bone metabolism
Pancreatic hormones and Diabetes
Lipid, lipoprotein and cholesterol metabolism
Neuroendocrinology, hypothalamus and pituitary
Obesity and satiety
Protein, amino acid and carbohydrate metabolism
Reproduction and sex hormones
Stress and trauma including adrenal gland

Announcements

1. Call for nominations for the APS E & M Section Program Committee. The Endocrinology and Metabolism Section seeks nominations for a Section Representative on the APS Joint Program Committee. The appointed individual will be responsible for working with the Section Steering Committee to solicit proposals for and program Poster Sessions, Featured Topics Sessions and Symposia at the annual Experimental Biology Meeting. The position requires a broad knowledge of the research interests of the Section, a willingness to travel to APS Headquarters in Bethesda twice a year for programming meetings (typically in June and December), and a commitment to attend the annual EB Meeting to supervise sessions scheduled by the Section. This is an important, visible position that requires significant commitment of time and effort. Interested applicants should contact the current section representative to the Join Program Committee, Rick Samson (samsonwk@slu.edu) or the Section Chair, Josh Anthony (joshua_anthony@campbellsoup.com).

2. There are a number of committee vacancies for next year. All are for individuals that have completed their training (faculty, industry, or government scientists), except where noted as trainees (either graduate or postdoc). Some likely require more senior or experienced faculty including Finance; Education; Conference. If you are interested in volunteering, please contact Josh Anthony (joshua_anthony@campbellsoup.com) or Catherine Ohnmacht (cohnacht@the-aps.org).

a. Awards committee: 6 openings
b. Conferences committee: 2 openings
c. Career committee: 5 w/ 1 grad student + 1 postdoc trainee slots
d. Communications committee: 3 openings
e. Finance committee: 2 openings
f. International committee: 4 openings
g. Membership committee: 5 openings
h. Porter committee (for minority travel awards to attend EB): 5 openings with 1 trainee who holds a Porter fellowship
i. Science Policy committee: 4 with/ 1 post-doc trainee
j. Women in Physiology committee: 3 openings

3. The APS E&M Section is looking for a volunteer to act as an advocacy liaison for our section (due date July 20, 2012).

We are looking for a representative from the APS Endocrine and Metabolism section to serve as a liaison to the Science Policy and Animal Care and Experimentation Committees. This representative will receive the monthly Science Policy (SP) News update and will be expected to relay pertinent information to the section membership. The goal of new position is to ensure that APS members get relevant information
regarding science policy issues and advocacy opportunities on a regular basis. This liaison will be the conduit through which section members could communicate with Science Policy and Animal Care and Experimentation Committees. **If you are interested in volunteering, please contact Josh Anthony (joshua_anthony@campbellsoup.com) or Catherine Ohnmacht (cohnmacht@the-aps.org).**

4. **International Union of Physiological Sciences (IUPS)**  
**July 21-26, 2013 Birmingham, UK**  
http://www.iups2013.org/

**APS E&M Sponsored Symposium: Mammalian Nutrient Sensing**  
Organizers: Daniela Riccardi and Willis K. Samson

Abstract: The ever increasing epidemics of obesity and hypertension have focused attention on how cells detect fluctuating levels of extracellular electrolytes and nutrients. New insights have been gained into the cellular and molecular mechanisms by which these solutes are detected and regulated and how that information is translated into not only appetite control and nutrient partitioning, but also the maintenance of normal fluid and electrolyte homeostasis. This Symposium will examine the cellular mechanisms controlling external fuel and electrolyte acquisition and how internal fuel and solute availability is detected. These two aspects of metabolism require a complicated, yet direct interaction between nervous system structures, circulating hormones, and the fuel storage sites in the body. The translational nature of current research will be the central focus of the presentations.

5. **First Pan-American Physiology Meeting 2013**  
**August 2-6, 2014 Iguassu Falls, Brazil**

It is our pleasure to announce the 1st Pan-American Congress of Physiological Sciences (PanAm-2014). This will be the first historical meeting of the physiologists from the three Americas and it will be held in the city of Foz do Iguaçu, Brazil [Iguassu Falls-Rafain Hotel & Convention Center (http://www.rafainpalace.com.br/v2/home_ing/)]. The Societies of Physiology of Argentina, Brazil, Canada, Chile, Cuba, Mexico, United States of America and the Latin-American Association of Physiological Sciences are in charge of the organization of this Pan-American Congress. The Congress will start on the evening of August 2 (Saturday) and the closing session will be at noon August 6 (Wednesday), 2014.

The theme for this 1st Pan-American Congress is “Physiology without borders”. The Scientific Programming Committee (SPC) of PanAm-2014 wishes to invite you to submit proposals for Plenary Lectures, Keynote Speakers and Symposia. All submissions will be considered by the SPC, which has representation of all participants’ societies (see the names at the end of this message). All submissions must follow the guidelines presented below and be sent by e-mail to the chairs of the SPC [Benedito H. Machado (bhmachad@fmrp.usp.br) and Jane Reckelhoff (jreckelhoff@umc.edu)] no later than November 30, 2012. The first full version of the Scientific Program will be organized in a meeting of the SPC during the Experimental Biology Meeting, April 2013, in Boston, USA, and will be announced no later than May, 2013.

For more information, see http://www.the-aps.org/mm/hp/Featured-News/1st-PanAmerican-Congress-of-Physiological-Sciences-2014.pdf