EB 2013

EB 2013 will be held in Boston, MA April 20-24, 2013. The Endocrinology and Metabolism Section is sponsoring an array of symposia that promise to be at the forefront of endocrinology and metabolism. We look forward to seeing you there!

Section Programming and Special Events

The E&M Section will sponsor the Solomon Berson Lecture, three symposia, and two featured topics at EB. Also, don't forget to join us for the Section Business Meeting and Awards Reception. We have also included a sneak peak of our programming (as of the time of this publication) before it's available in the official program.

Sunday, April 21, 2013

Special Event: E-M Section Steering Committee Meeting
Time: 7:30 AM
Location: Thompson, Renaissance

Cross Sectional Symposium: Emerging Concepts in AMPK Function
Time: 8:00 AM – 10:00 AM
Location: Convention Center Room 210A
Chairs: Judy Creighton and Jaroslaw Zmijewski

Speakers/Times:
8:00 AM Grahame Hardie, Univ. of Dundee
AMPK: the energy sensor that regulates all aspects of cell function.

8:30 AM Gregory R. Steinberg, McMaster Univ.
AMPK and the inflammatory response.

9:00 AM Reuben Shaw, Salk Inst. for Biol. Sci.
Physiological outcomes of AMPK signaling compartments.

9:30 AM Kenneth Walsh, Boston Univ. Sch. of Med.
AMPK, inflammation, and the cardiovascular system.

Symposium: Mitochondrial phospholipids, aldehydes, and protein carbonyls: An evaluation of the good, sometimes good, and ugly consequences of dietary PUFAs
Time: 3:15 PM - 5:45 PM
Location: Convention Center Room 209
Chairs: Ethan Anderson and William Stanley

Abstract: 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 containing 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, suggesting a mechanism by which mitochondrial function can be improved with this intervention. This symposium will present a spectrum of speakers that 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.

Speakers/Times:
3:15 PM    David A. Bernlohr, University of Minnesota – Twin Cities
Oxidative stress and covalent modification of adipocyte proteins with bioactive aldehydes

3:45 PM    Victor Darley-Usmar, University of Alabama-Birmingham
Role of lipid peroxidation in cardiovascular health and disease

4:15 PM    Matthew J. Picklo, USDA Agricultural Research Service
Trans-4-hydroxy-2-hexenal, a product of n-3 polyunsaturated fatty acid peroxidation: Make some room, HNE

4:45 PM    William Stanley, University of Maryland-Baltimore
Impact of Dietary n3 PUFAs on mitochondrial phospholipids and function in heart

5:15 PM    Ethan Anderson, East Carolina University
Nrf2 and mitochondria: Why PUFAs and exercise are near and dear to our hearts

Sunday E&M Sponsored Poster Sessions:
S036    Exercise, Nutrition, Growth, and Tissue, Bone and Muscle Protein Synthesis
S055    Gestation, Fetal, and Neonatal Biology, Including Mammary Gland and Lactation
S056    Reproduction and Sex Hormones

Authors are present at their posters from: 12:45 PM - 3:00 PM
Location: Boston Convention & Exhibition Center, Exhibit Halls A-B

Monday, April 22, 2013

Solomon A. Berson Distinguished Lectureship of the APS
Endocrinology & Metabolism Section Named Lecture
Time: 10:30 AM
Speaker: Ellis R. Levin
Location: Convention Center, Room 210A
Topic: Extra-nuclear estrogen receptors: Roles in development, physiology, and pathophysiology

Dr. Levin’s laboratory focuses on the plasma membrane estrogen receptor (ER) and its effects on the biology of estrogen action. This includes both in-vitro and in-vivo models investigating clinically important observation in humans that is mechanistically not understood. The focus of Dr. Levin’s laboratory is currently is on 1) estrogen action to promote breast cancer development, and 2) the anti-hypertrophy effects of estrogen on the cardiomyocyte. As part of the studies, they hope to understand the molecular structure /function aspects of the membrane estrogen receptor, that allows for signaling, and membrane localization. His laboratory’s studies involve mutagenesis or inhibition of endogenous receptors, and genetic mouse models (ER knockout) and focus on mitochondrial ER and their role in tamoxifen sensitivity versus resistance in breast cancer.

From: http://www.faculty.uci.edu/profile.cfm?faculty_id=3100
Monday E&M Sponsored Poster Sessions:

M306  Neuroendocrinology, Hypothalamus, and Pituitary
M307  Cardiovascular Endocrinology, Including Renin-Angiotensin-Aldosterone and the Adrenal Gland in Stress and Trauma

Authors are present at their posters from: 12:45 PM - 3:00 PM

Location: Boston Convention & Exhibition Center, Exhibit Halls A-B

Special Event:  Section Business Meeting and Awards Reception

Time:  7:00 PM
Location:  Atlantic Ballroom 3, Renaissance

The Annual Business Meeting and Awards Reception is a great opportunity to get up to date on Section activities and to share research and refreshments with friends and colleagues. We will also announce award winners for the New Investigator Award, the Virendra B. Mahesh Award of Excellence in Endocrinology, the Mead Johnson Research Award in Endocrinology and Metabolism, and Endocrinology & Metabolism Section Research Recognition Award. Award winners will have their posters displayed for review and discussion. Please make time to attend and bring a colleague to learn more about our Section.

Tuesday, April 23, 2013

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

Time:  8:00 AM
Location:  Convention Center Room 206A

Chairs:  Thomas H. Reynolds and Joseph T. Brozinick

Speakers/Times:

8:00 AM  T. H. Reynolds. Skidmore Col.
MnTBAP: an antioxidant that reverses diet-induced adiposity and insulin resistance.

8:30 AM  J. T. Brozinick. Eli Lilly and Co.
Resetting the clock: hitting RORα to treat metabolic syndrome.

Chronic carbon monoxide treatment attenuates the development of obesity and remodels adipocytes in mice fed a high fat diet.

Activation of CaMKKα stimulates skeletal muscle glucose uptake in insulin-resistant mice.

The role of skeletal muscle tribbles 3 on endoplasmic reticulum stress-and high fat diet-induced insulin resistance.

9:45 AM  A. Zsombok, K. Miyata, J.D. O’Hare, T.L. Fourrier, A.M. Krantz and A.V. Derbenev. Tulane Univ.
TRPV1 in the paraventricular nucleus of the hypothalamus is involved in the regulation of systemic blood glucose levels.
**Symposium:** Is there a physiological role for C-peptide?

**Time:** 10:30 AM - 11:50 AM

**Location:** Convention Center Room 206A

**Chairs:** Christine Maric-Bilkan and Gina Yosten

**Abstract:** 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 molecular, 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.

**Speakers/Times:**

10:30 AM  
John Wahren, Karolinska Institutet  
The relevance of C-peptide in Diabetes and its complications: Introduction

10:50 AM  
Christine Maric-Bilkan, University of Mississippi Medical Center  
Effects of C-peptide in the diabetic kidney

11:10 AM  
Anders Sima, Wayne State University School of Medicine  
Effects of C-peptide in neurological complications of diabetes

11:30 AM  
Gina Yosten, Saint Louis University School of Medicine  
Searching for the C-peptide receptor

**Symposium:** Branched-chain Amino Acids in Obesity and Insulin-Resistance: Friend or Foe?

**Time:** 3:15 PM -

**Location:** Convention Center Room 206A

**Chairs:** Tracy G. Anthony and Sean Adams

**Abstract:** 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.

**Speakers/Times:**

3:15 PM  
Christopher Newgard, Duke University Medical Center  
Branched-chain amino acids as a marker in obesity and the insulin-resistant state

3:45 PM  
Yoshiharu Shimomura, Nagoya University
Regulation of branched-chain amino acid catabolism by type 2 diabetes

4:15 p.m. Donald Layman, University of Illinois
The metabolic roles of branched-chain amino acids in the treatment of obesity

4:45 PM Christopher Lynch, Penn State College of Medicine
Role of adipose tissue in branched-chain amino acid metabolism

Tuesday E&M Sponsored Poster Sessions:
T041 Obesity and Satiety
T042 Pancreatic Hormones, Diabetes and Novel Interventions for the Treatment of Obesity and Diabetes

Authors are present at their posters from: 12:45 PM - 3:00 PM
Location: Boston Convention & Exhibition Center, Exhibit Halls A-B

Wednesday, April 24, 2013

Featured topic: Crosstalk between 1-carbon Metabolism and Pathways Associated with Metabolic Diseases
Time: 8:00 AM
Location: Convention Center Room 207
Chairs: Li Wang and Steven Zeisel

Time: 2:30 PM - 4:30 PM
Location: Convention Center Room 210A
Chairs: William M. Chilian

Speakers/Times:
2:30 PM Rama Natarajan, Beckman Res. Inst. of the City of Hope
Epigenetic modifications in diabetes.


3:45 PM Zhongjie Sun, Univ. of Oklahoma Hlth. Sci. Ctr. Regulation of pancreatic β cell function by anti-aging gene klotho in type II diabetes.

4:10 PM Marcella Rota, Brigham and Women's Hosp. Impairment of stem cell function in diabetes: induction of an aged phenotype in stem cells.

Wednesday E&M Sponsored Poster Sessions:
W027 Protein, Carbohydrate, and Lipid Metabolism
W028 Mitochondrial Function

Authors are present at their posters from: 12:45 PM - 3:00 PM
Location: Boston Convention & Exhibition Center, Exhibit Halls A-B
Science Policy Sessions at EB 2013

Funding Agency Update: “Program and Policy Updates from the NIH and NSF”
2:30-4:30 PM, Wednesday, April 23. Convention Center Room 207

Federal funding agencies play important roles in shaping research by developing programs to address scientific needs and setting policies that govern the distribution of resources. Story Landis of NINDS, Griffin Rodgers of NIDDK, and John Wingfield of the NSF Biological Science Directorate will provide updates on current programs and research priorities plus outline new initiatives and emerging opportunities for researchers at their agencies.

Science Policy Symposium: “How to Be a Science Advocate in Your Own Backyard”
1-3 PM, Saturday, April 20. Convention Center Room 206B

Advocacy can be broadly defined as efforts to help others understand the central importance of scientific research. Even when scientists understand the importance of advocacy, they may not know how to get started being an advocate. This symposium will give researchers some practical tips and tools for getting started and help them understand where the most accessible opportunities are.

Other Announcements

Samson selected as the New Editor in Chief for AJP: Regulatory, Integrative and Comparative Physiology

E& M Section Member Willis K. "Rick" Samson has been selected to be the new Editor-in-Chief of the American Journal of Physiology: Regulatory, Integrative and Comparative Physiology. He takes over from the current EIC, Curt Sigmund, July 1, 2013, after having served as Dr. Sigmund's Deputy Editor-in-Chief for the past six years.

WCNH 2013

The 10th World Congress on Neurohypophysial Hormones (WCNH 2013) will take place in Bristol, England, from July 15-19, 2013. Details and registration forms are available at www.vasopressin.org

IUPS 2013

The APS has sponsored a Symposium on Mammalian Nutrient Sensing at the IUPS 2013 (International Union of Physiological Societies, July 2013, Birmingham U.K.) that was proposed by the E&M Section. Details on the session can be found at the link below:
http://www.iups2013.org/scientific-programme/symposia/mammalian-nutrient-sensing

Individual subscriptions to Science Policy News now available

APS members now have the opportunity to subscribe as individuals to Science Policy News. This monthly electronic publication from the APS Office of Science Policy features opportunities to advocate for research along with news on policy issues of interest to physiologists. It is published electronically the 3rd Tuesday of each month, with special editions when needed, e.g., if Congress is about to take an important vote.

To sign up for Science Policy News, send an email with “Subscribe” in the subject line to sciencepolicy@the-aps.org. Only APS members may subscribe to Science Policy News, but feel free to share the Action Alerts with your colleagues.

PLEASE NOTE: Everyone who currently receives Science Policy News as a Chapter or Section liaison will continue to do so. You do not need to send a subscription request.

More Advocacy Opportunities

Jacquie Calnan, President of Americans for Medical Progress, offered the APS Animal Care and Experimentation Committee suggestions for becoming a research advocate.
Agency sequestration guidance

With budget sequestration in effect since March 1st, funding agencies have begun issuing guidance to grantees and contractors.

- On March 4, Sally Rockey sent a letter outlining efforts to mitigate the mandatory budget cuts. Further information will be posted when it becomes available on the Extramural Financial Operations Page. In addition, individual institutes, centers, and divisions will make announcements about their plans.
- NSF Director Subra Suresh issued a sequestration guidance notice on February 27. NSF will seek to minimize disruption from the cuts and seeks to protect commitments to the agency’s core mission; maintain existing awards; protect the NSF workforce; and protect STEM human capital development programs.
- NASA Headquarters sent a letter on March 4th to contractors, grantees and agreement participants stating that grants, agreements and contracts may be affected by sequestration, and that new and existing work may be “delayed, re-scoped or canceled”.
- Department of Veterans Affairs programs are exempt from sequestration.

EB2014

Ideas for EB 2014 Symposia and Features Needed!

We urgently need suggestions for symposia and featured topics for EB 2014. The deadline for receiving suggestions about symposia and featured topics is April 5, 2013. Your suggestions for symposia topics and featured topics should be sent to our joint programming committee representative, Gina Yosten at: gyosten@slu.edu. Three symposia, two featured topics, and 1 cross sectional symposium (sponsored by a minimum of 2 APS sections) will be programmed. At the minimum, the name of a potential sponsoring APS section should be included for the Cross-Sectional Symposium to further orchestrate co-sponsorship. We look forward to receiving your suggestions for these important opportunities for the Section to highlight research in Endocrinology and Metabolism.