

# Oral Sessions

FRIDAY, APRIL 20

## Biochemistry and Molecular Biology

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1. **ASBMB GRADUATE AND POSTDOCTORAL TRAVEL AWARD PROFESSIONAL NETWORKING EVENT**

**Society Events**

FRI. 5:30 PM—SAN DIEGO CONVENTION CENTER, 6A LOBBY

*COCHAIR*ED: C. HEINEN AND T. O'CONNELL

**Invitation only.** Graduate and postdoctoral travel awardees meet for a kick-off reception and networking activity geared to practice networking skills and engage with Saturday's career program presenters.

2. **SEBM MENTOR MEET-UP AND CAREER DEVELOPMENT WORKSHOP**

**Society Events**

5:30 PM—SAN DIEGO MARRIOTT MARQUIS & MARINA, PRESIDIO

*CHAIR*ED: M. D'ECCLESSIS

## SATURDAY, APRIL 21

## Across Societies

**3. POSTER/ORAL PRESENTATION PRACTICE & MENTORING SESSIONS****Workshop**

SAT. 12:00 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, PEER MENTOR POD

**Career and Professional Development**

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

**4. CAREER CORNER SESSIONS WITH DR. ADAMS****Workshop**

SAT. 12:00 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CAREER CORNER

**Career and Professional Development**

Drop in or sign-up for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

**5. ONE-ON-ONE RESUME CRITIQUE/CV, CAREER COUNSELING, ESSAY PERSONAL STATEMENT ASSESSMENTS****Workshop**

SAT. 12:00 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CAREER  
COUNSELING ROOM

**Career and Professional Development**

One-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session> to schedule your session.

**6. NETWORKING: A REQUIRED LIFE SKILL****Workshop**

SAT. 4:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

To succeed in today's competitive world of work, who you know can be as critical as what you know. Successfully networking, to develop contacts, is a required skill. Networking involves 1) making contacts, 2) establishing cordial relationships, and 3) ultimately bonding to mutually support each other and share information. This seminar explores skills and techniques germane to successful networking. During the session, Dr. Howard Adams will cover the following key topics: 1) Dimensions of Networking; 2) Networking to enhance one's career/professional development; 3) Networking concerns: How? When? Where? Why? 4) Tips for Successful Networking; 5) Do's and Don'ts of Networking.

4:00 Speaker. **H. Adams.** H.G. Adams & Assoc., Norfolk, VA.

**7. ELEMENTS OF A CREDIBLE PRESENTATION****Workshop**

SAT. 5:00 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

5:00 Speaker. **E. Rosa-Molinar.** The Univ. of Kansas

**8. WRAP IT UP! HOW TO SUMMARIZE YOUR RESEARCH POSTER IN 5 MINUTES OR LESS****Workshop**

SAT. 5:30 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

This presentation serves to instruct researchers, primarily trainees, on how to effectively summarize their research in five minutes or less. The information presented mainly focuses on poster presentations but can also be applied to other areas such as informational interviews. Emphasis is placed on key points such as knowing the target audience, knowledge of the research/results, and the ability to convey a clear, concise and accurate message. One highlight of this presentation is the incorporation of technology and how to use it to further enhance and disseminate the information.

5:30 Speaker. **S-G. Scott.** American Gastroenterological Assn.

## 10. EB 2018 TANG PRIZE AWARD LECTURE

## Lecture

SAT. 6:00 PM—SAN DIEGO CONVENTION CENTER, BALLROOM 20

## Award Lectures

Speaker: **Feng Zhang**. Broad Institute of MIT and Harvard, Cambridge, MA McGovern Institute for Brain Research, Department of Brain and Cognitive Sciences. Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA.

Precision genome editing, the ability to alter specific DNA sequences, is a powerful tool for understanding the molecular circuitry underlying cellular processes. Over the past several years, we and others have harnessed microbial CRISPR-Cas systems for use as platforms for a range of genome manipulations, including single and multiplex gene knockout, gene activation, and large-scale screening applications. Recently, we discovered and characterized several novel CRISPR systems that target RNA, including the CRISPR-Cas13 family. We recently reported that Cas13 can be reprogrammed using a single RNA guide to cleave target mRNAs in vivo and that a dead variant of Cas13 (dCas13), created through mutation of the RNase domain, retains target specificity and binding activity. dCas13 provides a platform for a range of RNA-modulation applications, including transcript imaging and RNA editing. Cas13 also exhibits so-called “collateral” activity in vitro, which we capitalized on to create SHERLOCK, a highly sensitive and specific CRISPR diagnostic platform. We are continuing to explore microbial diversity to find new enzymes and systems that can be adapted for use as molecular biology tools and novel therapeutics.

6:00 Harnessing Nature’s Diversity for Gene Editing and Beyond. **Feng Zhang**. Broad Institute of MIT and Harvard, Cambridge, MA.

## 11. EB 2018 WELCOME RECEPTION

## Society Events

SAT. 7:00 PM—SAN DIEGO CONVENTION CENTER, SAILS PAVILION

Join fellow attendees for our second, inter-disciplinary meet and mingle. Appreciate the power and energy of the EB Meeting as all career levels come together for fun and networking. Light refreshments will be served. Member-attendees receive one complimentary drink ticket when they sign up for the event during EB Meeting registration. Cash bar also available.

## 12. EB SCIENCE OUTREACH ACTIVITY POSTER SESSION

## Science Outreach Poster Session

SAT. 7:00 PM—SAN DIEGO CONVENTION CENTER, SAILS PAVILION

During the EB Welcome Reception, science outreach programs from around the country will have their activities on display and are certain to spark interest, ideas, networks and great conversation. **Authors will be at their boards from 7:00–8:00 PM**

- OA1** 12.1 #DoSomething! Raising awareness about antibiotic resistance the SWI way. **A. M. Barral, E. Kurt**. National University and Small World Initiative.
- OA2** 12.2 2<sup>ND</sup> Grade Students Have PhUn Learning About Thermoregulation. **P.A. Halpin**. University of New Hampshire at Manchester.
- OA3** 12.3 A Successful STEM Outreach Program at Marshall University. **T.J. Whitlow, M. Wilson, T. Cartwright, R. Zuberbuehler**. Marshall University.
- OA4** 12.4 A World of PhUn: Hands-On Exploration of Neuro & Cardiac Physiology with 4<sup>TH</sup>-Grade Students. **F.E. Mowry, S.C. Peaden, L.B. Olivia, C.M. Robinson, E.S. Coleman, D.D. Schwartz, V.C. Biancardi**. Auburn University.
- OA5** 12.5 Addressing Health Disparities in Los Angeles County via a Medical Outreach Program. **A. Jalali, B. Varamini**. Biola University.
- OA6** 12.6 Anatomy Explorers: A Pilot Science Outreach Exchange between Bangalore and London. **L. Wilson, C. Pym, C. Deshpande, T. Thomas, R. Wingate**. King’s College London, United Kingdom.
- OA7** 12.7 Anatomy STEM Outreach at Colorado State University. **C.A. Meyer, H. Hall, K.R. Ivie, N. Heise, T.R. Clapp**. Colorado State University.
- OA8** 12.8 Arizona Research Collection for Integrative Vertebrate Evolution and Study (ARCIVES): An Innovative Zoological Collection. **N.E. Wells, K.E. Townsend, H.F. Smith, J.E. Georgi, A.E. Lee, B.E. Adrian**. Midwestern University.
- OA9** 12.9 Art of Science Communication &ndash; Engaging Any and All Audiences. **H. Alexander**. Public Outreach Committee of ASBMB.
- OA10** 12.10 *ArtLab*; Exploring the intersection of art and science. **K.H. Oliver**. Vanderbilt University Medical Center.
- OA11** 12.11 Bringing Physiology Understanding Week to Fourth Graders in State College, PA. **A. Dey, J. Hester, K. Ghanem, D. Korzick**. The Pennsylvania State University.
- OA12** 12.12 Bringing Rural Areas Interactive Neuroscience: The BRAIN Initiative at the University of Vermont. **R. St. Clair**. University of Vermont.
- OA13** 12.13 Building and Sustaining QCC-MSEIP Outreach Activities to Ensure Underrepresented STEM Student Engagement. **N. Gadura**. Queensborough Community College.
- OA14** 12.14 Community of Practice as a Model for Science Education Outreach. **E. Li, M. Southwell, B. Forster, K. Snetselaar**. Saint Joseph’s University.
- OA15** 12.15 Creating Connections in our Community. **G.G. Dachel, R. Knier**. University of Wisconsin—Stout.

- OA16 12.16** Determination Of Effective Dose Fifty (ED) Of Scorpion Antivenom Against Scorpion Envenomation Using The Newly Developed Formula. **S. Alhaji Saganuwan**. University of Agriculture Makurdi, Nigeria.
- OA17 12.17** Development of a Graduate Minor in Communicating Science at Indiana University. **J. Organ, M. Winger, K. Hoffmann-Longtin**. Indiana University School of Medicine and Indiana University—Purdue University Indianapolis.
- OA18 12.18** Discovery Box Loan Program Provides STEM Engagement Materials to Regional Schools. **R.P. Rylaarsdam, K. Tumminello**. Benedictine University.
- OA19 12.19** Enhancing Critical Thinking Skills of High School Science Students: an Outreach Project. **P. Williams, D.L. Lally, J. Donahue, G. Gillaspay**. Virginia Tech.
- OA20 12.20** Evaluating Flipped Teaching in STEM: A Rubric. **R. Rockhold, M. Barnard, C. Compretta, E. Dehon, M. Elasri, E. Meyer, A. Notebaert, S. Stray, D. Sullivan, J. Taylor**. University of Mississippi Medical Center, University of Mississippi and University of Southern Mississippi.
- OA21 12.21** Evidence-based resources for evolutionary medicine education. **S. Brownell, D. Grunspan, R. Nesse**. Arizona State University.
- OA22 12.22** Falcon Biomanufacturing: Teaching molecular biology, protein expression, and entrepreneurship in a rural high school. **M. Koci, R. Ali, B. Boller**. NC State University and Bertie Early College High School.
- OA23 12.23** Get Involved with the ASBMB Public Outreach Committee!. **D.R. Snowflack**. ASBMB.
- OA24 12.24** Having “PhUn” Learning About Physiology in Nebraska. **N.M. Sharma, A. Schiller, E.I. Boesen**. University of Nebraska Medical Center
- OA25 12.25** Health and Anatomy in the Wiregrass: a unique workshop for high school students in the Southeast region combining physiology, anatomy, scientific research, and creative thought. **A.A. Vasauskas, M.N. Buchman, C.L. Richardson**. Alabama College of Osteopathic Medicine.
- OA26 12.26** How to Change an Outreach Service into a Scholarly Activity? An Important State Infrastructure with Six Cycles of NIH Funding. **P.S. Klinkhachorn, A. Klinkhachorn**. West Virginia University and MetroHealth Hospital.
- OA27 12.27** Impact of Immersive STEM Summer Camp for Underprivileged Middle Schoolers. **A.E. Martinez, R. Tirgar, A. Ribes-Zamora, G. Villares**. University of St. Thomas.
- OA28 12.28** Kentucky Chapter of The American Physiological Society’s Involvement in Science Outreach. **W.K. Sumanasekera, R. Cooper, L. Winchester, F. Andrade, S. Tyagi, I. Joshua**. Sullivan University College of Pharmacy, University of KY, Western KY University and University of Louisville.
- OA29 12.29** LEAP into Research: A program to help transfer students get involved in research. **K. Cooper, S. Brownell**. Arizona State University.
- OA30 12.30** Mapping the Body: Poetry and Anatomical Art—New Student Exhibit Merges Humanities and Sciences in Higher Education Collaboration. **A.N. Dueñas, B. Barker, N. Beer, D. Royer**. University of Colorado, Anschutz Medical Campus and University of Colorado Denver.
- OA31 12.31** Michigan Physiological Society introduces an undergraduate Physiology Quiz team competition at their annual meeting. **V.S. VanRyn, E.A. Wehrwein, H-M. Cheng, S. Barman**. Michigan State University and University of Malaya, Malaysia.
- OA32 12.32** Molecular Modeling Programs Using Physical Models Make the Invisible World “Real”. **D.H. Munzenmaier, J. Birschbach, M. Franzen, M. Hoelzer, M. Warden, T. Herman**. Milwaukee School of Engineering.
- OA33 12.33** Otterbein University ASBMB Student Chapter: Dropping the Science. **H.M. Bailey, E.K. Hughes, D.T. Wei, J.T. Tansey**. Otterbein University.
- OA34 12.34** Outreach in New York City! The ASBMB Student Chapter at Marymount Manhattan College. **J. Furnari, K. Mora, A. Aguanno**. Marymount Manhattan College and Marymount Manhattan.
- OA35 12.35** PDB-101: Educational Resources for Molecular Explorations Through Biology and Medicine. **S.K. Burley, C. Zardecki, C. Christie, S. Dutta, D.S. Goodsell, R. Lowe, C. Randle, W. Tao, M. Voigt, J. Woo**. RCSB Protein Data Bank and RCSB PDB.
- OA36 12.36** PhUn week at San Diego: Giving students the hands-on experience in Physiology to inspire the pursuance of college and career pathways in the Biomedical sciences. **K. Ananthakrishnan, A. Hernandez-Carretero, O. Molinar-Inglis**. University of California San Diego.
- OA37 12.37** Physiology Friday with Michigan Tech University: Using Lumber, Woodscrews, and Power Drills to Facilitate Understanding of Human and Animal Movement in Rural High Schools. **S. Elmer, T. Bye, K. Carter**. Michigan Technological University.
- OA38 12.38** Pills, Potions and Poisons: A High School Science Enrichment Program. **K. Summers, M. Downing, N. Kwiek**. The Ohio State University.
- OA39 12.39** Sample a taste of science. **P.K. Bahia**. Scientists and Inc.
- OA40 12.40** Science for Adults. **A. Decker**. Fleet Science Center.
- OA41 12.41** Science Outreach Program For High Schools That Serve Underrepresented Minorities: Generating a Catalyst for Science. **M.J. Massimelli, K. Denaro**. University of California Irvine.
- OA42 12.42** Science Stories on Instagram. **T. Wilkie, H.S. Kantheti**. UT Southwestern Med Center and UT Dallas.
- OA43 12.43** Scientific Community Outreach: Promoting Science to Students at the K–12 Level and STEM Students in ASBMB UPR-RP. **E.D. Navarro, M.G. Perez-Oquendo, J.D. Ramirez-Lugo**. University of Puerto Rico—Rio Piedras, Puerto Rico.
- OA44 12.44** Scientific Community Outreach: Promoting Science to Students at the K–12 Level and STEM Students in ASBMB UPR-RP. **E.D. Navarro, M.G. Perez-Oquendo, J. Ramirez-Lugo**. University of Puerto Rico—Rio Piedras, Puerto Rico.
- OA45 12.45** Social Synapse: Building a Better Network through Educational Outreach at the Department of Neurological Surgery at Northwestern University. **A. Martiny, K. Peck, M. Walsh, M. Walsh, J. Chandler, J. Chandler**. Northwestern University Feinberg School of Medicine and Northwestern Memorial Hospital.

- OA46 12.46** Students Understanding Principles of Research Education through Medicine, Engineering, and Science (SUPREMES). **B.R. Hoffmann, T. Sobotka.** Medical College of Wisconsin.
- OA47 12.47** TAKE SHAPE: Teaching Engineering and Science through Humor, the Arts, and Play. **J.L. DuBois.** Montana State University.
- OA48 12.48** The Engaged Scientist: Building Capacity in Science Outreach through Trainings. **C. Vrentas.** The Engaged Scientist.
- OA49 12.49** The Generation Rx Laboratory: Pharmacology Education for Science Museum Guests of All Ages. **N.C. Kwiek, C.W. Canan, K. Summers, M. Downing.** Ohio State University.
- OA50 12.50** The March for Science—Initiating, Leading, and Surviving the World’s Largest Science Outreach Event. **J.M. Berman.** UTHSCSA.
- OA51 12.51** The Museum of Anatomy: a Tool for Democratization of Science. **A. O. da Rocha, M. P.O. de Moraes, J. M.A. Picanço, G.D. G. R. Thomaz.** Federal University of Health Sciences of Porto Alegre, Brazil.
- OA52 12.52** The Recreation of the Phineas Gage Accident. **D. Heck, D. Donegan, M. Stabio.** University of Colorado Anschutz Medical Campus.
- OA53 12.53** The Role of Informal Youth STEM Program Participation in Undergraduate Student STEM Interest. **E.E. Goff, L. McGuire, L. McGuire, A. Hartstone-Rose, A. Hartstone-Rose, K.L. Mulvey, K.L. Mulvey, M.J. Irvin, M.J. Irvin, A. Rutland, A. Rutland.** University of South Carolina- School of Medicine, Goldsmiths, University of London, United Kingdom and North Carolina State University.
- OA54 12.54** Understanding ADCY5 Gene Mutation Biology: Patient-driven Rare Disease Scientific Outreach and iPSCs. **S. Grossman, G. Grossman.** ADCY5.org.
- OA55 12.55** University of Arizona ASBMB Student Chapter Outreach Activities. **C.K. Park, A. Tran, H. Fukuzaki, M. Morrow, E. Wu, B. Reilly.** University of AZ.
- OA56** Using Brains to Inspire Minds: A Unique Outreach Collaboration with the Boston Museum of Science. **K.J. Babcock, E. Kong, A.C. Zumwalt.** Boston University School of Medicine, Museum of Science and Boston. (631.5)
- OA57 12.56** Welcoming Future Scientists: Engaging Puerto Rican High School Students in STEM through Community-based Learning and Outreach. **W. Pacheco, K. Munoz, E. Suarez.** University of Puerto Rico—Ponce.

### 13. EB SCIENTIFIC HIGHLIGHTS

During the EB Welcome Reception, we will highlight 50 of the over 6000 scientific posters to be presented later in the conference. All disciplines will be represented: anatomy, biochemistry and molecular biology, investigative pathology, pharmacology, and physiology. **Authors will be present at their boards from 7:00 – 8:00 PM.**

#### Poster

SAT. 7:00 PM—SAN DIEGO CONVENTION CENTER, SAILS PAVILION

- SH1** Optical Imaging Tools for Elucidating the Roles of Anions in Cellular Signaling. **S. Dodani.** The University of Texas at Dallas. (124.1)
- SH2** Tissue Factor Enhances the Alveolar Epithelial Barrier Integrity During Acute Lung Injury. **H. Sucharski, N. Putz, C. Shaver, L. Ware, J. Bastarache.** Vanderbilt University. (745.2)
- SH3** Reinforcing Potency and Effectiveness of Synthetic Cathinones: Potency Versus Selectivity for DAT. **B.M. Gannon, A. Sulima, K.C. Rice, M.H. Baumann, G.T. Collins.** The University of Texas Health Science Center at San Antonio, National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism, National In, National Institute on Drug Abuse and National Institutes of Health Intramural Research Program. (681.7)
- SH4** Structure-Based Drug Design to Overcome Temozolomide Resistance in Glioblastoma (GBM) Through a Dual Inhibition of Mgmt and Base Excision Repair. **H. R. Madala, S. R. Punganuru, V. Arutla, K. Srivenugopal.** Texas Tech University Health Sciences Center. (281.6)
- SH5** CRISPR-Cas9 Knock out of Gravin Variant 1 Impairs In Vitro Angiogenic Sprouting. **A. Ali, A. Spagnolia, M. Hull, M. Geffre, P. Bialk, E. Kmiec, B.D. Grove.** University of North Dakota School of Medicine and Health Sciences and Helen F. Graham Cancer Center and Research Institute. (518.7)
- SH6** Remodeling of Cardiac Energy Metabolism During Heart Failure. **L. Kalfhues, K. Bottermann, L. Leitner, U. Flögel, A. Gödecke.** Heinrich-Heine University of Düsseldorf, Germany. (903.2)
- SH7** New RiPP Family Incorporates Alpha-N-Methylations into Ribosomally Encoded Peptide Natural Products. **M. Freeman.** University of Minnesota. (271.1)
- SH8** Dopamine Transporter Activation Reduces Kv2.1 Activation Potential and Cluster Size. **J. Lebowitz, J.A. Pino Reyes, K. Divita, C. Henckel, M. Lin, G.E. Torres, H. Khoshbouei.** University of Florida College of Medicine. (553.5)
- SH9** The Muscle-Specific Ubiquitin Ligase MuRF1 Regulates Autophagy via FoxO1/3 Ubiquitination to Inhibit NF-B Signaling and Protect Against Cardiac Inflammation *in Vivo*. **T.L. Parry, J.C. Schisler, J. M. Mwiza, J.K. Durand, A.S. Baldwin, M.S. Willis.** University of North Carolina. (287.5)

- SH10** Malaria Derived Extracellular Vesicles Inhibit Neutrophils ROS Production and NETs Formation. **K.A. Babatunde, M. Walch, I. Fellay, S. Kharoubi-Hess, L. Filgueira, I. Ghiran, P-Y. Mantel.** University of Fribourg, Switzerland and Harvard Medical School. (519.1)
- SH11** Examining the Role of Gut Dysbiosis in Neuroinflammation and Hypertension in a Model of Obstructive Sleep Apnea. **D. Durgan, B.P. Ganesh, J. Nelson, J. Eskew, N. Ajami, J. Petrosino, R. Bryan.** Baylor College of Medicine, The University of Texas Health Science Center and Mercer University. (582.2)
- SH13** Cancer-Associated Fusions of the Protein Kinase C Kinase Domain Are Loss-of-Function. **A-A.N. Van, T.R. Baffi, M.T. Kunkel, C.E. Antal, A.C. Newton.** University of California and San Diego. (687.6)
- SH14** Non Parenchymal Wnts Regulate Beta-Catenin Signaling in Murine Liver Zonation and Regeneration. **M. Preziosi, H. Okabe, M. Poddar, S. Singh, S. Monga.** University of Pittsburgh. (415.4)
- SH15** 3D Contrast Techniques for Visualizing Anatomy and Their Application for Human Education, Vertebrate Biomechanics and Paleobiology. **C.M. Holliday, F. McGetchie, L. Johnson, C. Hill, K. Sellers, K. Middleton, S. Sullivan, J. Schiffbauer.** University of Missouri. (642.3)
- SH16** A Conserved Pain Syndrome Resulting from the Acute Activation of TRPA1 by Chemotherapy Drugs. **N. Boiko, E. Montano, K.M. Hargreaves, B.A. Eaton, J.D. Stockand.** The University of Texas Health Science Center at San Antonio. (750.4)
- SH17** Leveraging Mouse Liver Co-Expression Networks and Human Lipid GWAS Data to Identify and Validate Cholesterol Metabolism Genes. **B.W. Parks, Z. Li, J. Nguyen, F. Leyva-Jaimes.** University of Wisconsin—Madison. (400.1)
- SH18** Blood-Brain Barrier Penetrant and Orally Bioavailable Antidotes to Organophosphate Poisoning. **Y-J. Shyong, A. Garcia, Y. Sepulveda, Z. Radić, J. Momper, P. Taylor.** Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California and San Diego. (688.4)
- SH19** Desmosomal Cadherins Desmoglein-2 or Desmocollin-2 Regulate Intestinal Epithelial Barrier Function and Mucosal Repair. **D. Kusters, S. Flemming, A-C. Luissint, R. Hilgarth, C. Parkos, A. Nusrat.** University of Michigan. (286.10)
- SH20** New in Vivo MicroRNA Biotechnology Reveals Specific Roles for the *miR-200* Family in Craniofacial Development. **M.E. Sweat, W. Yu, S. Eliason, Y.Y. Sweat, H. Cao, L. Hong, B.A. Amendt.** University of Iowa, Craniofacial Anomalies Research Center and University of Iowa College of Dentistry. (776.13)
- SH21** Metabolic Syndrome and the Role of GLP-1 Receptor Agonists in a Model of Postmenopausal Pcos. **E.D. Torres Fernandez, D.G. Romero, L.L. Yanes Cardozo.** University of Mississippi Medical Center. (766.2)
- SH22** Cohesin Loss Eliminates All Loop Domains. **S.S. P. Rao, S-C. Huang, B. Glenn St. Hilaire, J.M. Engreitz, E.M. Perez, K-R. Kieffer-Kwon, A.L. Sanborn, S.E. Johnstone, G.D. Bascom, I.D. Bochkov, X. Huang, M.S. Shamim, J. Shin, D. Turner, Z. Ye, A.D. Omer, J.T. Robinson, T. Schlick, B.E. Bernstein, R. Casellas, E.S. Lander, E. Lieberman Aiden.** Stanford University, Baylor College of Medicine, Broad Institute of Massachusetts Institute of Technology and Harvard, Lymphocyte Nuclear Biology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, N and New York University. (256.1)
- SH23** Determining the Effects of E-Cigarette Vapor on Oral Epithelial Cells in a Cultured Cell Model. **M. Duggar, H. Swanson, M. Hill-Odom.** University of Kentucky and Xavier University of Louisiana. (692.3)
- SH24** Expression of *SIRP $\alpha$*  Tailless Mutant in Mice Impairs Naïve CD4+ T Cell Adhesion to Immobilized ICAM-1 and TCR Induced Proliferation. **F.E. Velázquez Planas, A.E. Autio, G. Newton, C. Parkos, F.W. Lusciuskas.** Brigham and Women's Hospital and University of Michigan. (280.1)
- SH25** Use of Systematic Stimulation Mapping and Functional/structural Imaging to Improve Localization of Seizure Onset in Patients with Drug-Resistant Epilepsy. **R.C. Blanco Prado, C. Drees, J.A. Thompson.** University of Colorado Anschutz Medical Campus. (782.4)
- SH26** Ghrelin Directly Stimulates Fatty Acid Oxidation in Skeletal Muscle. **E. Kraft, D. Dyck.** University of Guelph, Canada. (767.16)
- SH27** Quantitative Phosphoproteomic Analysis of Feedback Networks in T Cell Signaling. **A. Salomon, J. Belmont, Q. Ji.** Brown University. (261.2)
- SH28** Influence of Liver-Specific Ablation of Gp78 E3-Ligase on Hepatic Cytochrome P450-Dependent Drug Metabolism: Clinical Implications. **D. Kwon, S-M. Kim, M.A. Correia.** University of California, San Francisco. (833.1)
- SH29** CXCR3 Regulates CD+ T Cell Cardiotropism and Maladaptive Cardiac Remodeling Through Mechanisms Involving ICAM1-Mediated Adhesion. **N. Ngwenyama, A. Salvador, T. Nevers, F. Velázquez, M. Aronovitz, P. Alcaide.** Tufts University and Tufts Medical Center. (280.3)
- SH30** SLC26A3 (DRA) Deficient Mice Display an Acidic Colonic Ph-Microclimate, Develop a Strongly Altered Microbiome and Colonic Inflammation. **A. Kini, M. Basic, A.K. Singh, B. Riederer, D. Römermann, S. Suerbaum, A. Bleich, T. Strowig, U. Seidler.** Hannover Medical School, Germany and Helmholtz Center for Infection Research, Germany. (747.1)
- SH31** Interrogating Endogenous Neuromodulatory GPCR Signal Processing by Real-Time Imaging of cAMP Dynamics Through Intact Neuronal Circuits. **B.S. Muntean, S. Zucca, C.M. MacMullen, M.T. Dao, C. Johnston, H. Iwamoto, R.D. Blakely, R.L. Davis, K.A. Martemyanov.** Scripps Research Institute and Florida Atlantic University. (127.2)

- SH32** Structural Characterization of KRAS with a Novel Interactor, Argonaute 2. **J. Waninger, S. Shankar, R.F. Siebenaler, T.S. Beyett, J.J. Tesmer, A.M. Chinnaiyan.** University of Michigan. (695.6)
- SH33** Personalized Gene Expression Profile Information Predicts Severity of Systemic Sclerosis Despite Heterogeneity of Disease. **Z.I. Johnson, T. Medsger, T. Li, C. Feghali-Bostwick, Y. Conley, C.C. Yates.** University of Pittsburgh, AccuraScience and Medical University of South Carolina. (414.10)
- SH34** Can Daytime Measures of Respiratory Sinus Arrhythmia and Breathing Ability Serve as Biomarkers of OSA? **C.M. DeLucia, S. Barreda, J. Vranish, E.F. Bailey.** Univ. of Arizona, Univ. of California, Davis and Univ. of Texas at Arlington. (913.4)
- SH35** The Effects of Nitric Oxide Synthase Inhibitors on Mitochondrial Respiration in Isolated Mouse Brain Mitochondria. **J.A. Sperling, S.S. V. P. Sakamuri, V.N. Sure, M.H. Dholakia, N.R. Peterson, R. Satou, P.V. G. Katakam.** Tulane University School of Medicine. (697.9)
- SH36** Chemorepulsion as a Novel Therapeutic Concept to Inhibit Pancreatic Cancer Metastasis. **B. Niclou, X. Li, A. Zessler, R. Adam, D. Briscoe, D. Bielenberg.** Boston Children's Hospital. (677.12)
- SH37** The Antithrombotic Effects of 12-LOX Derived Metabolites of DPA,  $\omega$ -6. **A. Chen, J. Yeung, A. Szatkowski, M. Jackson, J. Watson, C. Freedman, A. Das, T. Holman, M. Holinstat.** University of Michigan, University of Illinois at Urbana—Champaign, University of California and Santa Cruz.
- SH38** Effect of Metabolic Syndrome and Aging on Coronary Artery Disease Severity and Ca Dysregulation in Coronary Smooth Muscle in Ossabaw Miniature Swine. **J.K. Badin, R.S. Bruning, M. Sturek.** Indiana University School of Medicine. (770.16)
- SH39** CD99L2 as a Major Regulator in Human Transendothelial Migration. **N.S. Rutledge, W.A. Muller.** Northwestern University. (280.9)
- SH40** A Redesigned Pharmacology Series Increases Students' Satisfaction and Is Associated with Improved Performance in Therapeutics. **K. Brandl, S. Schneid, S. Tsunoda, L. Awdishu.** Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California and San Diego. (549.4)
- SH41** Developmental Differences in the Contribution of PKC Signaling to Chronic Hypoxia-Induced Pulmonary Arterial Tone. **S. Yan, J.R. Sheak, N.L. Jernigan, B.R. Walker, T.C. Resta.** University of New Mexico Health Sciences Center. (628.5)
- SH42** Microbiota-Derived Indole Metabolites Provide a Novel Pathway for Regulation of Intestinal Homeostasis. **E.E. Alexeev, D.J. Kao, K.B. Mills, T.R. Lemke, J.M. Lanis, J.S. Lee, A.S. Dowdell, S.P. Colgan.** University of Colorado Anschutz Medical Campus. (286.8)

# Anatomy

## 14. CONTINUING EDUCATION IN THE ANATOMICAL SCIENCES: WHERE ARE WE? WHERE SHOULD WE BE? AND HOW CAN WE GET THERE?

### Symposium

SAT. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

COCHAired: W. BROOKS AND A. WILSON

- 8:30 Supply and Demand: Analysis of Continuing Education at the National Level. **William Brooks**. University of Alabama at Birmingham.
- 9:00 Gross Anatomy for Teacher Education (GATE): Continuing Education in Human Anatomy to Improve Secondary and Post-Secondary Instruction. **Amanda Swindall**. Jefferson State Community College.
- 9:30 Expanding the Educational Potential of the Human Anatomy Laboratory. **James Williams**. Rush University.

## 15. DEVELOPMENT AND DISEASE PHYSIOLOGY PLATFORM

### Symposium

SAT. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: J. RICHTSMEIER

### Developmental Biology/Morphology

- 10:30 Characterization of the Bent Bone Dysplasia Mouse: Conditional Knock-In of *Fgfr2<sup>M391R</sup>*. **D. Rigueur, A. Merrill**. University of Southern California. (776.17)
- 10:45 **15.1** *Six2* Regulates Palate Development by Inhibiting Palatal Bone Formation During Development. **Y.Y. Sweat, M. Sweat, M. Mansaray, I. Saadi, S. Lachke, A. Butali, B. Sweat**. University of Iowa, University of Kansas Medical Center, University of Delaware, College of Dentistry and University of Iowa.
- 11:00 **15.2** Kynurenine, a Tryptophan Metabolite That Increases with Age, Induces Skeletal Muscle Atrophy and Reactive Oxygen Species. **H. Kaiser, K. Yu, B. Mendhe, S. Fulzele, M. Johnson, M. McGee-Lawrence, M.W. Hamrick**. Augusta University.
- 11:15 **15.3** Deficiency of Leukocyte-Specific Protein 1 (LSP1) Alleviates Asthma in a Mouse Model. **N.P. K. Le, A. Nascimento, D. Schneberger, C.C. Quach, X. Zhang, D. Wojciech, L. Liu, J. Gordon, B. Singh**. Western College of Veterinary Medicine, University of Saskatchewan, Canada, College of Medicine and University of Saskatchewan, Canada.
- 11:30 **15.4** The Microtubule Networks in Lung Epithelia Are Severed During *Klebsiella Pneumoniae* Infections. **M.D. Chua, C-H. Liou, A.C. Bogdan, H.T. Law, K-M. Yeh, J-C. Lin, L.K. Siu, J.A. Guttman**. Simon Fraser University, Canada, Tri-Service General Hospital, National Defense Medical Center, Taiwan and National Health Research Institutes, Taiwan.
- 11:45 **15.5** Effects of Chronic Ethanol Intake on High-Fat Diet Induced Metabolic Dysfunction in Mice. **C.R. Coker, S.S. Bingaman, A.C. Arnold, Y. Silberman**. Pennsylvania State University.

## 16. THE ART OF NEGOTIATION

### Symposium

SAT. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: P. HUSMANN

- 10:30 Don't Solve for (x), Solve for (Why). **Loren Buchanan**. Boston Scientific.
- 11:00 Money Talks: Navigating Negotiations in Early Career. **Samantha Simet**. University of Nebraska Medical Center.
- 11:30 The View from the Other Side: Everything is on the Table. **Lawrence Wineski**. Morehouse School of Medicine.

## 17. NOVEL METHODS FOR COMPREHENSIVE COURSE AND COMPETENCY ASSESSMENT

### Symposium

SAT. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: D. BREWER-DELUCE

### Education

- 10:30 **17.1** Clinically-Oriented Verbal Laboratory Assessments in the Gross Anatomy Pre-Clerkship Medical Curriculum That Are Designed to Assess Multiple Competencies. **C.M. Martin**. University of Western Ontario, Canada.
- 11:00 **17.2** Integrated Self-Study Medical Histology Modules: Innovative Approach. **I. Hajj Hussein**. Oakland University William Beaumont School of Medicine.
- 11:30 **17.3** Course Evaluations—Are We Gaining Insight, or Feeding Egos? Using Novel Evaluations to Uncover Value. **D. Brewer-Deluce, A. Palombella, J. Rockarts, B.C. Wainman**. Western University, Canada and McMaster University, Canada.

## 18. CARDIAC REGENERATION: LESSONS FROM NON-MAMMALIAN MODELS HYBRID SYMPOSIUM

### Symposium

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: P. LAFONTANT

### Cardiovascular

- 1:00 Regenerating a Heart in the Salamander **James Godwin** Mount Desert Island Biological Lab-JAX.
- 1:30 Polyploidization and Heart Regeneration in Zebrafish. **Juan Manuel Gonzalez-Rosa** Cardiovascular Research Center at Massachusetts General Hospital.
- 1:45 **18.1** 3D Imaging and Visualization of Zebrafish and Giant Danio Hearts by Serial Block Face Scanning Electron Microscopy. **G. Coffing, K. Hester, P.T. Kyaw, P.J. Lafontant**. DePauw University.
- 2:00 **18.2** Growth Factor Expression by Cardiac Tissues in the Leopard Gecko (*Eublepharis macularius*). **K. Jacyniak, M.K. Vickaryous**. University of Guelph, Canada.

2:15 **18.3** Neural Crest Derived Cardiomyocytes Regulate Cardiac Trabeculation and Adult Heart Function. **S. Abdul-Wajid, B. Demarest, H.J. Yost.** University of Utah.

## 19. DECIPHERING CELL BIOLOGY: THE INTERSECTION OF METABOLISM, FORCE TRANSMISSION, AND THE ACTIN CYTOSKELETON

### Symposium

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: K. DeMALI

### Cell Biology

- 1:00 Mitochondrial Positioning and Subcellular Energetics – A Mutualism that Governs Cell Migration **Alan Howe.** University of Vermont.
- 1:30 Metabolic Regulation of Spindle Assembly and Collective Cancer Invasion. **Adam Marcus.** Emory University.
- 2:00 Links Between Cell-cell Adhesion, Mechanotransduction and Metabolism. **Kris DeMali.** University of Iowa.

## 20. OUT ON A LIMB: DEVELOPMENT VARIATION DISEASE EVOLUTION

### Symposium

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: K. OBERG

### Evolution/Anthropology

### Bones/Muscle/Connective Tissue

### Developmental Biology/Morphology

- 1:00 **20.1** Role of *Hoxc* Genes in the Development of the Limb Integumentary Organ (Nail, Claw, or Hoof). **M.A. ROS Lasierra, M. Fernández-Guerrero, L. Delisle, N. Yakushiji-Kaminatsui, F. Darbellay, R. Pérez-Gómez, D. Duboule.** Instituto de Biomedicina y Biotecnología de Cantabria, Spain and Federal Institute of Technology, Switzerland.
- 1:30 **20.2** Functional Characterization of Gene Regulatory Elements. **N. Ahituv.** University of California, Los Angeles.
- 2:00 **20.3** Forward Genetics, Cilia, and Limb Development. **S. Weatherbee, N. Shylo, D. Xin, K. Christopher.** Yale University.

## 21. EDUCATIONAL RESEARCH STUDENT PLATFORM AWARD SESSION

### Award Competition

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: S. GREENE

### Education

Student and Postdoc award finalists present oral presentations to compete for the Educational Platform Award

- 1:00 **21.1** Effects of Dissection Experience on Medical Student Exam Performance in Gross Anatomy. **S.M. Dunham, P.R. Husmann.** Indiana University.

1:15 **21.2** Do Dissection- and Prosection-Based Laboratories Offer Comparable Learning Experiences? an Exploration of Student Learning in Two Laboratory Cohorts at the University of Guelph. **S.C. McWatt, G.S. Newton, L.C. Jadeski.** University of Guelph, Canada.

1:30 **21.3** The Role of Instructor Accent on Student Learning and Instructor Evaluation in a Digital Learning Environment. **C. Vinovskis, L. Lee.** University of Colorado Anschutz Medical Campus.

1:45 **21.4** Identifying Learning and Study Strategies as Predictors for Academic Performance in Gross Anatomy. **T. Ng, A. Hryniuk, C. Nichols, A.C. Edmondson.** Medical College of Georgia at Augusta University.

2:00 **21.5** Effects of Exam Group Time on Academic Performance. **H.B. Houston, C.A. Nichols, A.C. Edmondson.** Medical College of Georgia at Augusta University.

2:15 **21.6** Efficacy of Collaborative Testing for Long-Term Retention of Medical Knowledge. **K. Kleinberg, J.L. Eastwood, D.W. Rodenbaugh.** Burrell College of Osteopathic Medicine.

## 22. FRONTIERS IN CARDIOMYOCYTES DEVELOPMENT AND REGENERATION

### Symposium

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

COCHAired: J. WANG AND J. MARTIN

### Cardiovascular

### Developmental Biology/Morphology

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

- 3:00 Signaling Pathways Responsible for Cardiac Patterning in the Early Embryo. **Deborah Yelon.** University of California, San Diego.
- 3:30 From Tinman to Congenital Heart Disease Gene Discovery. **Rolf Bodmer.** Sanford Burnham Prebys Medical Discovery Institute.
- 4:00 Cardiomyocyte Development and Regeneration in Zebrafish. **Neil Chi.** University of California, San Diego.

## 23. THE ANATOMY OF GENDER

### Symposium

(Cosponsored by: AAA's Committee for Early Career Anatomists)

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: Y. CARTER

### Education

### Sex Differences and Women's Health

### Cell Biology

- 3:00 Teaching Gender Transition Through Anatomy. **Derek Harmon.** University of California, San Francisco.
- 3:30 The Clinical Anatomy of Gender Confirmation Surgery. **Maurice Garcia.** Cedars-Sinai Medical Center.
- 4:00 Trans\* Experience of Anatomy: Contributions to Medical School Competencies. **Yasmin Carter.** University of Massachusetts Medical School.

## 24. THE GENETICS AND DEVELOPMENT OF STRUCTURAL BIRTH DEFECTS

### Symposium

(Cosponsored by: Joint Session with Society for Craniofacial Genetics and Developmental Biology)

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: R. MARCUCIO

### Developmental Biology/Morphology

#### Cell Biology

3:00 Fibroblast Growth Factors: Critical Regulators of Osteogenic and Chondrogenic Growth Programs. **David Ornitz**. Washington University.

3:30 The Genetics of Skeletal Dysplasias. **Deborah Krakow**. University of California, Los Angeles.

4:00 **24.1** Mechanoresponsive Skeletal Stem Cells Acquire Primitive Neural Crest Identity During Distraction Osteogenesis. **M. Longaker**. Stanford University.

## 25. ANATOMY EDUCATION PLATFORM 1—ADVANCES IN EDUCATIONAL TECHNOLOGIES

### Symposium

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: L. LEE AND J. SHAFFER

### Education

3:00 **25.1** Quantifying Two Dimensional (2D) and Three Dimensional (3D) Anatomical Learning Using a Neuroeducational Approach. **S.J. Anderson, H. Jamniczky, O. Krigolson, K. Hecker**. University of Calgary, Canada and University of Victoria, Canada.

3:15 **25.2** Cerebral Aneurysmal Coiling in Virtual Reality—An Overview of Novice Skill Development. **O. Zaika, M. Boulton, R. Eagleson, S. de Ribapierre**. Western University, Canada.

3:30 **25.3** 3D Neuroanatomy: Using the Hololens for an Augmented Reality Approach in Neuroanatomy Education. **P. Holman, T. Bodnar, M. Ghomi, R. Choi, H. Moukhles, C. Krebs**. University of British Columbia, Canada.

3:45 Monkey-See, Monkey-Do: An Eye-Tracking Study Assessing the Efficacy of Feed-Forward Training in Histology Visual Literacy Development. **H. Koury, C.J. Leonard, P.M. Carry, L.M. J. Lee**. University of Colorado Anschutz Medical Campus, University of Colorado Denver and Children's Hospital Colorado. **(635.38)**

4:00 **25.4** The Use of Voluntary 3-D Technology and Upper-Class Peer-Mentoring to Enhance Anatomy Performance of Under-Represented Minority Students in Physical Therapy. **A. Ortiz, C. Bickley, M. Kliefoth**. Texas Woman's University—Houston.

4:15 **25.5** Studying Histology in 3D: Development and Evaluation of an Interactive Virtual Histology Learning Tool Using a 3D Model of the Renal Corpuscle. **M. Rivero, Y. Mu, J. Roth, T. Wilson, R. Eagleson, M. Sandig**. Western University, Canada and University of Waterloo, Canada.

## 26. KEYNOTE SPEAKER

### Lecture

SAT. 4:45 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

### Developmental Biology/Morphology

Welcome and introduction by AAA President, Philip Brauer

4:45 Chair's introduction.

4:55 How Basic Science Can Help to Inform Public Health and Improve Lives Globally. **Jeff Murray**. Bill and Melinda Gates Foundation

## Biochemistry and Molecular Biology

### 27. ASBMB GRADUATE STUDENT AND POSTDOCTORAL FELLOW CAREER DEVELOPMENT EVENT

#### Society Events

SAT. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6D

COCHAired: C. HEINEN AND T. O'CONNELL

**8:30 AM begins required check-in in the lobby area outside of room 6A. Invitation only.** Required participation for all Graduate and Postdoctoral Travel Award recipients.

### 28. ASBMB ANNUAL MEETING ORIENTATION FOR UNDERGRADUATE STUDENTS

#### Society Events

SAT. 11:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAired: J. PROVOST

Feeling overwhelmed by all the options? Not sure what sessions to attend? This meeting orientation will help you craft your personal game plan to get the most out of your national meeting experience.

### 29. ASBMB JUDGES' ORIENTATION FOR THE UNDERGRADUATE POSTER COMPETITION

#### Award Competition

SAT. 11:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAired: K. CORNELLY

COCHAired: K. DICKSON AND P. ORTIZ

Volunteer judges (Undergraduate faculty and PI's) should report to Room 6E for this orientation/training session. Drop-in's welcome (Faculty and PI's only) and must check-in with organizers during this orientation session.

### 30. ASBMB UNDERGRADUATE STUDENT RESEARCH POSTER COMPETITION

#### Award Competition

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 6B

CHAired: K. CORNELLY

COCHAired: K. DICKSON AND P. ORTIZ

**Advance competitor registration required. Competitor check-in begins at 12:00 PM .**

### 31. ASBMB EXPLORING CAREERS SPEED NETWORKING FOR UNDERGRADUATES

#### Workshop

SAT. 4:45 PM—SAN DIEGO CONVENTION CENTER, ROOM 6A

Scientists from a variety of career fields will meet with students and share advice about their career paths. All undergraduate student, ASBMB members and biochemistry registrants are welcome and encouraged to attend.

## Pathology

### 32. MEET THE MENTOR BREAKFAST

#### Society Events

(Sponsored by the ASIP Committee for Career Development and Diversity)

SAT. 7:30 AM—SAN DIEGO CONVENTION CENTER,  
ASIP OFFICE CORRIDOR

CHAired: T. PARRY

### 33. NEXTGEN SCIENCE: NEW DISCOVERIES OF GRADUATE STUDENTS AND POST-DOCTORAL FELLOW RISING STARS

#### Poster Discussion

(Sponsored by the ASIP Committee for Career Development and Diversity)

SAT. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: T. REAVES

COCHAired: E. MEDINA

8:30 Welcome and Introduction.

#### Postdoctoral Fellow Oral Presentations.

- 8:35 Opposite Effects of Knocking Out MT1 and MT2 Melatonin Receptor on Senescence and Fibrosis of Cholangiocytes and Hepatic Stellate Cells During Cholestatic Liver Injury. **N. Wu, K. Kyritsi, J. Venter, F. Meng, P. Invernizzi, F. Francesca Bernuzzi, K. Sato, E. Gaudio, T. Zhou, H.L. Francis, P. Onori, A. Franchitto, G. Alpini, S.S. Glaser.** Texas A&M Health Science Center, Baylor Scott & White Health, Humanitas Clinical and Research Center, Italy, Histological, and Forensic Medicine and Orthopedic Sciences, Italy and Eleonora Lorillard Spencer Cenci Foundation, Italy. (415.10)
- 8:45 Endothelial Cell IQGAP1 Is Required to Support Efficient Leukocyte Transmigration Both in Vitro and in Vivo. **D.P. Sullivan, P.J. Dalal, W.A. Muller.** Northwestern University. (280.2)

#### Postdoctoral Fellow Poster Presentations.

- P2 Bi-Directional Macrophage-Fibroblast Crosstalk Directs Wound Resolution Factors. **Z.I. Johnson, S. LoPresti, B. Lantonio, A. Wells, N. Ismail, B.N. Brown, C.C. Yates.** University of Pittsburgh. (414.2).

- P4 Biotin Deficiency Induces Th1 and Th17 Mediated Inflammatory Response in CD4+T Lymphocytes via Activation of mTOR Signaling Pathway. **A. Elahi, S. Sabui, A. Agrawal, H.M. Said.** University of California. (280.6).
- P6 Mechanisms of Concanavalin A-Induced Mediators of Hepatocyte Damage in Hepatic Stellate Cells: A Dual Role of Interferon Regulatory Factor-1. **R. Rani, S. Kumar, C.R. Gandhi.** Cincinnati Children's Hospital Medical Center. (150.2)

#### Graduate Students Oral Presentations.

- 9:35 PRAP1: A Novel Epithelial Secreted Protein. **A. Wolfarth, A. Neish.** Emory University. (406.8)
- 9:55 Multiplexed Immuno-Profiling of the Colorectal Carcinoma Microenvironment Using Archival Human Tissue. **J. Borowsky, J.A. Nowak, A. da Silva, T. Hamada, T. Morikawa, T.S. Twombly, K. Noshio, R. Nishihara, J.K. Lennerz, M. Giannakis, A.T. Chan, J.A. Meyerhardt, C.S. Fuchs, S. Ogino.** Dana-Farber Cancer Institute, Brigham and Women's Hospital and Harvard Medical School, Dana-Farber Cancer Institute and Harvard Medical School, The University of Tokyo, Japan, Sapporo Medical University School of Medicine, Japan, Massachusetts General Hospital and Harvard Medical School and Yale Cancer Center. (818.4)
- 10:05 IL-36 $\gamma$  Promotes Alveolar Macrophage Survival During Influenza Infection, Limiting Morbidity and Mortality. **A.N. Wein, P. Dunbar, S.R. McMaster, T.L. Denning, J.E. Kohlmeier.** Emory University and Georgia State University. (280.10)
- 10:15 Elevated Thrombospondin-2 Contributes to Delayed Wound Healing in Diabetes. **B. Kunkemoeller, T.R. Kyriakides.** Yale University. (414.3)

#### Graduate Students Poster Presentations.

- P3 Developing a New Polymeric System for Release of Immunomodulators for Treatment of Heart Failure. **F.d. J. Salazar-Ramírez, O. Lozano, H. Chapoy-Villanueva, G. Torre-Amione, G. García-Rivas.** Cátedra de Cardiología y Medicina Vascular, Escuela de Medicina and Tecnológico de, Mexico. (675.13).
- P5 Inflammatory Mediators and Fibroblasts. **L. T. James, T.A. Reaves.** Medical University of South Carolina. (414.7).
- P7 A Novel Fiji Workflow Demonstrates Dynamic Changes in Postnatal Respiratory Nuclei Innervation by *Nkx-2*- and *Olig3* derived Neurons. **J. Liu, S. Fair, B. Kaya, J. Zuniga, H. Mostafa, M. Alves, C. Czeisler, J. Otero.** The Ohio State University. (545.15).
- P9 Protease Activated Receptor-2 Mediates *Giardia*-Induced Disruptions of the Intestinal Mucus Barrier. **E.R. Fekete, C. Amat, T. Allain, M. Hollenberg, K. Chadee, A. Buret.** University of Calgary, Canada. (286.11).

- P11 Structure-Based Drug Design to Overcome Temozolomide Resistance in Glioblastoma (GBM) Through a Dual Inhibition of mGmT and Base Excision Repair. **H. R. Madala, S. R. Punganuru, V. Arutla, K. Srivenugopal.** Texas Tech University Health Sciences Center. (281.6).
- P13 Probiotic *Lactobacillus rhamnosus GG* Culture Supernatant Improves Energy Expenditure and Glucose Tolerance in High-Fat-High-Fructose Fed Mice Exposed to Chronic Intermittent Hypoxia Through Regulation of Intestinal Microbiota and Bile Acid Homeostasis. **Q. Liu, C. McClain, W. Feng.** University of Louisville. (41.1).
- P15 Chemorepulsion as a Novel Therapeutic Concept to Inhibit Pancreatic Cancer Metastasis. **B. Niclou, X. Li, A. Zessler, R. Adam, D. Briscoe, D. Bielenberg.** Boston Children's Hospital. (677.12).
- P17 Clinical Relevance of VM-M3 in Modeling Cancer Cachexia. **A.P. Koutnik, A.M. Poff, J. Deblasi, N.M. Ward, D.P. D'Agostino.** University of South Florida and Moffitt Cancer Center. (281.3)
- 11:20 Concluding Remarks.

### 34. MOLECULAR AND CELLULAR BASIS OF CANCER SYMPOSIUM: EMT, AN EVER-CHANGING PROCESS OF CANCER PROGRESSION

#### Symposium

SAT. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: D. STAIRS

#### Neoplasia

##### Epithelial and Mucosal Pathobiology

- 8:30 Liver Microenvironment Regulates Metastasis and Chemoresistance. **A. Wells.** Univ. of Pittsburgh.
- 9:05 Kaiso as a Master Regulator of EMT in Breast and Prostate Cancers. **C. Yates.** Tuskegee Univ.
- 9:40 NFκB Controls Twist2 in Esophageal Squamous Cancer. **D. Stairs.** Penn State College of Medicine.
- 10:15 Selective Autophagy in Mammary Carcinoma Differentiation and Metastasis. **J. Debnath.** Univ. of California, San Francisco.
- 10:50 Epithelial-Mesenchymal Plasticity in Carcinoma Metastasis. **J. Yang.** UCSD.
- 8:45 **35.2** Antenatal Exposure to Secondhand Smoke Impacts Growth and Cardiopulmonary Energetics in 4-Week-Old Mice. **K.M. Hirschi, K. Egbert, C. Clark, N. Mella, E. Plathow, J.F. Mejia, J.A. Arroyo, P.R. Reynolds.** Brigham Young University.
- 9:00 **35.3** Uremic Toxins Are Conditional Danger- or Homeostasis-Associated Molecular Patterns, Which Are Highly Selective Increase Rather Than Purely Passive Accumulation, in Chronic Kidney Disease and Coronary Arterial Disease. **Y. Sun, Y. Lu, G. Nanayakkara, Y. Li, H. Fu, C. Johnson, Y. Shao, W.Y. Yang, H. Wang, R. Li, X. Yang.** Lewis Katz School of Medicine, Temple University and Shanxi Provincial People's Hospital, People's Republic of China.
- 9:15 **35.4** Histopathologic Correlates of Irreversible Renal Injury in Renal Artery Stenosis. **M. Osman, K. Sonu, O. Kaya, Z. Hu, L. Karen, J.P. Grande.** Mayo Clinic and İnönü University, Turkey.
- 9:30 **35.5** Aberrant Retinal Angiogenesis, Structure, and Synaptic Morphology in an *in Vivo* Mouse Model of ROP. **O.J. Mezu-Ndubuisi, E. Macke, R. Kalavacherla, A. Nwaba, A. Ikeda.** University of Wisconsin—Madison and Vanderbilt University.
- 9:45 **35.6** Pre-Clinical Identification of Potential Molecular Diagnostic Biomarkers of Secondary Ischemia in Microvascular Fasciocutaneous Flaps. **E. Aksamitiene, V. Christopher, C. Mitchell Waters, E. Juskeviciute, S. Addiya, J.B. Hoek, R.N. Heffelfinger, E. Pribitkin.** Thomas Jefferson University.
- 10:00 **35.7** VEGF Is Required for the Initiation of Cerebral Cavernous Malformations. **A. Glading, P. DiStefano, T. Chen, H. Su, K. Whitehead.** University of Rochester, University of Utah, University of California, San Francisco.
- 10:15 **35.8** Caspase-Dependent Septic Pulmonary Microvascular Endothelial Cell Barrier Dysfunction Is Associated with Vascular Endothelial-Cadherin Disruption. **S.E. Gill, L. Wang, J. Chung, S. Mehta.** Lawson Health Research Institute, Canada.
- 10:30 **35.9** Rapid Flow-Induced  $G\alpha_{q/11}$  activation Occurs Upstream of Piezo1 Activation. **N.G. Dela Paz, J.A. Frangos.** La Jolla Bioengineering Institute.
- 10:45 **35.10** Prolonged Activation of STAT3 Mediates the IL-Induced Loss of Stress Fibers and Increase in Endothelial Permeability. **H. Alsaffar, N. Martino, K. Leyden, A. Adam.** Albany Medical College.

### 35. GO WITH THE FLOW: CARDIOVASCULAR BIOLOGY AND PATHOLOGY

#### Symposium

SAT. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: T. KYRIAKIDES

COCHAired: D. KARUNAKARAN

#### Cardiovascular

- 8:30 **35.1** Atg7-Dependent Autophagy Is Essential for Cardiac Function with High Fat Diet. **M. Tong, T. Saito, P. Zhai, S. Oka, J. Sadoshima.** Rutgers New Jersey Medical School.

**37. XVIII<sup>TH</sup> ANNUAL WORKSHOP ON GRADUATE EDUCATION IN PATHOLOGY: WELLNESS FOR STUDENTS AND FACULTY**

**Workshop**

(Sponsored by the ASIP Education Committee and the Association of Pathology Chairs)

SAT. 11:45 AM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARINA BALLROOM SALON G

CHAired: R.N. MITCHELL

COCHAired: B. DUCATMAN

*Registration Required*

- 11:50 Lessons Learned from Wellness Programs in Residency and Clinical Fellowships. **Wesley Naritoku**. University of Southern California.
- 12:05 Wellness in Research Training Programs. **Alana Iglewicz**. University of California, San Diego.
- 12:20 Concepts in Wellness and Mindfulness in Training Programs. **Rhonda Mason**. San Diego, CA.
- 2:35 Q+A

**38. BLOOD VESSEL CLUB™: INFLAMMATION, SURVIVAL, AND DEATH IN ATHEROSCLEROSIS**

**Symposium**

SAT. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: J. HOMEISTER

COCHAired: D. KARUNAKARAN

**Cardiovascular**

**Inflammation/Immunity**

**Metabolism and Metabolic Disease**

- 2:00 Inflammation and Human Atherosclerosis. **James Stone**. Massachusetts General Hospital.
- 2:45 Understanding Atherosclerosis Using Genetic Approaches in Mice. **Aldons Lusis**. University of California, Los Angeles.
- 3:30 **RIP** Kinases in Cardiometabolic Diseases **Denuja Karunakaran** University of Ottawa
- 4:15 **Regulation** of T Cells in Cardiovascular Disease. **Andrew Lichtman**. Brigham & Women's Hospital.

**39. BREAST CANCER AND GENE REGULATION WORKSHOP: ROLE OF CHROMATIN LANDSCAPE IN CANCER CAUSATION AND TREATMENT**

In Conjunction with the Molecular and Cellular Basis of Cancer Program

**Workshop**

SAT. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: P. IANNACCONE

COCHAired: D.C. WILLIAMS AND Q. YAN

**Breast Cancer**

**Gene Expression**

**Chromatin, Epigenomics**

- 2:00 Transcription-Based Approaches to Identify Regulatory Networks in Cancer. **M. Green**. Univ. of Massachusetts Medical School.
- 2:30 Chromatin Regulation of p53 in Cancer. **S. Lauberth**. UCSD.
- 3:00 Long-Range Chromatin Interactions in the Mammalian Genome. **B. Ren**. UCSD.
- 3:30 Targeting Gene Transcription in Cancer. **W.L. Kraus**. Univ. of Texas Southwestern Medical Ctr.
- 4:00 **39.1** The *PAX-5* Transcript Is Submitted to 3'UTR Editing Which Regulates Its Oncogenic Expression in Cancer Cells. **G.A. Robichaud, A-P. Beaugard, R. Guerrette, N. Crapoulet, N. Finn, É. St-Hilaire**. Université de Moncton, Canada, Atlantic Cancer Research Institute, Canada and Dr. Léon-Richard Oncology Centre, Canada.
- 4:15 **39.2** Mammary Epithelium-Specific Conditional Expression of Human Mutant Ki-Ras in Mice Generates Estrogen Receptor Alpha (ER)-Positive Mammary Adenocarcinomas. **S. Ando, R. Malivindi, S. Catalano, P. Rizza, I. Barone, S. Panza, D. Rovito, C. Emprou, J-M. Bornert, G. Laverny, D. Metzger**. University of Calabria, Italy and Université de Strasbourg, France.
- 4:30 **39.3** Transcriptomics Profiling of Breast Cancer Cells, MDA-MB-231, Exposed to TNF- $\alpha$ : Focus on Pro-Survival and Pro-Inflammatory Regulated Pathways. **D.F. Bauer, E.A. Mazio, K.F. Soliman**. Florida A&M University.
- 4:45 **39.4** Transcriptomic Hallmarks of Tumor-Stromal Interactions in Brain Metastasis. **D. Nguyen**. Yale School of Medicine.

**40. MECHANISMS OF NEUROLOGICAL DISEASE**

**Symposium**

SAT. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: W. TOURTELLOTTE

COCHAired: J. OTERO

**Neuroscience**

- 2:00 **40.1** Excessive UBE3A Dosage Impairs Retinoic Acid Signaling and Synaptic Plasticity in Autism Spectrum Disorders. **R. Hu**. Shanghai Institute of Biochemistry & Cell Biology.

- 2:15 **40.2** Molecular Targets Underlying the Anti-Inflammatory Effects of Thymoquinone in LPS Activated BV-2 Cells. **E. Taka, P. Mendonca, E.A. Mazzi, S.D. Reed, R. Reams, K.F. Soliman.** Florida A&M University.
- 2:30 **40.3** Tyrosine Kinase in Ulcerative Colitis Associated Compromised Microglial Functions. **N. Kumar, P. Kumar, J. Mishra.** Texas A&M University College of Pharmacy.
- 2:45 **40.4** The Attenuating Effects of 1,2,3,4,6 Penta-O-Galloyl- $\beta$ -D-Glucose (PGG) on the Expression of Proteins Involved in Alzheimer's Disease in LPS/IFN $\gamma$  Activated BV-2 Microglial Cells. **P. Mendonca, E. Taka, K.F. Soliman.** Florida A&M University.
- 3:00 **40.5** ELP1-Dependent SHP1 Phosphatase Regulation and Its Essential Role in Familial Dysautonomia Pathogenesis. **W. Tourtellotte.** Cedars-Sinai Medical Center.
- 3:15 **40.6** Determining the Effect of the Wnt/-catenin Pathway on the Ischemic Blood-Brain Barrier Using Induced Pluripotent Stem Cells. **S. Page, A. Al-Ahmad.** Texas Tech University Health Sciences Center.
- 3:30 **40.7** The Functional Role of Arginase 1 and Neutrophil Proteomics in Predicting Ischemic Stroke Outcome. **A.B. Petrone, K. Steele, R. Eisenman.** West Virginia University.
- 3:45 **40.8** New Prion Strain Generation Through Splenic Replication. **C.J. Sigurdson, P. Aguilar-Calvo, C. Bett, A. Sevillano, T.D. Kurt, J. Lawrence, K. Soldau, P. Hammarstrom, K. P.R. Nilsson.** University of California, San Diego and Linkoping University, Sweden.
- 4:00 **40.9** CHCHD2 Knockout Alters Mitochondrial Metabolism, Increases Sensitivity to Sulfasalazine, and Decreases Proliferation and Invasive Potential of Glioblastoma Cells Expressing EGFRvIII. **J. Lumibao, J-w.E. Chen, B. Harley, H.R. Gaskins.** University of Illinois at Urbana—Champaign.
- 4:15 **40.10** Mechanisms of the IDH1/2 Mutations and Its Association with Contradictory Survival of Glioblastoma Patients Versus AML Patients. **C. Van Noorden.** Cancer Center Amsterdam and VUmc, Netherlands.
- 2:30 **41.2** Ketones Drive Mitochondrial Uncoupling in Adipose Tissue. **C. Walton, B.T. Bikman.** Brigham Young University.
- 2:45 **41.3** Insulin and Ketones Elicit Disparate Effects on Mitochondrial Uncoupling in Adipose Tissue. **B.T. Bikman.** Brigham Young University.
- 3:00 **41.4** Liquid Sucrose Consumption Promotes Liver Lipid Accumulation, Fat Mass, and Glucose Intolerance Without Altering Circulating Insulin Levels. **S.J. Burke, H.M. Batdorf, T.M. Martin, D.H. Burk, R.C. Noland, W.D. Johnson, C.R. Cooley, M.D. Karlstad, J.J. Collier.** Pennington Biomedical Research Center and University of Tennessee Health Science Center.
- 3:15 **41.5** Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia. **M.C. Poffenbarger, D.R. Lathen, H.A. Ricks, A.M. Barlow, Z.F. Roth, B.T. Bikman, J.S. Tessem.** Brigham Young University.
- 3:30 **41.6** Glucose Limited Enhance the Cancer Stem Cell Population Through PKM2/AMPK-Dependent Signaling. **Y-C. Yang, M-H. Chien, M. Hsiao.** Taipei Medical School, Taiwan, Genomics Research Center and Academia Sinica, Taiwan.
- 3:45 **41.7** Significant Reduction in Full Metabolic Syndrome in Saudi Subjects with Elevated Fasting Glucose Through an Intensive Lifestyle Monitoring Programme of 12 Months. **H.A. Alfawaz, N.M. AL-Daghri.** King Saud University, Saudi Arabia.
- 4:00 **41.8** Type-I Interferon-Mediated Akt/mTORC2 Signaling Regulates Autophagy and Inflammasome Activation in Mouse Liver Injury/Sepsis Model. **J. Wells, M. Kader, K. Tamama, C. Yates, M. Scott, N. Ismail.** University of Pittsburgh School of Medicine and University of Pittsburgh School of Nursing.
- 4:15 **41.9** Effects of Epicatechin and Its Gut Metabolites on Beta Cell Function, Survival and Proliferation. **J.S. Tessem, T.J. Rowley IV, J.D. Ray, J.A. Herring, K.B. Kener, B.F. Bitner, M. Ross, M. Lopez, B.T. Bikman, A.P. Neilson.** Brigham Young University and Virginia Polytechnic Institute and State University.

#### 41. METABOLISM AND DISEASE: FROM MITOCHONDRIA AND mTOR TO MALIGNANCY

In Conjunction with the Molecular and Cellular Basis of Cancer Program

##### Symposium

SAT. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: E. WHITLEY

COCHAired: R.N. MITCHELL

##### Metabolism and Metabolic Disease

##### Neoplasia

- 2:00 **41.1** Probiotic *Lactobacillus rhamnosus* GG Culture Supernatant Improves Energy Expenditure and Glucose Tolerance in High-Fat-High-Fructose Fed Mice Exposed to Chronic Intermittent Hypoxia Through Regulation of Intestinal Microbiota and Bile Acid Homeostasis. **Q. Liu, C. McClain, W. Feng.** University of Louisville.
- 2:15 Differential Expression of mTOR Related Molecules in the Placenta of Gestational Diabetes Mellitus (GDM), Intrauterine Growth Restriction (IUGR) and Preeclampsia Patients. **K. Price, B. Kimbler, N. Knowlton, L. Franson, K.M. Hirschi, P.R. Reynolds, J.A. Arroyo.** Brigham Young University. (676.4)

#### 42. THE HISTOCHEMICAL SOCIETY (HCS) COUNCIL MEETING

##### Society Events

SAT. 5:00 PM—OFF-SITE LOCATION, GREYSTONE STEAKHOUSE, 685 5TH AVENUE, SAN DIEGO, CA 92101

##### Workshops & Events

By Invitation Only

#### 43. AJP EDITORIAL DINNER

##### Society Events

SAT. 6:30 PM—SAN DIEGO MARRIOTT MARQUIS & MARINA, PALOMAR

##### Workshops & Events

By Invitation Only

## Pharmacology

### 44. TEACHING INSTITUTE: FLIPPING NOT FLOPPING: ACTIVE LEARNING STRATEGIES FOR GRADUATE AND HEALTHCARE PHARMACOLOGY

#### Symposium

(Sponsored by: ASPET Division for Pharmacology Education (DPE))

SAT. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 14B

CHAired: A.L. GORMAN

COCHAired: S. RAHMAN

#### Education

- 10:30 Best Practices in Active Learning of Pharmacology. **L. Gorman**. Univ. of Central Florida Col. of Med.
- 10:50 Active Learning Techniques in Graduate Education. **D. Ponnath**. Long Island Univ. AMS Col. of Pharmacy.
- 11:10 Training in How Learners Learn. **N. Kwiek**. Ohio State Univ. Col. of Pharmacy.
- 11:30 Student and Faculty Perspectives on Active Learning Strategies. **K. Brandl**. Skaggs Sch. of Pharmacy and Pharmaceutical Sciences.
- 11:50 Let's Get Active TBL.
- 12:50 Panel discussion.

### 45. ASSESSING PHARMACOLOGY IN INTEGRATED CURRICULA

#### Symposium

(Sponsored by: ASPET Division for Pharmacology Education (DPE))

SAT. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 14B

CHAired: R. CARRIER

COCHAired: J. REUBEN

#### Education

#### Career and Professional Development

- 1:30 Introduction.
- 1:35 Utilizing Outcomes and Objectives to Improve Student Learning and Exam Development. **R. Carrier**. West Virginia Sch. of Osteopathic Med.
- 2:00 Pharmacology Blooms in Assessment. **J. Reuben**. Texas A & M Univ.
- 2:25 Assessing and Mapping Higher Order Thinking and Soft Skills. **S. Earle**. Univ. of Findlay.
- 2:50 Impact of Integration on Learner Outcomes. **H. Gottlieb**. Univ. of the Incarnate Word Feik Sch. of Pharmacy.
- 3:15 Question Development Session.
- 3:55 Conclusion.

### 46. CLINICAL PATHS FOR SOLUBLE EPOXIDE HYDROLASE INHIBITORS

#### Symposium

(Sponsored by: ASPET Division for Drug Discovery and Development (DDD))

SAT. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: J. IMIG

COCHAired: B. HAMMOCK

#### Drug Discovery and Development

#### Neuroscience

#### Cardiovascular

#### Drug Metabolism and Disposition

- 1:30 Introduction. **B. Hammock**. Eicosis and Univ. of California Davis.
- 1:40 Soluble Epoxide Hydrolase Inhibitors as Treatments for Renal Fibrosis and Chronic Kidney Disease. **J. Imig**. Medical Col. of Wisconsin.
- 2:05 Soluble Epoxide Hydrolase Inhibitors to Treat Depression and other CNS Related Disorders. **K. Hashimoto**. Chiba Univ.
- 2:30 Anti-Nociceptive Mechanisms of Action for Soluble Epoxide Hydrolase Inhibitors. **K. Wagner**. Univ. of California, Davis.
- 2:55 Clinical Path for Soluble Epoxide Hydrolase Inhibitors to Treat Neuropathic Pain. **W. Schmidt**. EicOsis.
- 3:20 Soluble Epoxide Hydrolase and Lipid Mediators in Sepsis and Inflammation. **D. Panigraphy**. Harvard Univ., Beth Israel Deaconess Medical Ctr.
- 3:45 Panel discussion.

### 47. GRADUATE STUDENT—POSTDOCTORAL COLLOQUIUM: TOOLS AND TRICKS FOR SUCCESS IN SCIENCE

#### Workshop

(Sponsored by: ASPET Mentoring and Career Development Committee)

SAT. 1:30 PM—SAN DIEGO MARRIOTT MARQUIS & MARINA, GRAND BALLROOM 1-3

CHAired: J. CLARK

#### Career and Professional Development

#### Education

- 1:30 Introduction. **J. Clark**. National Inst. of Mental Health.
- 1:35 Perfecting Your Profile: Optimizing LinkedIn To Land Your Dream Job. **K. Leonard**. Taylor-Leonard Corporation.
- 2:45 Succeed in Science: Focusing on the Question. **L. Fricker**. Albert Einstein Col. of Med.
- 3:55 Conclusion.

### 48. ASPET BUSINESS MEETING AND AWARDS PRESENTATION

#### Business Meeting

SAT. 4:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16AB

Hear updates on Society activities and initiatives and join us in recognizing excellence in pharmacology as we present the ASPET 2018 Scientific Achievement Awards, Travel Awards, and PhRMA Foundation Awards.

## Physiology

### 49. REFRESHER COURSE ON GI PHYSIOLOGY: NOT JUST THE GUT ANYMORE

#### Symposium

*Made possible, in part, by APS Strategic Partner ADInstruments*

(Sponsored by: APS Education Committee)

SAT. 8:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: J.M. SASSER

COCHAired: E.K. MERRITT

#### Education

Made possible in part by APS Strategic Partner: ADInstruments

- 8:00 Strategies to teach GI physiology. **D. Speck.** Univ. of Kentucky Med. Ctr.
- 9:00 Intestinal epithelial function. **J. Dominguez-Rieg.** Univ. of South Florida.
- 10:00 Strategies for investigating the interaction between the microbiota and the gut brain axis. **S. Collins.** McMaster Univ. Hlth. Sci. Ctr.
- 11:00 Immune interactions in the intestinal epithelium. **K. Edelblum.** Rutgers New Jersey Med. Sch.

### 50. ETG PRE-MEETING

#### Symposium

(Sponsored by: Epithelial Transport Group)

SAT. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

#### Metabolism and Metabolic Disease

#### Nutrition/Obesity

### 51. MCS PRESIDENT'S SYMPOSIUM: BIOMEDICAL ENGINEERING APPROACHES FOR STUDYING THE MICROCIRCULATION

#### Symposium

(Sponsored by: Microcirculatory Society (MCS))

SAT. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: S. PEIRCE-COTTLER

COCHAired: G. SCHMID-SCHÖNBEIN

#### Cardiovascular

- 9:30 Listening with light: photoacoustic microscopy of the microcirculation in vivo engineering microvasculature for investigation of health and disease. **A. Gonzalez.** Yale Univ.

- 10:00 Engineering microvasculature for investigation of health and disease. **F. Mac Gabhann.** Johns Hopkins Univ.
- 10:30 Computational systems pharmacology for microvascular disease. **S. Hu.** Univ. of Virginia.
- 11:00 A new view for old questions: rediscovering angiogenesis and lymphangiogenesis. **W. Murphy.** Univ. of Florida.

### 52. CEREBROMICROVASCULAR MECHANISMS IN COGNITIVE IMPAIRMENT: FROM AGING TO NEURODEGENERATION

#### Symposium

(Sponsored by: Microcirculatory Society (MCS))

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: Z. UNGVARI

COCHAired: V. GALVAN

#### Cardiovascular

- 1:00 Cerebromicrovascular dysfunction in Alzheimer's disease. **V. Galvan.** Univ. of Texas Hlth. Sci. Ctr., San Antonio.
- 1:20 Role of senescence in cerebromicrovascular impairment: a translational perspective. **A. Yabluchanskiy.** Univ. of Oklahoma Hlth. Sci. Ctr.
- 1:40 Microvascular damage and cerebral microhemorrhages in aging: new mechanisms. **S. Tarantini.** Univ. of Oklahoma Hlth. Sci. Ctr.
- 2:00 Assessing Mitochondrial Respiratory Function in Isolated Mouse Brain Microvessels Using Seahorse Xfe Analyzer: Role of Neuronal Nitric Oxide Synthase. **V.N. L. R. Sure, S.S. V. P. Sakamuri, J.A. Sperling, I. Merdzo, W.R. Evans, I. Rutkai, D.W. Busija, P.V. G. Katakam.** Tulane University School of Medicine. (577.5)
- 2:15 Optogenetic Stimulation of Pericytes Lacking Alpha Smooth Muscle Actin Produces a Decrease in Capillary Blood Flow in the Living Mouse Brain. **D. Hartmann, R.I. Grant, S.A. Harrill, T. Noonan, A. Lauer, A.Y. Shih.** Medical University of South Carolina and College of Charleston. (708.1)
- 2:30 Nrf2 Deletion Is Associated with Impaired BK<sub>Ca</sub> Channel Expression and Function in Rat Cerebral Arterial Muscle Cells. **D. Gebremedhin, D.R. Harder, J.H. Lombard.** Medical College of Wisconsin. (575.7)
- 2:45 **A.M. Sackheim, N. Villalba, A. Bonev, M. Nelson, K. Freeman.** University of Vermont. (703.4)

**53. THE ROLE OF TIEG1 IN DISEASE PROCESSES: FROM BENCH TO BEDSIDE****Symposium**

(Sponsored by: American Federation for Medical Research (AFMR))

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAIRED: N. RAJAMANNAN

COCHAIRED: J. HAWSE

- 1:00 The Immune Regulation of TIEG1. **Subramaniam Malayannan**. Mayo Clinic.
- 1:30 The Role of TIEG1 Tendons. **Sabin Bensamoun**. Univ. Technol. Compiègne, France.
- 2:00 The Role of TIEG1 in osteoporosis. **John Hawes**. Mayo Clinic.

**54. AVOIDING COMMON PITFALLS IN PRECLINICAL ANIMAL RESEARCH DESIGN****Symposium**

(Sponsored by: Animal Care and Experimentation Committee)

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAIRED: D. MICHELE

COCHAIRED: K. URAY

**Science Policy/Public Engagement**

- 1:00 Selecting the appropriate animal model in preclinical research. **James Fox**. MIT.
- 1:30 Translational preclinical research: What the FDA wants to know. **Valerie Hamilton**. Merck Sharp and Dohme Corp.
- 2:00 Addressing appropriate biological variables in NIH grant applications. **Tom Cheever**. NIAMS/NIH.

**55. SEX AND AGE AS BIOLOGICAL VARIABLES IN PHYSIOLOGY RESEARCH****Workshop**

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAIRED: G. YOSTEN

COCHAIRED: G. KOLAR

**Science Policy/Public Engagement****Sex Differences and Women's Health**

- 1:00 Incorporating sex as a biological variable. **Jane Reckelhoff**. Univ. of Mississippi Med. Ctr.
- 1:30 Incorporating age as a biological variable. **Steven Austad**. Univ. of Alabama.
- 2:00 Sex and age in physiology research: The NIH perspective. **Christine Maric-Bilkan**. NHLBI/NIH.
- 2:30 Rigor and reproducibility in sex- and age-related physiology research. **Barbara Alexander**. Univ. of Mississippi Med. Ctr.

**56. 5TH ANNUAL PHYSIOLOGICAL GENOMICS CONFERENCE****Symposium**

(Sponsored by: Physiological Genomics Group)

SAT. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

**57. WEH TRAINEE AWARD FINALISTS AND DATA DIURESIS****Award Competition**

(Supported by Data Sciences International, Portland Press and the Juan Carlos Romero Fund)

(Sponsored by: Water and Electrolyte Homeostasis Section)

SAT. 2:15 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

**Hypertension****Salt****Trainee Award Finalists Competition**

Sponsored by Portland Press

CHAIRED: P. BIE AND M. MADHUR

- 2:15 The Role of Mitochondrial Oxidative Stress in the Pathophysiology of Preeclampsia. **V.R. Vaka, K. McMaster, T. Ibrahim, D. Cornelius, L. Amaral, K. Wallace, B. LaMarca**. University of Mississippi Medical Center. (729.7)
- 2:30 CD14 as a Novel Negative Modulator of Immune System-Dependent Renal Damage and Salt-Sensitive Hypertension. **D.J. Fehrenbach, J.M. Abais-Battad, J. H. Dasinger, H. Lund, A.M. Geurts, D.L. Mattson**. Medical College of Wisconsin. (870.2)
- 2:45 Absence of the Na-Glucose Cotransporter SGLT1 Ameliorates Kidney Recovery in a Murine Model of Acute Kidney Injury. **J. Nespoux, R. Patel, W. Huang, H. Koepsell, B. Freeman, V. Vallon**. University of California, San Diego and VA San Diego Healthcare System and University of Würzburg, Germany. (849.5)

**Postdoctoral Award Finalists Presentations**

Supported by the Juan Carlos Romero Fund

- 3:00 Effects of Parental Dietary Protein Source on Hypertension, Renal Injury, and Renal Inflammation. **J. Abais-Battad, H. Lund, J.H. Dasinger, D. Fehrenbach, D. Mattson**. Med. Col. of Wisconsin. (883.2)
- 3:15 TNF Impairs Cerebral Blood Flow Autoregulation in Pregnant Rats. **J.W. Duncan, J.P. Warrington, H.A. Drummond, J.P. Granger, M.J. Ryan**. University of Mississippi Medical Center. (922.5)
- 3:30 Three-Dimensional Analysis of Potassium Deprivation-Induced Tubular Remodeling Using Optical Clearing. **T. Saritas, V. Puelles, J. McCormick, D. Ellison**. Oregon Health & Science University and University Hospital RWTH Aachen, Germany. (844.2)
- 3:45 **Mingle with Open Bar**

**Data Diuresis Brief**

Sponsored by DSI

CHAired: P. O'CONNOR AND A. POLICHNOWSKI

- 4:15 Effects of Vagus Nerve Stimulation in a Murine Model of Systemic Lupus Erythematosus. **K.W. Mathis, H. Stauss, G.S. Pham, S.S. Kim, D.V. Kulp.** Univ. of North Texas Hlth. Sci. Ctr., Ft Worth and Univ. of Iowa (870.8)
- 4:20 Kidney-Specific KO of the Circadian Clock Protein BMAL1 Lowers Blood Pressure in Male C57BL/6J Mice. **L.G. Douma, K-Y. Cheng, I.J. Lynch, M. Holzworth, S. Masten, D. Barral, A. Miller, K.A. Esser, C.S. Wingo, M.L. Gumz.** Univ. of Florida and North Florida/South Georgia VA Hlth. System, Gainesville. (905.6)
- 4:25 Envigo's Female Salt-Sensitive Rapp Rats are now Spontaneously Hypertensive and have Higher Frequencies of CD4+, CD4+ CD25+ and CD4+ CD25+ FoxP3+ T cells compared to Normotensive Salt-resistant Rapp Rats. **A.V. Pai, C.A. West, A. Souza, P.S. Kadam, E.J. Pollner, D.A. West, Jr., H. Ji, X.S. Wu, C. Baylis, K. Sandberg.** Georgetown Univ. and Univ. of Florida. (870.5)
- 4:30 Role of the Renal Nerves in Renal Damage and Immune Cell Infiltration in Dahl Salt-Sensitive Rats. **A.J. Alsheikh, H. Lund, J.H. Dasinger, J.M. Abais-Battad, D.J. Fehrenbach, D.L. Mattson.** Med. Col. of Wisconsin. (870.3)
- 4:35 Reduced Placental Expression of Regulator of G-Protein Signaling-2 (RGS2) and Preeclampsia. **K.J. Perschbacher, G. Dent, J.A. Sandgren, L.C. Saenz, D.A. Santillan, E.J. Devor, G.L. Pierce, M.K. Santillan, R.A. Fisher, K.N. Gibson-Corley, J.L. Grobe.** Univ. of Iowa. (911.6)
- 4:40 Hypertension Precedes Metabolic Syndrome in the ALMS1 (Alstrom Syndrome 1) Knockout Rat. **K.N. King-Medina, P.A. Ortiz.** Henry Ford Hlth. System and Wayne State Univ. Sch. of Med. (906.7)
- 4:45 **Mingle with Open Bar**

## 58. THE MEVALONATE PATHWAY: A FUNDAMENTAL PLAYER IN HUMAN DISEASE

**Symposium**

(Sponsored by: American Federation for Medical Research (AFMR))

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: A. ZEKI

COCHAired: S. GHAVAMI

- 3:00 Mevalonate pathway regulation of cell fate: autophagy, apoptosis, and ER stress. **Saeid Ghavami.** Univ. of Manitoba.
- 3:30 Mevalonate signaling, COPD, and cancer: The statins and beyond. **Robert Young.** Univ. of Auckland.

- 4:00 Targeting the mevalonate pathway and oxidized phosphatidylcholines in asthma: A new role for lipids in airway disease. **Andrew Halayko.** Univ. of Manitoba.

## 59. TRANSFORMATIVE TECHNOLOGIES ENABLING ECOLOGICAL ASSESSMENT OF HUMAN AND WILDLIFE PHYSIOLOGY

**Workshop**

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: K. SANDBERG

COCHAired: D. CROSSLEY

**Emerging Technologies**

- 3:00 Biotelemetry from the laboratory to the field and back. **Michael Axelsson.** Univ. of Gothenburg.
- 3:30 What have human studies using commercial wearable device technology taught us and where can we go from here? **Scott Collier.** Appalachian State Univ.
- 4:00 Walking the tightrope between stability and change: biologging reveals phenological and physiological plasticity in an arctic hibernator. **C. Loren Buck.** Northern Arizona Univ.
- 4:30 Helping teens choose2Snooze: Developing a mobile sleep app for teens. **Tyish Hall Brown.** Howard Univ. Col. of Med.

## 60. COMMUNICATIONS COMMITTEE SYMPOSIUM: SOCIAL MEDIA FOR THE PROFESSIONAL SCIENTIST

**Symposium**

(Sponsored by: APS Communications Committee)

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: B. GOODMAN

**Science Policy/Public Engagement****Career and Professional Development**

In this 90-minute interactive session organized by the APS Communications Committee, we'll discuss why social media remains a popular option for researchers who want to connect with colleagues about science and the unique discussions that social platforms enable among the research community. Established and emerging platforms popular with researchers, the use of analytics to measure social impact and best practices of popular scientists on social media will also be addressed.

## 61. DATA NCARNATION

## Award Competition

(Sponsored by: Neural Control and Autonomic Regulation Section)

SAT. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: A.J. MILLER

COCHAired: Y. JIANG

## Neuroscience

- 3:00 CCL2-CCR2 Signalling in the Hypothalamic Paraventricular Nucleus Elicits Sympathetic-Mediated Blood Pressure Elevations Through Monocyte and Lymphocyte Recruitment. **K. Elsaafien, W.S. Korim, C.N. May, S.T. Yao.** The Florey Institute of Neuroscience and Mental Health, Australia. (735.1)
- 3:10 Reduced Bone Marrow Adrenergic Receptor Signaling Is Protective Against Weight Gain and High Fat-Induced Hypertension. **N. Ahmari, T. Yang, W. Malphurs, C.J. Martyniuk, J. Zubcevic.** University of Florida. (918.8)
- 3:20 Splenic 6-Hydroxydopamine Worsens Renal Inflammation and Injury in a Murine Model of Systemic Lupus Erythematosus. **G.S. Pham, B. Osazuwa, O. Thomas, S.S. Vedantam, D.L. Fancher, K.W. Mathis.** University of North Texas Health Science Center, Texas Southern University and Texas Christian University. (736.4)
- 3:30 Dynamic Cerebral Autoregulation Impairment Persists Past Resolution of Symptoms in Collegiate Athletes Following Concussion. **J. Frantz, S. Sedaghat, L. Ryan, M. Wainman, S. Lyng, T. Sabo, K. Bell, S. Purkayastha.** Southern Methodist University, Northwestern University and The University of Texas Southwestern Medical Center. (920.3)
- 3:40 Extinction of Blood Pressure and Heart Rate Responses to Conditioned Fear. **A.P. Swiercz, J. Park, C.N. Young, P.J. Marvar.** The George Washington University and Emory University School of Medicine and Atlanta VA Medical Center. (737.4)
- 3:50 How Do the Carotid Chemoreceptors Modulate Ventilatory Control and Cardiovascular Regulation at Rest and During Exercise in COPD? **D. Phillips, S. Collins, C. Steinback, T. Bryan, E. Wong, M.S. McMurtry, M. Bhutani, M. Stickland.** University of Alberta, Canada. (884.2)
- 4:00 Hypertensive Actions of Long Chain Fatty Acids Are Paralleled by Toll-Like Receptor 4 Upregulation and Nuclear Factor- $\kappa$ B (NF $\kappa$ B) Activation in the Subfornical Organ. **C. Hurr, B.J. Ritchie, H. Simonyan, C.N. Young.** George Washington University. (591.2)
- 4:10 'Identifying Brain Networks Controlling Micturition and Continence in Mouse'. **A.M. J. Versteegen, N. Klymko, J.C. Geerling, J. Mathai, V.G. VanderHorst, P.M. Fuller, M.L. Zeidel.** Beth Israel Deaconess Medical Center and University of Iowa Hospitals and Clinics. (734.3)
- 4:20 Corticotropin-Releasing Hormone Receptor 2 in the Nucleus of the Solitary Tract Contributes to the Intermittent Hypoxia Induced Hypertension. **L. Wang, D. Nguyen, S. Cross, S. Mifflin.** University of North

- Texas Health Science Center. (885.11)
- 4:30 Epidural Spinal Cord Stimulation Acutely Reduces Efferent Postganglionic Sympathetic Nerve Activity in Humans. **S.W. Holwerda, M.T. Holland, C.G. Reddy, G.L. Pierce.** University of Iowa. (596.6)
- 4:40 Spinal Contusion Injury Induces Long-Lasting Changes in Homecage Activity and Respiration Which Correlate with Spontaneous and Evoked Indices of Neuropathic Pain. **H. Kloefkorn, S. Idlett, M. Halder, S. Hochman.** Emory University. (887.2)
- 4:50 TRPA1-Induced Pulmonary Spinal Sympathetic Afferent Activation Is Attenuated in Rats with Chronic Heart Failure. **R.J. Adam, Z. Xia, J.A. Shanks, G.J. Rozanski, S.J. Lisco, I.H. Zucker, H-J. Wang.** University of Nebraska Medical Center. (593.1)

## 62. EMERGING TOPICS IN MICROVASCULAR RESEARCH

## Symposium

(Sponsored by: Microcirculatory Society (MCS))

SAT. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: P. STAPLETON

COCHAired: T. SECOMB

## Cardiovascular

- 3:30 Probing for the role of fluid mechanical forces in controlling vascular permeability using microfluidic biomimicry. **J. Song.** The Ohio State Univ.
- 3:45 Cell transplantation impacts on microvascular growth and function. **Trevor Cardinal.** California Polytech. State Univ.
- 4:00 The pericyte microenvironment. **John Chappell.** Virginia Tech Carillon Res. Inst.
- 4:15 Emerging paradigms in microbiota dysbiosis and lymphatic inflammatory mechanisms. **Sanjukta Chakraborty.** Texas A&M Col. of Med.
- 4:30 Anti-inflammatory-pro-resolving strategies to abrogate a pro-thrombotic blockage. **F. Gavins.** LSU Health, Shreveport.
- 4:45 VE-cadherin controls mechanotransduction signaling in embryonic and postnatal lymphatic valves. **J. Scallan.** Univ. of South Florida.
- 5:00 Lymphatics in chronic disease: new functions and implications. **J. Rutkowski.** Texas A&M Col. of Med.
- 5:15 Bone microvascular dysfunction: a potential nexus between age-related cardiovascular and bone disease. **R. Brisby.** Univ. of Texas at Arlington.

## 63. MCS POSTER DISCUSSION AND RECEPTION

## Symposium

(Sponsored by: Microcirculatory Society (MCS))

SAT. 6:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: J. TWYNSTRA

COCHAired: J. SCALLAN AND P. STAPLETON

## Cardiovascular

## SUNDAY, APRIL 22

## Across Societies

**64. POSTER/ORAL PRESENTATION PRACTICE & MENTORING SESSIONS****Workshop**

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, PEER  
MENTOR POD

**Career and Professional Development**

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

**65. CAREER CORNER SESSIONS WITH DR. ADAMS****Workshop**

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER,  
CAREER CORNER

**Career and Professional Development**

Drop in or sign-up for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the “Career Corner” in the EB2018 Career Center located in Hall D beginning on Saturday, April 21. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

**66. ONE-ON-ONE RESUME CRITIQUE/CV, CAREER COUNSELING, ESSAY PERSONAL STATEMENT ASSESSMENTS****Workshop**

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CAREER  
COUNSELING ROOM

**Career and Professional Development**

Drop in or sign-up for one-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

**67. HOW TO CHOOSE YOUR IDEAL CAREER****Workshop**

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Do you want to find a career path that you'll enjoy and find rewarding? Of course! But HOW do you find such a path, especially since there are so many different directions scientists can go with their careers? There are more than FIFTY career options available to biomedical sciences PhD's. If you'd like to see a list of these career options, while learning about how to select the best option for you, then don't miss this thought-provoking and interactive workshop! Here you will learn about a logical, step-by-step process for exploring your career options and deciding which will provide the best fit for your own set of skills, values and interests.

9:00 Speaker. **B. Lindstaedt**. UCSF.

**68. GET UP WITH SOMETHING ON YOUR MIND****Workshop**

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Planning for academic/career/personal success is a process—a mode of striving to excel at any and all endeavors one undertakes. It is an ongoing process of planning, reviewing, refining, adjusting and/or changing goals, strategies and tactics to realize planned outcomes—achievement, success, recognition, rewards, power, etc. This seminar is designed to encourage individual responsibility for: 1) taking charge of one's own success; 2) focusing on being proactive; 3) being open and responsive to change; 4) applying strategies to assess one's skills, interests, and values on an ongoing basis; and 5) building support systems through effective utilization of mentoring and networking. Key topics: The Success Mind-set, Defining Purpose, Performance Curve, The Personal Audit, Academic/Career/Planning for Academic/Career/Life Success.

9:00 Speaker. **H. Adams**. H.G. Adams & Assoc., Norfolk, VA.

**69. CAREER BUILDING: HOW TO MAXIMIZE ONE'S PARTICIPATION IN A SCIENTIFIC CONFERENCE****Workshop**

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

First impressions count: Are you ready? This interactive workshop will help you to put your best foot forward and make the most of your time at the Experimental Biology meeting. Scientific conferences provide more than an opportunity to learn

about the latest research in your field, they can help you make connections that will build your career both now and into the future. In this workshop you will learn how to define your goals for a meeting, prepare for the conference, and plan your agenda so that you can maximize your experience both scientifically and professionally. Participants will also develop strategies for identifying and capitalizing on important networking opportunities and for maintaining and nurturing the relationships they establish during a conference. Don't miss this opportunity to learn how you can accelerate your future at the Experimental Biology meeting!

9:30 Speaker. **H. Dillon.** The Jackson Laboratory.

## 70. NEGOTIATION STRATEGIES FOR SCIENTISTS

### Workshop

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

### Career and Professional Development

This session introduces effective methods of negotiating with potential employers. Topics: The basic elements of successful negotiation, contexts of gender and culture, avoiding common pitfalls, leveraging your strengths, handling multiple offers, and closing the deal.

10:00 Speaker. **D. Behrens.** Univ. of California, Berkeley.

## 71. UNDERSTANDING FACULTY SEARCH COMMITTEES & FINDING JOB ADS

### Workshop

SUN. 11:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

### Career and Professional Development

Are Postdocs Always Essential? What do search committees look for? How do I find academic jobs offered in my field, or within a specific geographical area? Answers to these and other questions presented by Andrew Green, a veteran of the academic job search and numerous search committees.

11:00 Speaker. **A. Green.** Univ. of California, Berkeley.

## 72. MAKING MISTAKES WHEN SPEAKING: HOW TO HANDLE THEM

### Workshop

SUN. 11:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

### Career and Professional Development

Much attention, time and money are spent on polishing our interview behaviors. But when it comes to the real thing, we frequently find ourselves saying afterwards, "I can't believe I said that or did this." Dr. Blumenthal will teach you how to identify "triggers", antecedents to behaviors that cause us to say things or behave in ways we wish we didn't. She will teach you how to identify triggers before they happen and increase your chance of demonstrating the right behaviors for winning the job.

11:00 Speaker. **J. Blumenthal.** Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD.

## 73. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS

### Workshop

SUN. 11:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

### Career and Professional Development

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you."

11:00 Speaker. **E. Hayden.** Univ. of California, Santa Cruz.

## 74. JOB HUNTING IN BIOTECH PART 1: FINDING & APPLYING FOR SCIENTIST POSITIONS

### Workshop

SUN. 1:00 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CRC-1

### Career and Professional Development

In this seminar, you will learn how to prepare resumes and cover letters so you will be ready to search for research jobs in the biotech/pharma industry. Then, you will learn how to find and connect with scientists working at companies. Finally, you will learn how to execute job search strategies necessary for success on the biotech/pharma job market. After this seminar you will understand how to conduct the four job hunting techniques that comprise a comprehensive job search in the biotech industry.

1:00 Speaker. **B. Lindstaedt.** UCSF.

## 75. NETWORKING WITH STRANGERS IS REQUIRED FOR YOUR FUTURE

### Workshop

SUN. 1:00 PM—SAN DIEGO CONVENTION CENTER, HALL D  
EB 2018 CAREER CENTER, CRC-2

### Career and Professional Development

Networking is a crucial dimension of a job offer; from developing a resume to interviewing to the job offer. Where do I begin? What do I take for granted? How do I communicate the right behaviors for the job? And to whom? How much of the employer's business do I really have to know? To be at the right place at the right time, sometimes it takes just one person. But who is this person?

1:00 Speaker. **J. Blumenthal.** Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD.

**76. CREATING EFFECTIVE CV'S, COVER LETTERS, RESEARCH & TEACHING STATEMENTS****Workshop**

SUN. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Most of the cuts in the applicant pool are made solely on the basis of your written application materials. Do yours represent you in the strongest possible fashion? How should a cover letter and CV for Stanford differ from one addressed to faculty at San Jose State? And what exactly is a Statement of Teaching Philosophy. Advice will be provided on creating these documents and more for the academic job search.

1:00 Speaker. **A. Green.** Univ. of California, Berkeley.

**77. BUT I HAVE NO SKILLS! EXPLODING MYTHS & EXPLORING CAREER OPTIONS FOR PHDS****Workshop**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

Are the skills you developed in graduate training really useful outside of the academic lab? Many PhD candidates and postdocs exploring careers beyond the academy assume—incorrectly—that employers will not find them or their skills attractive. In this session you will have the opportunity to identify skills that you currently possess, and also to find career fields that might be a good fit for these skills.

2:00 Speaker. **J. Lombardo.** LifeWork Choices.

**78. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS****Workshop**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you.

2:00 Speaker. **E. Hayden.** Univ. of California, Santa Cruz.

**79. NETWORKING: A REQUIRED LIFE SKILL****Workshop**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

To succeed in today's competitive world of work, who you know can be as critical as what you know. Successfully networking, to develop contacts, is a required skill. Networking involves 1) making contacts, 2) establishing cordial relationships, and 3) ultimately bonding to mutually support each other and share information. This seminar explores skills and techniques germane to successful networking. During the session, Dr. Howard Adams will cover the following key topics: 1) Dimensions of Networking; 2) Networking to enhance one's career/professional development; 3) Networking concerns: How? When? Where? Why? 4) Tips for Successful Networking; 5) Do's and Don'ts of Networking.

2:00 Speaker. **H. Adams.** H.G. Adams & Assoc., Norfolk, VA.

**80. JOB HUNTING IN BIOTECH PART 2: INTERVIEWING FOR SCIENTIST POSITIONS****Workshop**

SUN. 3:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

This seminar is designed to help you improve your interview skills so that you will be better prepared to land a scientist position in the industry. At the end of the seminar, you will be able to:

- Respond effectively to the most common questions asked during industry interviews
- Answer behavior-based questions in an organized manner,
- Begin and end the interview experience with poise and professionalism.

(This is part 2 of a 3-part series. Each seminar can be taken separately, but together they provide comprehensive information about the industry job search process.)

3:00 Speaker. **B. Lindstaedt.** UCSF

**81. MAKING THE GRADE: JOB TALK/CHALK TALK****Workshop**

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Participants will learn to plan, structure and deliver an effective job talk. This seminar will key elements of the job talk and finally, how to capture the interest of a diverse (faculty, administrators, students) audience.

3:30 Speaker. **D. Behrens.** Univ. of California, Berkeley.

**82. NAILING THE JOB TALK & INTERVIEW PREP****Workshop**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Going Live: Conference Interviews, On-Campus Interviews, The All-Important Job Talk, and Negotiating the Offer.

4:00 Speaker. **A. Green.** Univ. of California, Berkeley.

# Anatomy

## 83. THE GENETICS OF ANATOMICAL DEVELOPMENT: NOBEL LESSONS FROM INVERTEBRATES PLENARY

### Lecture

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: P. TRAINOR

### Developmental Biology/Morphology

### Cell Biology

8:30 Chair's introduction.

8:35 **83.1** Gene Activity and Cell Mechanics during *Drosophila* Embryonic Development. **E. Wieschaus.** Princeton University.

9:15 **83.2** Determining Neuronal Fate in *C. elegans*. **M. Chalfie.** Columbia University.

9:55 Discussion.

## 84. MORPHOLOGICAL SCIENCES AWARD HYBRID SYMPOSIUM

### Symposium

SUN. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: K. TAMURA

### Developmental Biology/Morphology

Morphological Sciences Award Lecture featuring 2018 Young Investigator Award Recipient, Bhart-Anjan Bhullar

10:30 **84.1** The Origin of the Avian Head as told by Transformations in the Fossil Record and Embryonic Development. **B-A.S. Bhullar.** Yale University.

11:00 **84.2** Olfaction at Depth: Cribriform Plate Size Declines with Dive Depth and Duration in Aquatic Arctoids. **D.J. Bird, I. Hamid, B. Van Valkenburgh.** University of California, Los Angeles.

11:15 **84.3** How and Why to Scan All the Vertebrates—Open Access Data as a Transformative Tool. **A.P. Summers.** University of Washington.

11:30 **84.4** Functional Anatomy of the Masticatory Muscles in a Caviomorph Rodent, *Cavia porcellus*. **R.E. Druzinsky, A. Ulm, C.J. Vinyard, J. Iriarte-Diaz.** University of Illinois at Chicago and Northeast Ohio Medical University.

11:45 **84.5** New Fossil Discoveries from the Miocene Santa Cruz Formation of Argentina. **J.M. G. Perry, N. Toledo.** John Hopkins University School of Medicine and Museo de La Plata, Argentina.

## 85. CELL BIOLOGY AWARD HYBRID SYMPOSIUM

### Symposium

SUN. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: G. BRAR

### Cell Biology

R.R. Bensley Award Lecture in Cell Biology featuring 2018 Young Investigator Award Recipient, Elcin Unal

10:30 **85.1** Organelle Segregation and Quality Control During Meiotic Differentiation. **E. Únal, E. Sawyer, G. King, J. Goodman.** University of California, Berkeley.

11:00 **85.2** CDC42 Activation by Endothelin Regulates Neural Crest Cell Migration in the Cardiac Outflow Tract. **L.B. Ruest, K.R. Fritz, E.P. Jansen.** Texas A&M College of Dentistry.

11:15 **85.3** Electrophysiological Consequences of Congenital Heart Defects Shaped by Primary Cilia-Dependent Cardiac Developmental Processes. **L.A. Fitzsimons, J. Forrester, K. Budziszewski, A.M. Moran, A.J. Davidoff, K.L. Tucker.** University of Maine, Graduate School of Biomedical Science & Engineering, University of New England, College of Osteopathic Medicine, Maine Medical Center.

11:30 **85.4** Cold-Inducible RNA Binding Protein (CIRP) in Inflammation and Breast Cancer. **D.A. Lujan, N. Perrone-Bizzozero, E.J. Beswick, D.F. Kusewitt, R.S. Hartley.** University of New Mexico Health Sciences Center.

11:45 **85.5** Investigating the Synaptic Regulation of Kisspeptin/Neurokinin B/Dynorphin (KNDy) Neurons in a Mouse Model of Polycystic Ovarian Syndrome. **A.M. Moore, L.M. Coolen, M.N. Lehman.** University of Mississippi Medical Center.

## 86. EPITHELIAL DYSFUNCTION IN WOUND HEALING AND STRUCTURAL BIRTH DEFECTS

### Symposium

SUN. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: I. SAADI

### Developmental Biology/Morphology

10:30 **86.1** Novel Regulators of Epithelial Migration and Differentiation. **M. Dunnwald.** University of Iowa.

11:00 **86.2** Growing Evidence That Periderm Is Essential for Orofacial and Epidermal Development. **B.C. Schutte.** Michigan State University.

11:30 **86.3** SPECC1L: A Novel Cytoskeletal Regulator of Epithelial Organization in Craniofacial Morphogenesis. **I. Saadi.** University of Kansas Medical Center.

## 87. ANATOMY EDUCATION ROUNDTABLE ON LEARNING ANALYTICS

### Workshop

SUN. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 7AB

### Education

This will be an interactive session introducing learning analytics and techniques and how it can be leveraged by faculty and program directors in their research projects (for example: quality improvement, compliance and outcomes analysis projects).

Continental breakfast will be provided, based on availability S. Toufeeq Ahmed, Vanderbilt University Medical Center

## 88. REGENERATION OF THE SPINAL CORD, LIMBS AND MUSCULOSKELETAL SYSTEM

### Symposium

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: R. FISHER

### Bones/Muscle/Connective Tissue

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

### Neuroscience

2:00 **88.1** Tendon Developmental Plasticity and Functional Regeneration. **J.L. Galloway, X. Niu, R.R. Shah, N.L. Nerurkar, M. Noedi.** Massachusetts General Hospital and Columbia University.

2:30 **88.2** The Mammalian Blastema and Induced Regeneration in Mice. **K. Muneoka.** Texas A&M University.

3:00 **88.3** Molecular Mechanisms of Spinal Cord Regeneration. **K. Echeverri.** University of Minnesota.

## 89. ANATOMICAL VARIATION: DOES THE VITRUVIAN MAN EXIST?

### Symposium

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: J. DENNIS

### Evolution/Anthropology

2:00 **89.1** Variation: Anatomical Constant, Clinical Imperative, Educational Dilemma. **D.F. Royer.** University of Colorado School of Medicine.

2:30 **89.2** Iliocapsularis and Long Head of Triceps Brachii Innervation: Not Such "Textbook" Cases. **A. Breckling, M.W. Jones, C. Ferrigno.** University of Illinois at Chicago and Rush University.

2:45 **89.3** Rare Congenital Anomaly of the Serratus Posterior Superior Muscle. **G. Granite-Cohn, K.S. Lashley.** Uniformed Services University of the Health Sciences.

3:00 **89.4** Situs Inversus Totalis in a 96-Year-Old Female Cadaver: Genetic Insights. **M. Jenkins, A. Frolov, Y. Tan, D. Daly, C. Lawson, J. Martin.** Saint Louis University School of Medicine.

3:15 **89.5** Correlated Vascular Asymmetries in the Circle of Willis. **J. Cooperman, S. Cooperman, M. Habib.** University of Southern California.**90. HOW TISSUES ARE SHAPED: MULTICELLULAR DYNAMICS DURING DEVELOPMENT**

### Symposium

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: A. CZIROK

### Developmental Biology/Morphology

### Cell Biology

### Imaging

2:00 Neuronal Regulation of Organogenesis and Regeneration. **Sarah Knox.** University of California, San Francisco.

2:30 Delineating Mechanisms of Gradient Formation by BMPs in Zebrafish Embryo Development. **David Umulis.** Purdue University.

3:00 How are Collective Fluid-solid Transitions in Confluent Tissues Created by Cellular Processes? **Matthias Merkel.** Syracuse University.

## 91. PROMISE VS PERFORMANCE IN REALITY TECHNOLOGY

### Symposium

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: J.M. McBRIDE

### Education

2:00 **91.1** Incorporating Technology in Anatomy Education to Align with Educational Outcomes. **J. McBride.** Cleveland Clinic Lerner College of Medicine.

2:30 **91.2** Virtual Unreality—Promise vs. Performance of Technology in Anatomy Education. **B. Wainman, G. Pukas, L. Wolak, E. Zheng, G. Norman.** McMaster University, Canada and University of Toronto, Canada.

3:00 **91.3** Anatomy Educational Advances: From a Third Dimension to a New Frontier—Virtual Reality. **P.G. McMenamin.** Monash University, Australia.

**92. BIOMECHANICS AND THE EVOLUTION OF HUMAN LOCOMOTION****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: C.V. WARD

**Evolution/Anthropology****Vertebrate Paleontology**

- 4:00 **92.1** What Fossils Can and Can't Tell Us About Hominin Locomotor Evolution: Insights from Experimental Skeletal Biomechanics. **I.J. Wallace, N.B. Holowka.** Harvard University.
- 4:30 **92.2** Using Experimental Biomechanics to Reconstruct the Evolution of Hominin Locomotor Postures. **D.A. Raichlen, A.D. Gordon.** University of Arizona, University at Albany and State University of New York.
- 5:00 **92.3** Fossil Evidence for the Evolution of Hominin Locomotion. **C.V. Ward.** University of Missouri.

**93. TRANS-SYNAPTIC TALES: APPLICATIONS OF NEW VIRAL AND GENETIC APPROACHES IN NEURAL CIRCUIT MAPPING****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: X. XU

**Neuroscience****Cell Biology**

- 4:00 **93.1** New Hippocampal Circuit Organization Revealed by Viral-genetic Tracing and Functional Circuit Mapping. **X. Xu.** University of California, Irvine.
- 4:30 **93.2** Optogenetic, Tissue Clearing, and Viral Vector Approaches to Understand and Influence Whole-Animal Physiology and Behavior. **V. Gradinaru.** California Institute of Technology.
- 5:00 **93.3** Viral-genetic Mapping of Neural Circuit Organization of Nociceptive Neurons in the Thalamus. **M. Umorin.** Texas A&M University College of Dentistry.

**94. THE RELEVANCE OF SCALE IN BIOENGINEERING AND IMAGING OF CELLS, TISSUES AND ORGANS****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

COCHAired: L. OPPERMAN AND S. SIMON

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)****Imaging****Cell Biology**

- 4:00 **94.1** A Multiscale Analysis of Early Cardiogenesis Following VEGF Perturbations. **B.J. Rongish, A. Aleksandrova, M.B. Filla, E. Kosa, C.D. Little, A. Petersen, A. Czirik, S. Rugonyi, G. Rykiel, R. Lansford.** University of Kansas Medical Center, Oregon Health & Science University and Children's Hospital Los Angeles.
- 4:30 **94.2** Multiscale Regulation of Mechanosensing in Soft Tissues. **R. Kaunas.** Texas A&M University.
- 5:00 **94.3** Bio-Inspired Micropattern Modulates Stem Cell Fate and Directs Well-Ordered Tubular Tissue Formation. **X. Liu.** Texas A&M College of Dentistry.

**95. ANATOMY: WHAT IS IT GOOD FOR? UNCOVERING THE HIDDEN IMPACTS OF ANATOMY EDUCATION****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: A. WILSON AND M. LAZARUS

**Education**

- 4:00 **95.1** Professional Identity: What Is It, When Is It Formed, and What Is the Role of Anatomy in This Developmental Process? **J.N. Byram.** Indiana University School of Medicine.
- 4:30 **95.2** Who Am I? Investigating the Impact of Anatomy Education on Healthcare Students' Professional Identity. **M. Lazarus, S. Paynter, G. Stephens, C. Rees.** Monash University, Australia.
- 5:00 **95.3** Synergizing Non-technical Skill Development in Medical Education: From Anatomy Classroom to the In-Hospital Patient Setting and Back. **C. Wittich.** Mayo Clinic.

## Biochemistry and Molecular Biology

### 96. WAKE-UP! IT'S TRIVIA TIME

#### Society Events

(Sponsored by: ASBMB Membership Committee)

SUN. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps. Prize values increase over the course of the meeting, so come back each morning! ASBMB members and biochemistry registrants welcome. Space is limited with first come, first served.

### 97. ASBMB BUSINESS MEETING

#### Business Meeting

SUN. 8:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

### 98. ASBMB OPENING LECTURE: HERBERT TABOR RESEARCH AWARD

#### Lecture

SUN. 8:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

8:00 ASBMB Business Meeting and awardee introduction.

8:20 **98.1** Nutrient Regulation of Signaling and Transcription. **G.W. Hart**. Johns Hopkins University School of Medicine.

### 99. FASEB EXCELLENCE IN SCIENCE AWARD

#### Lecture

(Sponsored by: Federation of American Societies for Experimental Biology)

SUN. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

9:00 Awardee introduction.

9:05 **99.1** Nonsense-Mediated mRNA Decay and Human Disease: Genome Guardian and Executor. **L.E. Maquat**. University of Rochester Medical Center.

### 100. WALTER A. SHAW YOUNG INVESTIGATOR AWARD IN LIPID RESEARCH

#### Lecture

(Sponsored by: Avanti Polar Lipids, Inc.)

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6F

This award lecture is presented in the session, "Lipid signaling and metabolism," beginning at 10:00 a.m. Refer to session 103 for details.

10:00 Awardee introduction.

10:05 Probing the Structure, Dynamics and Regulation of Lipid Signalling Enzymes and Their Role in Human Disease. **J. Burke**. University of Victoria, Canada. (103.1)

### 101. BIOCHEMICAL COMMUNICATION BETWEEN THE MICROBIOME AND THE HOST

#### Symposium

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAired: L.V. HOOPER

10:00 **101.1** Host Microbe Interactions in the Primate Gut: Implications for Human Origins. **A. Gomez, M. Torralba, K.E. Nelson, R. Stumpf, R. Blekhman, K. Petrzalkova**. University of Minnesota, **J. Craig Venter Institute**, University of Illinois and Czech Academy of Sciences, Czech Republic.

10:30 **101.2** Metabolism, the Microbiome, and the Circadian Clock. **L.V. Hooper, Y. Wang, Z. Kuang**. The University of Texas Southwestern Medical Center.

11:00 **101.3** The Diet-Microbiota-Mucus Layer Axis as a Mediator of Intestinal Health and Disease. **E. Martens**. University of Michigan Medical School.

11:30 **101.4** The Gut Microbiome Connection to Parkinson's Disease. **S.K. Mazmanian**. California Institute of Technology.

**102. INTRINSICALLY DISORDERED PROTEINS AND THEIR REGULATION AND FUNCTION****Symposium**

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAired: J. DYSON

- 10:00 **102.1** Alpha-Synuclein Binds to Neuron-Specific Glycans. **E. Rhoades, M. Birol.** University of Pennsylvania.
- 10:30 **102.2** The Role of Disordered Regions in GPCR-G Protein Signaling. **M.M. Babu.** Medical Research Council Laboratory of Molecular Biology, United Kingdom.
- 11:00 **102.3** Disordered Regions as Regulators of Phase Transitions in Multivalent Proteins. **R.V. Pappu.** Washington University in St. Louis.
- 11:30 **102.4** How Do Intrinsically Disordered Viral Proteins Hijack the Cell? **H.J. Dyson.** Scripps Research Institute.

**103. LIPID SIGNALING AND METABOLISM****Symposium**

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAired: M. WAKELAM

- 10:00 Walter A. Shaw Young Investigator Award in Lipid Research awardee introduction.
- 10:05 **103.1** Probing the Structure, Dynamics and Regulation of Lipid Signalling Enzymes and Their Role in Human Disease. **J. Burke.** University of Victoria, Canada.
- 10:30 **103.2** A Golgi Lipid Signaling Pathway That Controls Neural Stem Cell Polarity in the Developing Neocortex. **V. Bankaitis, Z. Xie.** Texas A&M Health Science Center.
- 11:00 **103.3** Fatty Acid Compartmentalization. **R. Coleman.** University of North Carolina.
- 11:30 **103.4** Endosomal Lipids in Trafficking and Signaling. **J. Gruenberg.** University of Geneva, Switzerland.
- 12:00 **103.5** Using Lipidomics Pathway Analysis to Identify Potential Therapeutic Targets. **M. Wakelam, A. Nguyen, Q. Zhang.** Babraham Institute, United Kingdom.

**104. NOVEL ENZYMOLOGY****Symposium**

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAired: R.T. RAINES

- 10:00 **104.1** Ribonuclease: From  $K_{cat}/K_m$  to the Clinic. **R. Raines.** Massachusetts Institute of Technology.
- 10:30 **104.2** How Do Enzymes Evolve? **D.S. Tawfik.** Weizmann Institute of Science, Israel.
- 11:00 **104.3** Citrullination Inhibits Serpin Activity. **P.R. Thompson.** University of Massachusetts Medical School.
- 11:30 **104.4** Connecting Chemistry to Biology to Understand Why O-GlcNAc Transferase Is Essential. **S. Walker.** Harvard Medical School.

**105. RNA FORM AND FUNCTION****Symposium***(Sponsored by: ASBMB Minority Affairs Committee)*

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 1AB

- 10:00 **105.1** tRNA Methylation Controls Bacterial Multi-Drug Resistance. **I. Masuda, R. Matsubara, T. Christian, E.R. Rojas, S.S. Yadavalli, M. Goulian, K.C. Huang, Y-M. Hou.** Thomas Jefferson University, Stanford University and University of Pennsylvania.
- 10:30 **105.2** How to Balance the Many Roles of tRNAs During the Creation of New Genetic Codes. **A. Ellington, A. Maranhao, K. Baldrige, D. Tack, R. Thyer, L. Contreras.** The University of Texas at Austin.
- 11:00 **105.3** Bridging the Gap Between RNA Editing and Modification: A 10-Year Solution to a 25-Year Problem. **J.D. Alfonzo.** The Ohio State University.
- 11:30 **105.4** Functional Characterization and Design of Regulator RNAs Using Novel High-Throughput Tools. **L.M. Contreras, K. Haning, A.N. Leistra.** The University of Texas at Austin.

**106. STRATEGICALLY BUILDING YOUR CV AT EVERY CAREER STAGE****Symposium**

(Sponsored by: ASBMB Education and Professional Development Committee)

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAired: M. PAYNE

With the diverse career options available for scientists as well as the rapid increase in the use of online profiles, it is important to not only gain appropriate skills and experience in support of career development, but also to present a professional profile to the public and/or prospective employers that helps promote specific career objectives. In this session, speakers from both academia and industry will present strategies that students, trainees, faculty, and industrial scientists can use to ensure that their experiences are leading to the career path that they desire and that they are marketing themselves in the best possible manner to achieve their career goals. Presentations will be followed by a discussion panel.

- 10:00 Chair's introduction.
- 10:05 Career visualization and execution. **N. Blake.** UT Health San Antonio.
- 10:25 Finding your inner extrovert for career growth. **M. Canady.** Compendia, LLC and San Diego Biotechnology Network.
- 10:45 An unplanned career: from research to regulation. **R. To.** Bayer HealthCare.
- 11:05 Panel discussion.

**107. SYNTHETIC BIOLOGY****Symposium**

SUN. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: P. STAMBROOK

- 10:00 Playing with the molecules of life. **Peter Schultz.** Scripps.
- 10:25 A cargo-sorting DNA robot. **Lulu Qian.** Cal Tech.
- 10:50 Teaching ancient molecules new tricks: unlocking the potential of RNA synthetic biology. **Julius Luks.** Northwestern Univ.
- 11:15 Engineering membrane-bound microsystems as artificial cells. **Yuval Elani.** Imperial Col., London.
- 11:40 General discussion.

**108. CREST (CONNECTING RESEARCHERS, EDUCATORS AND STUDENTS) CONVERSATIONS****Society Events**

(Supported by National Science Foundation)

SUN. 12:15 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

CHAired: T. HERMAN

This event is located in the ASBMB Lounge, across from the ASBMB exhibit booth, #1316. CREST research teams will meet with Herbert Tabor Research Award lecturer, Gerald Hart and colleagues, to present protein models that will be used to aid in-depth discussions.

**109. ASBMB MEET THE SPEAKERS****Society Events**

SUN. 12:30 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

Visit the ASBMB Lounge, across from ASBMB Booth #1316, to meet the morning the presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

**110. ASBMB ADVOCACY TOWN HALL MEETING****Society Events**

(Sponsored by: ASBMB Public Affairs Advisory Committee)

SUN. 12:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6A

Join ASBMB's Public Affairs Advisory Committee (PAAC) for a town hall forum open to all EB registrants to address the impact of the current and future political climate on the life science research enterprise.

Doors will open at 12:20 p.m. and boxed lunches will be provided to the first 75 event participants, first come, first served.

**111. SEBM SPECIAL TOPICS IN SCIENCE, STUDENT-ORGANIZED SYMPOSIUM****Symposium**

SUN. 1:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: D. BOOTHMAN

Featuring presentations by:

- **I. Verma**, Salk Inst.,
- **K. Lamia**, Scripps,
- **P. Mischel**, UCSD

**112. ASBMB MEET THE SPEAKERS****Society Events**

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

Visit the ASBMB Lounge, across from ASBMB Booth #1316, to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

**113. ASBMB AWARD FOR EXEMPLARY CONTRIBUTIONS TO EDUCATION****Lecture**

(Sponsored by: ASBMB Education and Professional Development Committee)

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6C

Undergraduate Student Research Poster Competition award winners and Honor Society inductees will be announced / presented during this lecture.

2:30 Awardee introduction.

2:35 **113.1** Promoting Hypothesis-Driven Thinking in the Undergraduate Biochemistry Lab. **P.A. Craig**. Rochester Institute of Technology.

**114. ADVANCED BIOPHYSICAL AND BIOCHEMICAL APPROACHES TO MEMBRANE DYNAMICS (I)****Symposium**

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAired: C. SCHLIEKER

2:30 ESCRT Membrane Scission Revealed by Optical Tweezers. **J. Schöneberg, S. Yan, A.H. Bahrami, M. Righini, I-H. Lee, M-R. Pavlin, L-A. Carlson, D. Goldman, G. Hummer, C. Bustamante, J. Hurley**. University of California, Berkeley and Max Planck Institute of Biophysics, Germany. (542.2)

2:45 Nano-Scale Size Holes in ER Sheets Provide an Alternative to Tubules for Highly-Curved Membranes. **S. Bahmanyar, L. Schroeder, A. Barentine, S. Schweighofer, D. Baddeley, J. Bewersdorf**. Yale University and Yale School of Medicine. (542.7)

3:00 Biomechanical Control of Lysosomal Secretion via the VAMP7 Hub: A Tug-of-War Mechanism Between VARP and LRRK1. **T. Galli, G. Wang, S. Nola, S. Bovio, M. Coppey-Moisan, F. Lafont**. Institut National de la Santé et de la Recherche Médicale (INSERM) U894, Institute of, France, Institut Pasteur de Lille, National Center for Scientific Research UMR 8204-INSERM U1019, Centre H, France, Metropolitan, National Center for Scientific Research UMR7592 and Institut Jacques Monod, France. (542.10)

3:15 The Role of the Escrt Pathway in Prion Disease. **J. Lawrence**. University of California and San Diego. (542.14)

3:30 **114.1** Dynamic Functional Assembly of the Torsin AAA+ ATPase and Its Modulation by LAP1: A Novel Mode of Regulation for AAA+ ATPases. **C. Schlieker, A.R. Chase, E.R. Laudermitch, J. Wang, H. Shigematsu, T.R. Yokoyama**. Yale University and RIKEN Center for Life Science Technologies, Japan.

**115. ADVANCES IN MITOCHONDRIAL BIOCHEMISTRY****Symposium**

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: E.L. SEIFERT

2:30 **115.1** Loss of Mitochondrial Phosphate Carrier in Skeletal Muscle: Dissociation of Muscle Dysfunction from Lower ADP Phosphorylating Potential. **E.L. Seifert, L. Anderson-Pullinger, Y. Sharpadskaya**. Jefferson College of Biomedical Sciences.

2:45 Cytoplasmic PFK-2 Activity Affects Mitochondrial PDK4 Levels in the Heart. **M.F. Newhardt, M. Kinter, K.M. Humphries**. Oklahoma Medical Research Foundation. (536.9)

- 3:00 Oxidative Phosphorylation Complex Interactions in Intact Mitochondria. **B.M. Rabbitts, F. Liu, P. Lossi, R.S. Balaban, A.J. R. Heck.** National Heart, Lung, and Blood Institute, National Institutes of Health, FMP Berlin, Germany and University of Utrecht, Netherlands. (536.19)
- 3:15 The L Type Calcium Channel  $Ca_v1.2$  Modulates Mitochondrial Calcium Homeostasis and Cell Death. **M. Noterman, M-K. Shin, E. Vazquez-Rosa, C. Cintrón-Pérez, A. Rajadhyaksha, E. Taylor, A. Pieper.** University of Iowa, Weill Cornell Medicine and Cornell University. (538.12)
- 3:30 Sirtuin 4 Controls Leucine Metabolism and Insulin Secretion by Reversing Effects of Reactive Metabolites. **F.K. Huynh, K.A. Anderson, J.D. Stuart, Z. Lin, M.D. Hirschev.** Duke University Medical Center. (670.23)

## 116. CANCER SIGNALING

### Symposium

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

- 2:30 The Aggressive Nature of Prostate Cancer of African Americans Is Correlated with Massive Down-Regulation of Many Immunoregulatory Genes of Microenvironment. **F. Rahmatpanah, X. Zi, A. Sawyers, A. Agrawal, M. Lilly, M. McClelland, D. Mercola.** University of California, Irvine and Medical University of South Carolina. (804.60)
- 2:45 LIMD2 Is an Intracellular Activator of Integrin Linked Kinase(ILK) Activity and GSK-3/Akt/ $\beta$ -Catenin Signaling. **S. Dedhar, S. Awrey.** University of British Columbia, Canada and BC Cancer Research Centre, Canada. (666.1)
- 3:00 A Genome-Wide CRISPR-Cas9 Screen Identifies Importin- $\beta$ 11 as a Required Factor for  $\beta$ -Catenin Signaling in Colon Cancer. **M. Mis, Z. Steinhart, S. Angers.** University of Toronto, Canada. (804.11)
- 3:15 Effects of Resveratrol in Cell Migration and Invasion by Studying the CXCR4-CXCL12 Axis in Breast Cancer Cell Lines. **G.A. Arroyo-Martinez, M. Figueroa, K. Muñoz-Forti, G. Trossi, J. Robles, A.A. Maldonado, E. Suarez, A. Ruiz.** University of Puerto Rico at Ponce, Pontifical Catholic University of Puerto Rico and University of Puerto Rico at Mayagüez. (667.1)
- 3:30 Regulatory Mechanisms Controlling the Subcellular Localization and Activity of the RhoA GEF Net1 in Breast Cancer. **J.A. Frost, Y. Zuo, A. Ulu.** The University of Texas Health Science Center at Houston. (533.53)

## 117. GLYCOPOLYMER PROBES

### Symposium

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: J. KRAMER

- 2:30 Roles of Glycosaminoglycans in the Ang/Tie Signaling Axis. **M.E. Griffin, G.M. Miller, A.W. Sorum, L.C. Hsieh-Wilson.** California Institute of Technology. (673.14)
- 2:45 Harnessing Glycocalyx Interactions to Modulate Differentiation and Development. **M.L. Huang, A.L. Michalak, E.M. Tota, R.A. Smith, G.W. Triegeer, K. Godula.** University of California and San Diego. (673.16)
- 3:00 Probing the Role of Peptidoglycan Metabolism in *Helicobacter pylori* Helical Shape. **J.A. Taylor, B.P. Bratton, K.E. DeMeester, H. Liang, H.M. Jacobs, E. Kuru, Y.V. Brun, M.S. VanNieuwenhze, W. Vollmer, J.W. Shaevitz, C.L. Grimes, N.R. Salama.** University of Washington, Princeton University, University of Delaware, Indiana University, Newcastle University, United Kingdom and Fred Hutchinson Cancer Research Center. (673.27)
- 3:15 Mucus-Inspired Low-Fouling Barriers Based on Self-Assembled Glycopeptide Nanofibers. **G. Hudalla, A. Restuccia.** University of Florida. (673.13)
- 3:30 117.1 Glycocalyx Engineering with Tunable Synthetic Glycopolypeptides. **J. Kramer.** University of Utah.

## 118. HERBERT TABOR YOUNG INVESTIGATOR AWARD SYMPOSIUM

### Symposium

(Sponsored by: Journal of Biological Chemistry)

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAired: G. DEMARTINO

- 2:30 118.1 Structural and Functional Studies of the Streptococcal Fibrillar Adhesin CshA. **C. Back, V. Higman-Davies, M. Sztukowska, M. Till, M. Crump, R. Lamont, H. Jenkinson, A. Nobbs, P. Race.** University of Bristol, United Kingdom and University of Louisville School of Dentistry.
- 2:45 118.2 Sensing Changes in Cellular Iron Metabolism: Regulation of IRP1 by Fbx15 and Cytosolic Iron-Sulfur Cluster Assembly. **N.B. Johnson.** University of Wisconsin—Madison.
- 3:00 118.3 Selective Imaging of Internalized Proteopathic  $\alpha$ -Synuclein Seeds in Primary Neurons Reveals Mechanistic Insight into Transmission of Synucleinopathies. **R.J. Karpowicz, C.M. Haney, T.S. Mihaila, R.M. Sandler, E.J. Petersson, V.M.-Y. Lee.** University of Pennsylvania.
- 3:15 118.4 Asymmetric Configurations in a Reengineered Homodimer Reveal Multiple Subunit Communication Pathways in Protein Allostery. **M.F. Lanfranco, F. Garate, A. Engdahl, R. Maillard.** Georgetown University.
- 3:30 118.5 Complex Interplay of Kinetic Factors Governs the Synergistic Properties of HIV-1 Entry Inhibitors. **K. Ahn, M. Root.** Northwestern University and Thomas Jefferson University.

## 119. MOTION IS LOTION: NEW ROLES OF MOTION IN ENZYME FUNCTION

### Symposium

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: J. HARDY

- 2:30 The Structure and Mechanism of a Viral Genome Packaging Motor. **J.A. Hayes, B.J. Hilbert, N.P. Stone, C.M. Duffy, B. Sankaran, B.A. Kelch.** University of Massachusetts Medical School and Lawrence Berkeley National Laboratory. (792.18)
- 2:45 Small Compounds Modulating Bi-Directional Allosterism in Protein Kinases: A New Grip with an Old Trick. **R.M. Biondi, J.O. Schulze, E. Süß, L. Pietsch, K. Busschots, G. Saladino, F.L. Gervasio, M. Raab, M. Sanhaji, K. Strebhardt.** IBioBA-CONICET—Partner Institute of the Max Planck Society, Argentina, Frankfurt University Hospital, Germany and University College London, United Kingdom. (797.2)
- 3:00 Investigating Carrier Domain Positioning During Catalytic Turnover in Pyruvate Carboxylase. **J. Hakala, M. St. Maurice.** Marquette University. (526.39)
- 3:15 **119.1** Caspase-6 Self-Activation Enables Distinct Helix-Strand Interconversion Upon Substrate Binding. **J.A. Hardy, D.J. MacPherson, K.B. Dagbay.** University of Massachusetts Amherst.
- 3:30 Evolution of Caspase Allosterism and Enzyme Specificity. **C. Clark, R. Grinshpon, M.E. Thomas III, L. Yao, S. Shrestha.** The University of Texas at Arlington and North Carolina State University. (528.10)

## 120. PLANT BIOACTIVE NATURAL PRODUCTS: DISCOVERY, ENGINEERING AND APPLICATIONS

### Symposium

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: L. HICKS

- 2:30 **120.1** Natural Product Bioactive Peptide Discovery Using Pepsavi-Ms. **L. Hicks.** University of North Carolina at Chapel Hill.
- 2:45 Mitochondria-Targeting Peptide from *Hibiscus sabdariffa*. **S. Loo, A. Kam, J.P. Tam.** Nanyang Technological University, Singapore. (530.10)
- 3:00 Investigating Gibberellin Phytohormone Biosynthesis by Plant-Associated Bacteria. **R.J. Peters.** Iowa State University. (533.67)
- 3:15 Type III Polyketide Synthase Involved in Tropane and Granatane Alkaloid Biosynthesis. **N. Kim, J.C. D'Auria.** Texas Tech University. (537.3)
- 3:30 Montmorency Tart Cherry Anthocyanins: Dose-Dependent Antioxidant Activity Against Cholesterol Oxidation. **I.G. Medina Meza, M.D. Schweiss, C. Barnaba.** Michigan State University and University of Michigan. (656.30)

## 121. RNA RECOGNITION AND REGULATION

### Symposium

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAired: A.E. HARGROVE

- 2:30 Cisplatin Induces Differential Expression of Snornas and Affects Ribosome Methylation. **E. Reister, V.J. DeRose.** University of Oregon. (525.17)
- 2:45 Enzymatic Site-Specific Labeling of RNA for Affinity Isolation of RNA-Protein Complexes. **K.N. Busby, N.K. Devaraj.** University of California and San Diego. (790.2)
- 3:00 Multiple Mechanisms Driving Alternative Polyadenylation of Cyclin D1 (*Ccnd1*) Pre-mRNA Processing. **C.P. Masamha, E. Wagner.** Butler University and The University of Texas Medical Branch. (650.12)
- 3:15 Structure and Mechanism of a Bacterial t6A Biosynthesis System. **A. Luthra, W. Swinehart, S. Bayooz, P. Phan, B. Stec, D. Iwata-Reuyl, M. Swairjo.** San Diego State University and Portland State University. (790.1)
- 3:30 **121.1** Small Molecule Differentiation of RNA Structures Using Pattern Recognition. **A.E. Hargrove.** Duke University.

## 122. CAN WE TARGET AGING?

## Symposium

SUN. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: N. BARZILAI

## Aging

- 3:00 Does targeting senescent cells target aging? **Judith Campisi**. Albert Einstein Col. of Med.
- 3:25 Young blood for old brains. **Tony Wyss-Coray**. Stanford Univ. Sch. of Med.
- 3:50 Title tba. **Ana Marie Cuervo**. Albert Einstein Col. of Med.
- 4:15 General discussion.

## 123. ADVANCED BIOPHYSICAL AND BIOCHEMICAL APPROACHES TO MEMBRANE DYNAMICS (II)

## Symposium

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAired: J. XIAO

- 4:00 mTOR-Dependent Selective Translation Rapidly Expands Lysosome Biogenesis, Volume and Retention Capacity During Phagocyte Activation. **R. Botelho, V. Hipolito, K. Tandoc, I. Topisirovic**. Ryerson University, Canada and McGill University, Canada. (542.6)
- 4:15 Effects of the Cell Cycle on Vacuole Size in *S. cerevisiae* Yeast. **J.C. Sims**. San Francisco State University. (542.9)
- 4:30 Deciphering Trapp Complex Function in Yeast. **A. Joiner, C. Fromme**. Cornell University. (542.17)
- 4:45 Myosin IIA Is the Most Important Effector of Zyxin in Camp-Mediated Endothelial Exocytosis. **G. Wei, P. Li, L. Chen, J. Luo**. Peking University, People's Republic of China. (542.28)
- 5:00 123.1 Spatial Organization of RNA Polymerase in *E. coli* Cells. **J. Xiao**. John Hopkins University School of Medicine.

## 124. CHEMICAL BIOLOGY

## Symposium

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: B. DICKINSON

- 4:00 Anaerobic 4-Hydroxyproline Metabolism by a Widespread Microbial Glycyl Radical Enzyme. **Y.Y. Huang, L. Backman, B. Gold, R.T. Raines, C.L. Drennan, E.P. Balskus**. Harvard University and Massachusetts Institute of Technology. (534.16)
- 4:15 Ligand Gated Split Lysine Acetyl Transferases (KATs) and Kinases. **C.S. de Silva, J. Castillo-Montoya, E. Restituyo, I. Ghosh**. University of Arizona. (530.23)
- 4:30 Expanding the Druggable Proteome: Ligand and Target Discovery by Fragment-Based Screening in Cells. **C.G. Parker**. Scripps Research Institute. (530.19)
- 4:45 124.1 Optical Imaging Tools for Elucidating the Roles of Anions in Cellular Signaling. **S. Dodani**. The University of Texas at Dallas.
- 5:00 124.2 Chemical Approaches to Probe Signaling by Dynamic Proteome Lipidation. **B. Dickinson**. University of Chicago.

## 125. EMERGING PERSPECTIVES ON METABOLISM AND CELL FATE DECISIONS

## Symposium

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAired: E. TAYLOR

- 4:00 125.1 Loss of Mitochondrial Pyruvate Carrier Activity Short Circuits Hepatocellular Tumorigenesis. **E. Taylor**. University of Iowa.
- 4:15 Fine-Tuning of Hepatocyte Calcium Signaling and Liver Regeneration by the Mitochondrial Calcium Uniporter. **A. Noronha Antony, M. Katona, E. Juskeviciute, J.W. Elrod, G. Hajnóczky, J.B. Hoek**. Thomas Jefferson University, Lewis Katz School of Medicine and Temple University. (536.10)
- 4:30 Unconventional Pathways of Nitrogen Metabolism in Lung Cancer. **J. Kim**. The University of Texas Southwestern Medical Center. (811.9)
- 4:45 Understanding the Impact of IDH2 Mutations on the Redox Balance of Cancer Cells. **S.J. Gelman, L. McKenzie, M.G. Chheda, G.J. Patti**. Washington University in St. Louis. (811.13)
- 5:00 Targeting Glycolytic Metabolism in Cancer. **S. Telang, J. Trent, J. Chesney, A. Mojesky**. University of Louisville. (811.6)

**126. MOLECULAR CHAPERONES AND PROTEASE SYSTEMS****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: A.L. LUCIUS

- 4:00 Proteasomal ATPases Hard at Work: The Inner Workings of a Protein Destruction Machine. **A.M. Snoberger, D.M. Smith.** West Virginia University. (526.42)
- 4:15 Dual Function of the Trigger Factor Chaperone in Nascent Protein Folding. **C. Kaiser, K. Liu, K. Maciuba.** Johns Hopkins University. (793.1)
- 4:30 Molecular Chaperones Disperse Pab1 Hydrogel More Quickly Than Misfolded Aggregates. **H. Yoo, E. Pilipenko, D.A. Drummond.** University of Chicago. (793.16)
- 4:45 Dysregulation of Human Mitochondrial Clpp Protease Activity by Acyldepsipeptides Analogs Leads to Apoptotic Cell Death. **W.A. Houry.** University of Toronto, Canada. (653.3)
- 5:00 **126.1** Molecular Mechanisms of Enzyme Catalyzed Protein Unfolding and Translocation by Class 1 AAA+ Motors. **A.L. Lucius.** University of Alabama at Birmingham.

**127. PHYSIOLOGICAL REGULATION BY CELL SIGNALING****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: R. BERDEAUX

- 4:00 **127.1** Promotion of Muscle Satellite Cell Proliferation by cAMP-Induced Transcription. **R. Berdeaux, D. Akhmedov.** McGovern Medical School at The University of Texas Health Science Center.
- 4:15 **127.2** Interrogating Endogenous Neuromodulatory GPCR Signal Processing by Real-Time Imaging of cAMP Dynamics Through Intact Neuronal Circuits. **B.S. Muntean, S. Zucca, C.M. MacMullen, M.T. Dao, C. Johnston, H. Iwamoto, R.D. Blakely, R.L. Davis, K.A. Martemyanov.** Scripps Research Institute and Florida Atlantic University.
- 4:30 The Function of WNK1/OSR1 in Cell Migration and Angiogenesis. **A. Jaykumar, S. Earnest, K. McGlynn, S. Gallolu Kankanamalage, S. Stippec, G. Pearson, M. Cobb.** The University of Texas Southwestern Medical Center and Georgetown University. (533.49)
- 4:45 FOXA2 Promotes Prostate Cancer Bone Colonization. **Z.M. Connelly, S. Yang, A.W. Orr, X. Yu.** Louisiana State University Health Sciences Center—Shreveport. (804.15)
- 5:00 Passing on Signals to Compass: A Novel Intramolecular Interactions in PAS Kinase Controls the Stem Cell Fate via Regulating Compass Protein Complexes. **C.K. Kikani, X. Wu, J. Rutter.** University of Utah and Fred Hutchinson Cancer Institutute. (533.56)

**128. READING, WRITING AND ERASING EPIGENETIC MARKS****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: C. CHATTERJEE

- 4:00 Histone Chaperone Nap1 Facilitates Histone Dynamics in the Nucleosome. **T-H. Lee, J. Lee.** Pennsylvania State University. (523.3)
- 4:15 Stoichiometry of Multi-Protein Complexes Containing Rtt109, Vps75, and Histone H3-H4. **S. D'Arcy, N. Akhavantabib, D. Krzizike.** The University of Texas at Dallas and Fox Chase Cancer Center. (524.13)
- 4:30 Revealing Chromatin State Organization on the Single-Molecule Scale. **B. Fierz.** École Polytechnique Fédérale de Lausanne, Switzerland. (523.4)
- 4:45 Biochemical Characterization of the Set1 H3k4 Methyltransferase Complexes. **J. Kim.** Korea Advanced Institute of Science and Technology, Republic of Korea. (524.8)
- 5:00 **128.1** Chemical Tools to Investigate Gene Regulation by Histone Sumoylation. **C. Chatterjee.** University of Washington.

**129. STRUCTURE AND MECHANISMS REGULATING RNA FUNCTION****Symposium**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAired: R. SPITALE

- 4:00 Probing RNA Structure and Dynamics in the HIV-1 5'UTR Using Ensemble and Single Molecule Approaches. **K. Musier-Forsyth, B. Brigham, J. Kitzrow, J-P.C. Reyes, J. Munro.** The Ohio State University and Tufts University School of Medicine. (650.4)
- 4:15 Role of RNA Binding Protein RBM15 in m<sup>6</sup>A RNA Methylation During Megakaryocytic Differentiation. **N. Ayala-Lopez, R. Ross, S. Halene, P. Limbach, D.S. Krause.** Yale University and University of Cincinnati. (790.9)
- 4:30 Different Classes of RNA Require Distinct Mex67 Paralogs for Processing and Nucleocytoplasmic Export in Trypanosomes. **S. Obado, B. Chait, M. Field, M. Rout.** The Rockefeller University and University of Dundee, United Kingdom. (789.8)
- 4:45 m<sup>6</sup>A Facilitates Hippocampus-Dependent Learning and Memory Through Ythdf1. **H. Shi, X. Zhang, Z. Lu, Y. Liu, Y-L. Weng, Z. Lu, J. Li, P. Hao, Y. Zhang, J. Delgado, M. Patel, X. Cao, X. Huang, Y. Su, G-L. Ming, X. Zhuang, H. Song, C. He, T. Zhou.** The University of Chicago, ShanghaiTech University, People's Republic of China, University of Pennsylvania and East China Normal University, People's Republic of China. (787.6)
- 5:00 **129.1** Chemo-Transcriptomic Methods to Measure RNA Structure Inside Living Cells. **R. Spitale.** University of California, Irvine.

**130. BMB PROFESSIONAL DEVELOPMENT: ADVANCING SUCCESSFUL CAREERS****Symposium**

(Sponsored by: ASBMB Education and Professional Development Committee)

SUN. 4:15 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: R. BOOTH

4:15 Leadership Skill Development in an Undergraduate Biochemistry Lab. **D.E. Rhoads**. Monmouth University. (535.3)

4:30 Effects of a Data Analysis Intensive Course on Student Critical Thinking Skills, Confidence, and Post-Graduation Success. **K.K. Resendes**. Westminster College. (663.3)

4:45 Graduate Student Professional Development and a Cure-Style Course and Peer-Reviewed Student Publications. **J. Baumgartner, J. Lee, M.L. Kuhn**. San Francisco State University. (535.28)

5:00 **130.1** Predictors of Success on the MCAT for Post-Baccalaureate Pre-Medicine Students. **Y. Dobryднева, L. Schwartz**. George Washington University School of Medicine and Health Sciences.

**131. ORGANIZING A SUCCESSFUL ASBMB STUDENT CHAPTER****Workshop**

(Sponsored by: ASBMB Student Chapters Committee)

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

Learn about the ASBMB Student Chapters program and how to maintain an active chapter. Network with existing faculty advisers and student members as they share their chapter activities.

**132. THE ART OF THE 3D CELL CULTURE, FROM ORGANOIDS TO ORGANS-ON-A-CHIP****Workshop**

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

COCHAIR: T. KWOK AND S. LELIÈVRE

When 3D cell culture is properly done the cells behave in a manner that allows their organization and function as in vivo. In this workshop participants will become familiar with the concepts used to place cells in an environment appropriate for their needs and for the study of interest, from simple contexts with one cell type, to complex tissue organization, with multiple cellular compartments. They will participate in interactive observations/analyses of cells in 3D culture and build platforms for organs-on-a-chip from kits. Upon completing the workshop, participants will understand why there can be many cell culture models depending on the scientific queries and technical capabilities, with materials ranging from sophisticated polymers to paper; and they will be better prepared to choose a model convenient for their needs.

**133. CRYOEM AND CRYO-ET: STEP-BY-STEP****Workshop**

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

COCHAIR: A. LESCHZINER AND E. VILLA

The “resolution revolution” has propelled Cryo-electron microscopy (cryoEM) and single-particle approaches as the structural technique of choice for tackling many biological problems. Similarly, technical advances are enabling cryo-electron tomography (Cryo-ET) to provide previously unachievable, high-resolution views of the cell interior. The two techniques are ushering a new era in structural biology, both at the molecular and cellular level. In this workshop, the advances that have made the revolution possible will be briefly introduced, and the workflow in each technique will be explained, step-by-step, using real data.

**134. STORYTELLING AND THE ART OF GIVING A GOOD PRESENTATION****Workshop**

(Sponsored by: ASBMB Public Outreach Committee)

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6B

Storytelling is an essential component of communication, used by everyone from journalists to comedians to musicians to bring esoteric subjects to broad audiences. Mastering this skill requires not only topical knowledge but also creative flexibility and dexterity with language. This interactive session presented by the ASBMB Public Outreach Committee will lead participants through hands-on storytelling training, based on one of the modules from ASBMB’s training course, “The Art of Science Communication.”

**135. STRATEGICALLY BUILDING YOUR CV AT EVERY CAREER STAGE****Workshop**

(Sponsored by: ASBMB Education and Professional Development Committee)

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIR: R. BOOTH

Join in this hands-on workshop where attendees can discuss past or future experiences and how they link to a specific career path along with the best tools for marketing themselves. Workshop participants will be divided into groups based on their interests and career level and session speakers will facilitate the discussions within each group. While all career stages can benefit from this workshop, students, post-docs and early-career scientists are urged to attend. Your next job could depend on it.

**136. YOUR DATA, MAGNIFIED: SUCCESS IN SCIENTIFIC PUBLISHING****Workshop**

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

*CHAIRER:* K. SAKABE

Are you confident your data will stand the test of time?

Are you writing in a clear and compelling manner to engage readers?

Are you reaching the audience you and your research deserve?

Join us for this 90-minute workshop to get tips on collecting and presenting data, editing text for clarity and reach, and sharing your work. JBC wants to help you achieve your publication goals as part of our mission to bring enduring research to the scientific community.

**137. ASBMB ANNUAL MEETING NETWORKING RECEPTION****Society Events**

SUN. 7:00 PM—SAN DIEGO CONVENTION CENTER, FOYER OUTSIDE OF ROOMS 30A-E.

Join us so we may thank you for being an ASBMB member or share with you the benefits of joining the Society! Meet and mingle with members of the ASBMB leadership, including Natalie Ahn, ASBMB President, Gerald Hart, ASBMB President-elect, and editorial board members from JBC, JLR and MCP, the Society's three journals. Enjoy light refreshments while exploring research posters from recipients of the ASBMB Graduate Student Travel Awards, sponsored by the ASBMB Minority Affairs Committee. ASBMB Members and Biochemistry registrants welcome.

## Pathology

### 138. COMMITTEE FOR CAREER DEVELOPMENT AND DIVERSITY WORKSHOP AND BREAKFAST: MENTOR/MENTEE RELATIONSHIP: A TWO-WAY STREET

#### Workshop

(Sponsored by: the ASIP Committee for Career Development and Diversity)

SUN. 7:00 AM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARINA BALLROOM SALON F

CHAired: M. PREZIOSI

COCHAired: V. CONTRERAS-SHANNON

#### Career and Professional Development

#### Workshops & Events

##### Registration Required

- 7:00 Introduction of the Mentor/Sponsor/Mentee Dynamics by the Moderator. **C. Yates**. Univ. of Pittsburgh School of Nursing.
- 7:15 10-minute Panel Discussions: Panelists will introduce themselves followed by Q&A session: **Diane Bielenberg, PhD (MENTEE), Patricia D'Amore, PhD (MENTOR), Traci Parry, PhD (MENTEE), Monte Willis, MD, PhD, MBA (MENTOR), Morgan Preziosi, PhD (MENTEE), Satdarshan (Paul) Singh Monga, MD (MENTOR)**. Harvard Med. Sch., Children's Hospital, Schepens Eye Research Institute, Univ. of North Carolina at Chapel Hill, Univ. of North Carolina at Chapel Hill, Univ. of Pittsburgh School of Medicine, Univ. of Pittsburgh School of Medicine.
- 7:45 Concluding Remarks by the Moderator. **Cecelia Yates, PhD**. Univ. of Pittsburgh School of Nursing.

### 139. PATHOBIOLOGY COURSE FOR RESEARCH SCIENTISTS: INFECTIOUS PATHOGENS AND CANCER

In Conjunction with the Molecular and Cellular Basis of Cancer Program

#### Symposium

(Sponsored by: the ASIP Education Committee)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: W. COLEMAN

COCHAired: D. BIELENBERG

#### Bacteria, Parasitology, Microbiome, Antibiotics

#### Neoplasia

#### Cancer and Therapy

- 8:30 Role of MyD88 in Helicobacter Infection-Driven Gastric Carcinogenesis. **M. Obonyo**. UCSD.
- 9:15 Human Papillomavirus in Oropharyngeal Cancer. **K. Gold**. UCSD.

- 10:00 Viral Mechanisms in Primary Liver Cancer. **S. Monga**. Univ. of Pittsburgh.
- 10:45 Challenges in Hepatitis C Virus Vaccine Development. **M. Law**. Scripps Research Inst.

### 140. LIVER PATHOBIOLOGY WORKSHOP: HEPATOBILIARY DISEASE

#### Workshop

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: K. NEJAK-BOWEN

#### Liver Pathobiology

#### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

#### Cell and Tissue Injury

- 8:30 Adiponectin-FGF15/19 Signaling in Alcoholic Fatty Liver Disease. **M. You**. Northeast Ohio Medical Univ.
- 9:00 Neuroendocrine Regulation of Biliary Damage and Liver Fibrosis. **G. Alpini**. Texas A&M Health Science Ctr.
- 9:30 Polyploid Hepatocytes in Liver Injury and Repair. **A. Duncan**. Univ. of Pittsburgh.
- 10:00 Bile Acids and Sphingosine-1 Phosphate Receptor 2 in Cholestatic Liver Injury. **H. Zhou**. Virginia Commonwealth Univ.
- 10:30 Mechanisms Underlying Fatty Liver Disease. **J. Maher**. San Francisco General Hospital.
- 11:00 Endogenous Mechanisms Limiting Liver Fibrosis. **C. Gandhi**. Cincinnati Children's Hospital Medical Ctr.

### 141. VAMP SYMPOSIUM: INFLAMMATION, IMMUNOPATHOLOGY, AND MUCOSAL DISEASE MECHANISMS

#### Symposium

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: A. NUSRAT

COCHAired: F.W. LUSCINSKAS

#### Epithelial and Mucosal Pathobiology

#### Immunopathology

#### Neoplasia

#### Microbiome

- 8:30 Monocyte Subsets in Cancer Metastasis. **C. Hedrick**. La Jolla Inst. for Allergy and Immunology.
- 9:10 Microbiome and Immune Function. **N. Lukacs**. Univ. of Michigan.
- 9:50 Understanding CD47-SIRP $\alpha$  interaction in adaptive immune cell function. **F. Luscinskas**. Brigham & Women's Hospital.

- 10:30 Annexin A1 Paradigm in Resolving Inflammation and Promote Repair. **M. Perretti.** Queen Mary Univ. of London.
- 11:10 The Unfolded Protein Response Regulator, ATF6, Promotes Mesodermal Differentiation. **Heike Kroeger.** University of California, San Diego.

**142. ASMB LECTURE**

In Conjunction with the Minisymposium: The Matrix Reloaded: Mediators of Deposition and Remodeling

**Lecture**

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 5A

**Matrix Pathobiology****Workshops & Events**

- 8:30 Engineering the Extracellular Matrix: Tools and Technologies for Disease Modeling. **A. Engler.** UCSD.

**143. THE MATRIX RELOADED: MEDIATORS OF DEPOSITION AND REMODELING****Symposium**

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: T. KYRIAKIDES

COCHAired: Z. JOHNSON

**Matrix Pathobiology**

- 9:30 **143.1** Disturbed Blood Flow Induces Arterial Stiffening Through Thrombospondin-1. **S. Kumar, H. Jo, L.P. Brewster.** Emory University and Georgia Institute of Technology and Emory University.
- 9:45 **143.2** Biological Function of TIMP-2 Is Regulated by the Composition of the Tissue Microenvironment. **D. Peeney, W. Stetler-Stevenson.** National Cancer Institute and National Institutes of Health.
- 10:00 **143.3** Men Are from Mars, Women Are from Venus. Gender Specific Changes in Pulmonary Function in 1-Year Old Rats After Neonatal Hyperoxia Exposure. **R.K. Braun, D.F. Pegelow, K.N. Goss, M. Eldridge.** University of Wisconsin—Madison.
- 10:15 **143.4** Telomerase Expression in Myeloid Cells Is Essential for Pulmonary Fibrosis. **T. Liu, F. Gonzalez De Los Santos, Y. Zhao, Z. Wu, S.H. Phan.** University of Michigan Medical School.
- 10:30 **143.5** Semi-Synthetic Glycosaminoglycan Ethers Decrease Receptors for Advanced Glycation End-Products and Increase AXL Receptor in the Lung from Secondhand Smoke Treated Mice. **A. Ostergar, K. Egbert, C. Clark, P. Hall, T. Davis, K.M. Hirschi, J.A. Arroyo, P.R. Reynolds.** Brigham Young University.
- 10:45 **143.6** Fibrinolytic Activity of Cysteine Cathepsins and Role of Fibrin as a Reservoir to Sustain Proteolysis. **S.A. Douglas, S.E. LaMothe, T.S. Singleton, R. Averett, M.O. Platt.** Georgia Institute of Technology and University of Georgia.

**144. MEET AND GREET THE ASIP EXECUTIVE OFFICER, WILLIAM COLEMAN, PHD****Society Events**

SUN. 11:30 AM—SAN DIEGO CONVENTION CENTER, ASIP LOUNGE

**Workshops & Events****145. XVIII<sup>TH</sup> ANNUAL ASIP/AAA CAREER DEVELOPMENT AND MENTORING PROGRAM AND LUNCH: THE IDP: HIGHWAY TO SUCCESS****Society Events**

(Sponsored by: the ASIP Committee for Career Development and Diversity and the American Association of Anatomists)

SUN. 11:45 AM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARINA BALLROOM SALON F

CHAired: A. DUNCAN

COCHAired: N. RUTLEDGE

**Career and Professional Development****Workshops & Events***Registration Required*

- 11:45 Introduction to the Individual Development Plan. **A. Duncan, Nakisha Rutledge.** Univ. of Pittsburgh, Northwestern University.
- 12:00 How to Write, Revise and Adapt Your Most Effective IDP. **E. Bearer.** Univ. of New Mexico Health Science Ctr.
- 12:30 Testimonials: Senior Trainees Share Personal Experiences with their IDP. **N. Rutledge, Z. Johnson, C. Walesky.** Northwestern Univ., Univ. of Pittsburgh, Brigham and Women's Hosp./Harvard Med. Sch.
- 1:00 Interactive Table Sessions (Attendees will rotate through tables hosted by mentors who will help attendees write their first IDP or edit/improve an existing IDP)
- 1:40 Wrap-Up. **Andrew Duncan.** Univ. of Pittsburgh.

**146. THE HISTOCHEMICAL SOCIETY (HCS)  
JOURNAL OF HISTOCHEMISTRY AND  
CYTOCHEMISTRY MEET THE EDITOR**

**Society Events**

SUN. 12:00 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALL,  
BOOTH 320

**Workshops & Events**

1:00 PM-2:00 PM MEET AND GREAT MARTHA FURIE

**146A. MEET AND GREET THE ASIP AJP  
EDITOR-IN-CHIEF, MARTHA FURIE, PHD**

**Society Events**

SUN. 1:00PM-2:00PM SAN DIEGO CONVENTION CENTER,  
ASIP LOUNGE

**Workshops & Events**

**147. MOLECULAR AND CELLULAR BASIS  
OF CANCER SYMPOSIUM: CELLULAR  
ADAPTIVE RESPONSE IN TISSUE  
INJURY, TUMORIGENESIS, AND CANCER  
PROGRESSION**

**Symposium**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: W-X. DING

COCHAired: L. WANG

**Neoplasia**

**Cancer and Therapy**

**Cell and Tissue Injury**

**Immunopathology**

- 2:00 Role of p62 in NASH-Mediated Liver and Pancreatic Tumorigenesis. **M. Karin**. UCSD.
- 2:30 Autophagy and mTOR in Liver Tumorigenesis. **W. Ding**. Univ. of Kansas Medical Ctr.
- 3:00 Role of SHP2/PTPN11 in Liver Metabolism and Tumorigenesis. **G. Feng**. UCSD.
- 3:30 Mitochondria Metabolic Reprogramming in Hepatic Apoptosis and Injury. **L. Wang**. Univ. of Connecticut.
- 4:00 ER Stress in Pancreatitis. **A. Lugea**. UCLA.
- 4:30 Mitochondrial Stress in Drug-Induced Liver Injury. **N. Kaplowitz**. USC School of Medicine.

**148. PRESIDENTIAL SYMPOSIUM: INFLAMMATION  
KNOWS NO BORDERS**

**Symposium**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: D. REMICK

**Inflammation/Immunity**

- 2:00 Host/pathogen Interactions in the Nematode *C. elegans*. **E. Troemel**. UCSD.
- 3:00 Mild Traumatic Brain Injury Augments Innate Immunity. **D. Remick**. Boston Univ. School of Medicine.

**149. ASIP ROUS-WHIPPLE AWARD LECTURE**

In Conjunction with the Presidential Symposium:  
Inflammation Knows No Borders

**Lecture**

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 3

**Award Lectures**

**Inflammation/Immunity**

- 4:00 Decoding Novel Resolution Mediators and Mechanisms in Infectious Inflammation and Tissue Regeneration. **C. Serhan**. Brigham & Women's Hospital.

**150. MOLECULAR BASIS OF CHRONIC LIVER  
INJURY**

**Symposium**

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: M.L. TOMASI

COCHAired: T. PRADHAN-SUNDD

**Liver Pathobiology**

**Regenerative Medicine (Stem Cells, Tissue  
Regeneration, Biomaterials)**

**Cell and Tissue Injury**

- 2:00 **150.1** Dysregulated Bile Transporters and Impaired Tight Junctions Promote Chronic Liver Injury in Mice. **T. Pradhan, R. Vats, J. Russell, S. Singh, S. Watkins, P. Sundd, S. Pal Monga**. University of Pittsburgh.
- 2:15 **150.2** Mechanisms of Concanavalin A-Induced Mediators of Hepatocyte Damage in Hepatic Stellate Cells: A Dual Role of Interferon Regulatory Factor-1. **R. Rani, S. Kumar, C.R. Gandhi**. Cincinnati Children's Hospital Medical Center.
- 2:30 **150.3** Janus Kinase 3 Modulates the Tolerogenic Immunology of Liver Through Kupffer Cells. **N. Kumar, J.K. Das, J. Mishra**. Texas A&M University College of Pharmacy.

- 2:45 **150.4** Regulation of Oxidative Liver Injury by the Probiotic *Lactobacillus rhamnosus* GG. **B.J. Saeedi, B. Robinson, J. Owens, K. Liu, L. Luo, T. Darby, D. Jones, R. Jones, A. Neish.** Emory University.
- 3:00 **150.5** Age-Induced Hepatic Steatosis and Inflammation of Murine Livers Is Influenced by Mcp-1. **E. Stahl, S. LoPresti, E. Delgado, F. Alencastro, P. Wilkinson, A.W. Duncan, B.N. Brown.** University of Pittsburgh.
- 3:15 **150.6** Hepatocyte-Specific Depletion of Augmenter of Liver Regeneration (ALR) Protein Alters miRNA Signature Linked to Lipid Homeostasis Leading to Excessive Steatosis. **S. Kumar, R. Rani, R. Karns, B.K. Sharma, C.R. Gandhi.** Cincinnati Children's Hospital Medical Center.
- 3:30 **150.7** Hepatocyte-Specific High-Mobility Group Box 1 (HC-HMGB1) Protects Against Liver Fat Accumulation and Cellular Stress During High Fat Diet Feeding. **M.J. Lin, M.J. Deng, T.R. Billiar, M.J. Scott.** University of Pittsburgh.
- 3:45 **150.8** A-Kinase Anchoring Protein Phosphorylation as a Therapeutic Target for Alcohol Liver Injury. **K. Ramani, M.L. Tomasi, J. Berling, N. Mavila, Z. Sun.** Cedars-Sinai Medical Center and Johns Hopkins University School of Medicine.
- 4:00 **150.9** Glycine/Sarcosine Ratio as Novel Biomarker for Alcohol-Induced Liver Fibrosis Under Sumoylation Control. **M.L. Tomasi, C. Cossu, K. Ramani, A. Floris.** Cedars-Sinai Medical Center.
- 4:15 **150.10** Hepatocyte miRNA-21-Deficiency Promotes Hepatic Lipid Accumulation but Ameliorates Alcohol-Induced Liver Injury by Targeting DUSP16. **Y. Zhao, J. Wu, D-J. Shin, L. Wang.** University of Connecticut.
- 3:00 **151.3** Role of Farnesoid X Receptor Activation in Counteracting Tumor-Promoting Functions of Cancer-Associated Fibroblasts in Breast Cancers. **I. Barone, V. Vircillo, C. Giordano, R. Tarallo, A. Rinaldi, G. Bruno, B. Gyorffy, D. Bonofiglio, S. Andò, S. Catalano.** University of Calabria, Italy, University of Salerno, Italy and Semmelweis University, Hungary.
- 3:25 **151.4** Star-Related Lipid Transfer Protein 10 as Novel Key Player in Ethanol-Induced Erbb2 Breast Cancer Progression. **A. Floris, C. Cossu, K. Ramani, M.L. Tomasi.** Cedars-Sinai Medical Center.
- 3:50 **151.5** Leptin Modulates Exosome Biogenesis in Breast Cancer Cells: An Additional Mechanism in Cell-to-Cell Communication. **C. Giordano, L. Gelsomino, I. Barone, S. Panza, G. Augimeri, D. Bonofiglio, S. Catalano, S. Andò.** University of Calabria, Italy.
- 4:15 **151.6** C/EBP $\alpha$  Is Crucial Determinant of Epithelial Homeostasis by Preventing Epithelial-to-Mesenchymal Transition. **P. Coffe, A-R. Lourenco, C. Frederiks, D. Seinstra, A. Margarido, G. Roukens, J. van Rheenen.** University Medical Center Utrecht, Netherlands and Netherlands Cancer Institute, Netherlands.
- 4:40 Q+A.

## 151. BREAST CANCER: PATHOGENESIS AND PATHWAYS TO THERAPY

### Symposium

SUN. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: S. ANDO

COCHAired: G. ROBICHAUD

### Breast Cancer

#### Neoplasia

- 2:00 Introduction
- 2:10 **151.1** Correlation of Securin and Ki67 in Invasive Breast Carcinoma. **I.M. Talaat, R.A. Hamoudi, N.M. Soliman, N.Y. Oweiss, A.M. Omar.** College of Medicine, University of Sharjah, United Arab Emirates, Faculty of Medicine and Alexandria University, Egypt.
- 2:35 **151.2** Anticancer and Pro-Apoptotic Effects of Triphala Extract in Human Breast Cancer MCF-7 Cells. **M.S. Murthy.** MS Junior College, India.

## 152. THE HCS BUSINESS MEETING, AWARDS PRESENTATIONS, AND RECEPTION

### Society Events

SUN. 6:00 PM—OFF-SITE LOCATION, HORTON GRAND HOTEL, 311 ISLAND AVENUE, SAN DIEGO, CA 92101

### Workshops & Events

## Pharmacology

### 153. JOHN J. ABEL AWARD IN PHARMACOLOGY LECTURE

#### Lecture

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

#### Award Lectures

The John J. Abel Award in Pharmacology, named after the founder of ASPET, was established in 1946 to stimulate fundamental research in pharmacology and experimental therapeutics by young investigators.

8:30 Introduction.

8:35 Molecular Control of G Protein Signaling. **K. Martemyanov.** The Scripps Research Inst.

### 154. ASPET PRESIDENTIAL SYMPOSIUM: DEADLY LIAISONS: SQUEEZING THE LIFE OUT OF CANCER

#### Symposium

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAIRED: J. SCHUETZ

COCHAIRED: M-A. BJORNSTI

#### Cancer and Therapy

9:30 Introduction.

9:35 Precision Medicine of Childhood Acute Lymphoblastic Leukemia: From Discovery to Translation. **W. Evans.** St. Jude Children's Research Hosp.

10:10 Taxol®, Tubulin and Tumors: A Story of Drug Development. **S.B. Horwitz.** Albert Einstein Col. of Med.

10:45 Identification of New Therapies to Treat Pediatric Medulloblastoma. **M. Roussel.** St. Jude Children's Research Hosp.

11:20 Discovery of Inhibitors of the Interaction of UBC12 and DCN1. **R.K. Guy.** Univ. of Kentucky Sch. of Pharmacy.

11:55 Conclusion.

### 155. NANCY ZAHNISER MEMORIAL SYMPOSIUM: THE DOPAMINE TRANSPORTER IN HEALTH AND DISEASE

#### Symposium

(Sponsored by: ASPET Division for Neuropharmacology (NEU))

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAIRED: L. DAWS

COCHAIRED: H. KHOSHBOUEI

#### Neuroscience

#### Metabolism and Metabolic Disease

#### Behavioral Pharmacology

Dr. Zahniser pioneered research elaborating our understanding of how dopamine and glutamate contribute to individual differences in cocaine-induced brain plasticity and addiction-like behavior, and

how dopamine transporters are rapidly regulated. Her findings underscore the overall importance of dopamine transporters in contributing to enhanced vulnerability to cocaine addiction and relapse. Dr. Zahniser was strongly committed to mentoring young scientists, and to ASPET. In tribute of her many accomplishments, this symposium captures the most recent advances in understanding dopamine transporter function and regulation, and its important role in health, disease, and addiction. Importantly, this symposium highlights novel targets for treating dopamine-linked pathologies.

9:30 Introduction.

9:32 Dopamine Transporters and Psychostimulant Action: Lessons from Nancy. **S. Amara.** NIMH.

9:57 Dopamine Transporters: Linking Obesity to Diabetes to Psychiatric Disorders. **A. Galli.** Univ. of Alabama-Birmingham.

10:17 Altered Dopamine Transporter Function and Immunoregulation in PD Macrophages. **P. Mackie, A. Gopinath, L. Saadatpour, J. Pino, H. Khoshbouei.** University of Florida. (693.4)

10:27 An Unsuspected Role for Organic Cation Transporter 3 in the Actions of Amphetamine. **F.P. Mayer, A.W. Owens, S. Boehm, U. Gether, W. Koek, L.C. Daws, H.H. Sitte.** Institute of Pharmacology, Medical University of Vienna, Austria, The University of Texas Health Science Center at San Antonio, University of Copenhagen and Panum Institute, Denmark. (820.8)

10:37 DATS Not All: Organic Cation Transporters in the Actions of Psychoactive Drugs. **L. Daws.** Univ. of Texas Health Science Ctr. at San Antonio.

10:57 Modulation of Stimulant Actions by the Intertwining Activities of D2 Autoreceptors and PKCβ. **M. Gnegy.** Univ. of Michigan.

11:17 Moving from Neuronal Transporter Structures to Clinically Relevant Therapeutics for Neurodegenerative Disorders. **U. Gether.** Univ. of Copenhagen.

11:37 General Discussion and Questions.

11:57 Conclusion.

### 156. RAY FULLER LECTURE AND SYMPOSIUM: STATE-OF-THE-ART ON REGENERATIVE PHARMACOLOGY: THE FUTURE IS NOW

#### Symposium

(Sponsored by: ASPET Division for Translational and Clinical Pharmacology (TCP))

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAIRED: G. CHRIST

COCHAIRED: K. MARRA

#### Translational and Clinical Pharmacology

#### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

#### Cardiovascular

#### Emerging Technologies

9:30 Presentation of the Ray Fuller Award to Dr. George Christ.

9:35 Ray Fuller Lecture: Regenerative Pharmacology for Muscle Repair. **G. Christ.** Univ. of Virginia.

- 10:10 Keratin Biomaterials as an Implantable Device, As Well As a Platform for Cell and Drug Delivery for Tissue Repair and Regeneration. **L. Burnett**. Keranetics LLC.
- 10:45 Stem Cell Engraftment through Enhanced Vascular Integration with Functionalized Biomaterials. **K. Healy**. Univ. of California, Berkeley.
- 11:20 Therapeutic Angiogenic Materials for Tissue Repair and Regeneration. **T. Segura**. Univ. of California, Los Angeles.
- 11:55 Q&A.

## 157. HUMANIZED IN VITRO AND IN VIVO MODELS IN DRUG DISCOVERY AND DEVELOPMENT

### Symposium

(Sponsored by: ASPET Division for Drug Metabolism and Disposition (DMDD))

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: X. DING

COCHAired: A. SAWANT-BASAK

### Drug Metabolism and Disposition

### Emerging Technologies

### Metabolism and Metabolic Disease

### Drug Discovery and Development

- 9:30 Introduction. **A. Sawant-Basak**. Pfizer Inc.
- 9:35 Capturing Liver Function In Vitro: Micro-engineered Biomimetic Liver Platforms for Drug Metabolism and Inter-organ Interactions. **S.S. Bale**. Draper Laboratories.
- 10:03 Quantitative DMPK Applications of Microphysiological Systems. **M. Cirit**. MIT—Translational Ctr. of Tissue Chip Technologies.
- 10:31 Human Liver Chimeric Mice to Predict Human Drug Metabolism and Toxicity: The Chances and Challenges. **K.D. Bissig**. Baylor Col. of Med.
- 10:59 Glucuronidation in Humanized and Conditional Knockout Animal Models. **S. Chen**. Univ. of California, San Diego.
- 11:27 Industrial Perspectives of Microphysiological Systems in Drug Discovery and Development. **P. Bajaj**. Takeda Pharmaceuticals.
- 11:55 Summary. **X. Ding**. Univ. of Arizona.

## 158. PLACENTAL XENOBIOTIC METABOLISM AND TRANSPORT

### Symposium

(Sponsored by: ASPET Division for Toxicology (TOX))

SUN. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAired: Q. MAO

COCHAired: L. ALEKSUNES

### Toxicology

### Metabolism and Metabolic Disease

### Drug Discovery and Development

### Drug Metabolism and Disposition

- 9:30 Introduction.
- 9:34 Placental Metabolism of Drugs and Impacts on Fetal Exposure. **M. Ahmed**. Univ. of Texas—Medical Branch, Galveston.
- 10:04 Placental Transporter Regulation and Environmental Toxicant Interactions. **L. Aleksunes**. Rutgers Univ.
- 10:34 Fetal Exposure to Drugs: Role of Placental Transporters. **Q. Mao**. Univ. of Washington.
- 11:04 PBPK Modeling and Simulation to Predict Fetal Exposure to Drugs and Xenobiotics. **M. De Sousa Mendes**. Simcyp.
- 11:34 Effects of Cannabinoids on Trophoblast Cell Growth and Syncytialization. **N.K. Neradugomma, Q. Mao**. University of Washington. (692.4)
- 11:46 Translocation of Engineered Nanomaterials from the Maternal Lungs to the Fetal Compartment After Instillation. **P. Stapleton, J. D'Errico, S. Fournier**, Rutgers University. (830.5)
- 11:58 Conclusion.

## 159. ASPET DAILY DATABLITZ

### Poster Discussion

SUN. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
EXHIBIT HALLS A-D  
ASPET POSTER DISCUSSION AREA BOOTH 820

CHAired: C.A. PARONIS

Experience the daily ASPET datablitz, a rapid-fire oral presentation of research in the ASPET poster discussion lounge in the poster hall. These brief snippets of research are an introduction to their full presentations that will take place at their poster boards afterwards. You won't want to miss this fast-paced overview of the most exciting science of the day.

- 1:00 Dopamine Transporter Activation Reduces Kv2.1 Activation Potential and Cluster Size. **J. Lebowitz, J.A. Pino Reyes, K. Divita, C. Henckel, M. Lin, G.E. Torres, H. Khoshbouei**. University of Florida College of Medicine. (553.5)

- 1:05 Anti-Methamphetamine Antibody Gene Therapy Ameliorates Methamphetamine-Induced Locomotor Effects in Mice for 8 Months After a Single Treatment. **C.E. Hay, L.E. Ewing, M.D. Hambuchen, P. Margaritis, S.M. Owens, E.C. Peterson.** University of Arkansas for Medical Sciences and The Children's Hospital of Philadelphia. (550.5)
- 1:10 The Role of Distal Helix 5 as a Determinant of GPCR-G Protein Coupling Selectivity. **N. Okashah, Q. Wan, A. Inoue, N. Lambert.** Augusta University and Tohoku University, Japan. (555.2)
- 1:15 Inhibitor of Soluble Epoxide Hydrolase Attenuates Decline in Learning and Memory of Diabetic Rats. **S.K. Goswami, N. Minaz, R. Razdan, B.D. Hammock.** Drexel University, Al-Ameen College of Pharmacy, India and University of California. (559.1)
- 1:20 Characterization of a Novel Inhibitor of Soluble Epoxide Hydrolase and Role in Ocular Neovascularization. **B. Park, S. P. B. Sardar Pasha, Y. Si, S.O. Meroueh, S-Y. Seo, T.W. Corson.** Indiana University School of Medicine and Gachon University, Republic of Korea. (561.1)
- 1:25 Break.
- 1:30 Proximal Tubule Beta-2 Adrenergic Receptor Is Responsible for Recovery of Renal Function Following Ischemia Reperfusion Injury. **R.B. Cameron, E. Simmons, S. Miller, W. Gibbs, R. Schnellmann.** University of Arizona. (562.4)
- 1:35 Physical Organization of Heme Oxygenase 1, NADPH Cytochrome P450 Reductase, and the Cytochromes P450 in the Endoplasmic Reticulum. **J.P. Connick, W.L. Backes.** Louisiana State University Health Sciences Center—New Orleans. (564.6)
- 1:40 Role of Glutathione-S-Transferases in the Metabolism of the Anti-Cancer Agent and Aromatase Inhibitor, Exemestane. **I.L. Teslenko, G. Chen, Z. Xia, P. Lazarus.** Washington State University. (566.10)
- 1:45 Mitochondrial DNA Activates NLRP3 Inflammation and Contributes to Endothelial Dysfunction and Inflammation in Type 1 Diabetic Mice. **C.A. Pereira, N.d. S. Ferreira, C.Z. Zanotto, D. Carlos, R. Tostes.** University of Sao Paulo, Brazil. (569.5)
- 1:50 The Antithrombotic Effects of 12-LOX Derived Metabolites of DPA,  $\omega$ -6. **A. Chen, J. Yeung, A. Szatkowski, M. Jackson, J. Watson, C. Freedman, A. Das, T. Holman, M. Holinstat.** University of Michigan, University of Illinois at Urbana—Champaign, University of California and Santa Cruz. (571.5)
- 1:55 Discussion.

## 160. GOODMAN AND GILMAN AWARD IN RECEPTOR PHARMACOLOGY LECTURE

### Lecture

SUN. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

### Award Lectures

The Louis S. Goodman and Alfred Gilman Award in Receptor Pharmacology was established in 1980 to recognize and stimulate outstanding research in pharmacology of biological receptors, leading to a better understanding of the mechanisms of biological processes and providing the basis for the discovery of drugs useful in the treatment of diseases.

- 2:30 Introduction.
- 2:35 Physiological and Therapeutic Implications of GPCR Functional Selectivity/Biased Signaling. **M. Caron.** Duke Univ.

## 161. ADHESION GPCRS AS NEUROTHERAPEUTIC TARGETS

### Symposium

(Sponsored by: ASPET Division for Molecular Pharmacology (MP))

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAired: G. TALL

COCHAired: X. PIAO

### Molecular Pharmacology

### Cancer and Therapy

### Cardiovascular

### Neuroscience

- 3:30 GPR56 Regulation of Glial Cell Development. **X. Piao.** Harvard Univ.
- 3:58 Structural and Functional Studies of Adhesion GPCRs. **D. Arac.** Univ. of Chicago.
- 4:26 BAI Regulation of Synaptic Function and Involvement in Neurological Disease. **R. Hall.** Emory Univ.
- 4:54 New Probe Compounds to Investigate Adhesion GPCR Activation Mechanisms. **G. Tall.** Univ. of Michigan.
- 5:22 Adhesion-GPCR Function in Synapses. **T. Sudhof.** Stanford Univ. Sch. of Med.

## 162. EPIGENETICS IN DRUG DISCOVERY

### Symposium

(Sponsored by: ASPET Division for Drug Discovery and Development (DDD))

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: V. VAKA

COCHAired: J.J. JILEK

### Drug Discovery and Development

### Cancer and Therapy

### Gene Expression

### Neuroscience

- 3:30 Epigenetic Drug Discovery Beyond Cancer. **P. Woster.** Medical Univ. of South Carolina Col. of Pharmacy.
- 3:55 Therapy Acceleration via Precision Medicine. **S. Verma.** Johns Hopkins Sch. of Med.
- 4:20 MicroRNA Epigenetics & Therapy: Are We Using the Right Agents? **A.M. Yu.** Univ. of California, Davis.
- 4:45 Pathway Based Chemical Screen Identifies New Components of Epigenetic Gene Repression as Potential New Cancer Therapeutics. **N. Hathaway.** UNC Eshelman Sch. of Pharmacy.
- 5:10 Exosome Mediated Intercellular Communication in Pain. **S. Ajit.** Drexel Univ. Col. of Med.

- 5:35 Targeting of the Histone 3 Lysine 9 Methyltransferase Pathway in KRAS-Induced Cell Growth and Pancreatic Cancer. **G. Lomberk, G. Urrutia, M. Colon Caraballo, A. Salmonson, M. Missfeldt, A. Mathison, S. Tsai, N.V. Adsay, D. Evans, J. Iovanna, R. Urrutia.** Medical College of Wisconsin and Institut National de la Santé et de la Recherche Médicale (INSERM), France. (826.11)
- 5:48 Crosstalk Between PTBP1 and miR-101/AGO2 on Targeting MCL1—a Novel Post-Transcriptional Mechanism for MCL1 Expression. **J. Cui, W.J. Placzek.** The University of Alabama at Birmingham. (826.4)

### 163. PRO-PSYCHOTIC EFFECTS OF DRUGS OF ABUSE

#### Symposium

(Sponsored by: ASPET Division for Behavioral Pharmacology (BEH))

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAired: M.D. BERQUIST

COCHAired: M. WOOD

#### Behavioral Pharmacology

#### Neuroscience

#### Drug Discovery and Development

- 3:30 Beyond Dopamine: Neuropharmacology of Atypical Antipsychotics. **M. Wood.** Circuit Therapeutics, Inc.
- 4:00 Becoming Unglued: Glutamate Dysfunction and Psychosis. **B. Moghaddam.** Oregon Health & Sciences Univ.
- 4:30 A Trip Down the Rabbit Hole: Hallucinogens and Psychosis. **S. Powell.** Univ. of California, San Diego.
- 5:00 Reefer Madness: Insights from Cannabinoid-Induced Psychosis. **P. Skosnik.** Yale Univ.
- 5:30 There's a Cat in the Colony Room: Modeling Psychosis in Rodents. **M. Berquist.** Univ. of Arkansas for Medical Sciences.

### 164. THE MICROBIOME AND CANCER

#### Symposium

(Sponsored by: ASPET Division for Cancer Pharmacology (DCP))

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAired: M-A. BJORNSTI

COCHAired: H. JEONG

#### Cancer and Therapy

#### Microbiome

#### Inflammation/Immunity

#### Metabolism and Metabolic Disease

- 3:30 Introduction.
- 3:35 The Role of the Microbiota in Public Health. **R. Knight.** Univ. of California, San Diego.

- 4:10 Postnatal Microbial Strategies Inhibit Cancer Later in Life. **S. Eardman.** MIT.
- 4:45 The Carcinogenic Potential of Bacterial Biofilms. **J. Drewes.** Johns Hopkins Med.
- 5:20 Investigating Microbial Influences in Cancer. **A. Ojesina.** Univ. of Alabama at Birmingham.
- 5:55 Conclusion.

### 165. UPDATE ON THE GASEOUS SIGNALING MOLECULES NO, H<sub>2</sub>S, AND CO

#### Symposium

(Sponsored by: ASPET Division for Cardiovascular Pharmacology (CVP))

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: A. PAPAPETROPOULOS

COCHAired: N.S. BRYAN

#### Cardiovascular

#### Nutrition/Obesity

#### Molecular Pharmacology

- 3:30 Introduction to Gasotransmitters: An Update. **A. Papapetropoulos.** National and Kapodistrian Univ. of Athens.
- 3:40 Life after the Nobel Prize: Novel Mechanisms of eNOS Regulation Impacting Cardiovascular Function. **I. Fleming.** Goethe Univ.
- 4:05 Hydrogen Sulfide Therapy in Heart Failure. **D. Lefer.** Louisiana State Univ.
- 4:30 Regulation of Carotid Body Activity by the Heme Oxygenase/CO Pathway. **N. Prabhakar.** Univ. of Chicago.
- 4:55 Natural Product Chemistry and Nitric Oxide Production: New Strategies for NO Based Therapeutics. **N. Bryan.** HumanN, Inc.
- 5:20 Dietary Nitrate Improves Cardiovascular Health in Humans. **A. Ahluwalia.** Queen Mary Univ. of London.
- 5:45 Delayed Therapy with a Hydrogen Sulfide Donor, JK1, Protects Against Pressure Overload-Induced Heart Failure. **Z. Li, J. Kang, M. Xian, D.J. Lefer.** Louisiana State University Health Sciences Center—New Orleans and Washington State University. (698.1)
- 5:55 Concluding Remarks—Future Directions.

### 166. ASPET STUDENT/POSTDOC POSTER COMPETITION

#### Award Competition

SUN. 6:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20BC

Undergraduates, graduate and post-baccalaureate students, and postdoctoral scientists present their posters in this annual competition. Join us to view the top student/postdoc posters.

## Physiology

### 167. 2018 MENTORING SYMPOSIUM: RECOGNIZING AND RESPONDING TO IMPLICIT BIAS IN SCIENCE I

#### Symposium

(Sponsored by: APS Women in Physiology Committee)

SUN. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: D. AL ALAM

COCHAired: K. WALLACE AND D.H. HO

#### Diversity in Science

#### Career and Professional Development

- 7:00 Implicit and explicit bias in science and science education. **Charlotte Tate**. San Francisco State Univ.  
7:30 General discussion.

### 168. DO IT AGAIN: HOW TO ACHIEVE RIGOROUSLY REPRODUCIBLE RESEARCH I

#### Symposium

(Sponsored by: Trainee Advisory Committee)

SUN. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: R. DOWNEY

COCHAired: I. OBI

#### Career and Professional Development

- 7:00 Data management and storage for rigor and reproducibility. **Shai Silberberg**. NINDS/NIH.

### 169. HALLMARKS OF GROUND RULES FOR PRODUCTIVE COLLABORATIONS IN SCIENCE. DEVINING AND ESTABLISHING COLLABORATIONS

#### Symposium

(Sponsored by: APS Careers in Physiology Committee)

SUN. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: J. BRANDAUER

COCHAired: B. BECKER

#### Career and Professional Development

- 7:00 Defining and establishing collaborations. **S. Watts**. Michigan State Univ.  
7:20 Defining and establishing collaborations. **C. Northcott**. Pfizer, Inc.  
7:40 Panel discussion.

### 170. ISCHEMIC AND HYPOXIC CONDITIONING: POTENTIAL FOR PROTECTION OF VITAL ORGANS

#### Symposium

(Sponsored by: Integrative Physiology Symposium Series)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: C.A. RICKARDS

COCHAired: J.D. SPRICK

#### Cardiovascular

- 8:30 Intermittent, normobaric hypoxia training exerts robust cerebroprotection against ischemic injury. **Robert Mallet**. Univ. of North Texas Hlth. Sci. Ctr.  
9:00 Prolonged global ischemia and consequences of resuscitation to the heart and brain. **Demitri Yannopoulos**. Univ. of Minnesota.  
9:30 Remote ischemic conditioning: Trials, tribulations and clinical translation. **Karin Przyklenk**. Wayne State Univ. Sch. of Med.

### 171. TOO HOT TO HANDLE: CONTROVERSIES IN EXERTIONAL HEAT STROKE PREVENTION AND TREATMENT

#### Symposium

(Sponsored by: Environmental and Exercise Physiology Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: O. LAITANO

COCHAired: M.A. KING

#### Cardiovascular

#### Inflammation/Immunity

#### Metabolism and Metabolic Disease

- 8:30 Exertional heat stroke: Underlying physiology and misconceptions. **Michael Sawka**. Georgia Institute of Technology.  
8:50 NSAIDs and Heat Stroke: Evidence from animal models suggesting NSAIDs increase Heat Stroke morbidity. **Lisa Leon**. United States Army Research Institute of Environmental Medicine.  
9:10 Impact of NSAIDs on thermoregulatory responses in the aged. **Lacy Alexander**. Pennsylvania State University.  
9:30 Exertional heat stroke: A clinical perspective on a condition with complex etiology and current controversies regarding prevention and treatment. **William Roberts**. University of Minnesota.

**172. INFLAMMATION AND SODIUM REABSORPTION****Symposium**

(Sponsored by: Water and Electrolyte Homeostasis Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: D. LEE

COCHAired: A.V. PAI

**Salt****Inflammation/Immunity****Ion Channels and Transporters**

- 8:30 Regulation of epithelial sodium channel in salt-sensitive hypertension via inflammation-induced reactive oxygen species production. **Tengis Pavlov**. Henry Ford Hospital.
- 8:50 Getting inflamed with the sodium chloride cotransporter. **Robert Hoover, Jr.** Emory University.
- 9:10 Na<sup>+</sup>/H<sup>+</sup> exchanger regulatory factor in age-dependent salt-sensitive hypertension and renal inflammation. **Syed Khundmiri**. Howard University.
- 9:30 The role of CD8<sup>+</sup> T cells in the pathogenesis of salt-sensitive hypertension. **Shengyu Mu**. University of Arkansas for Medical Sciences.

**173. BUILDING EPITHELIAL ORGANS IN VITRO TO STUDY PHYSIOLOGY AND PATHOGENESIS OF DISEASE****Symposium**

(Sponsored by: Epithelial Transport Group)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: R. NØRREGAARD

**Emerging Technologies****Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)****Metabolism and Metabolic Disease**

- 8:30 Engineering human organs on a chip. **Donald Ingber**. Wyss Inst. for Biologically Inspired Engineer., Harvard Med. Sch.
- 9:00 Making mini-human intestine in a dish from intestinal biopsies. **Mark Donowitz**. Johns Hopkins Medical School.
- 9:30 Using kidney organoids to study cystogenesis in ADPKD. **Owen Woodward**. University of Maryland School of Medicine.

**174. OF MICE AND MEN: WHAT HAVE WE REALLY LEARNED ABOUT THE REGULATION OF CORONARY VASCULAR FUNCTION IN HEALTH AND DISEASE?****Symposium**

(Sponsored by: Cardiovascular Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: S. PHILLIPS

COCHAired: A. GOODWILL

**Cardiovascular**

- 8:30 Mechanisms of vasodilation in the human coronary micro-circulation in diabetes. **Frank Selke**. Brown Medical School.
- 8:50 Mechanisms of coronary flow control in swine models of health and disease. **Adam Goodwill**. Indiana University School of Medicine.
- 9:10 Age-related coronary microvascular dysfunction in murine models. **Amanda LeBlanc**. University of Louisville School of Medicine.
- 9:30 Multi-scale modeling of supply-demand matching in myocardial oxygen delivery. **Dan Beard**. University of Michigan.

**175. ADDRESSING HIGHER LEVELS OF BLOOM'S TAXONOMY IN THE TEACHING AND LEARNING OF PHYSIOLOGY****Symposium**

(Sponsored by: Teaching of Physiology Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: H. CLEMENTS-JEWERY

COCHAired: M. HOPPER

**Education****Career and Professional Development**

- 8:30 Fostering higher-order cognitive skills in the teaching and learning of physiology. **Janet Casagrand**. Univ. of Colorado, Boulder.
- 8:52 Using Bloom's Taxonomy to monitor assessment changes after flipping a course. **Lara DeRuisseau**. LeMoyne Col.
- 9:14 Addressing higher levels of Bloom's Taxonomy: Does student performance match perception? **Mari Hopper**. Univ. of Indiana, Evansville.
- 9:36 Using the Phys-MAPS to understand changes in students' ability to apply core physiology concepts. **Katharine Semsar**. Univ. of Colorado, Boulder

## 176. MAINTENANCE AND REMODELING OF THE NEUROMUSCULAR JUNCTION IN HEALTH AND DISEASE

### Symposium

(Sponsored by: Muscle Biology Group)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: V. LUBICIC

### Metabolism and Metabolic Disease

#### Neuroscience

- 8:30 Mechanisms by which chronic tobacco smoke exposure exacerbates aging of the motor unit. **Russell Hepple**. University of Florida.
- 8:50 Factors regulating differential neuromuscular junction vulnerability in motor neuron diseases. **Lyndsay Murray**. University of Edinburgh.
- 9:10 Interrelationships between age-related skeletal muscle stem cell and neuromuscular junction decline. **Joe Chakkalakal**. University of Rochester.
- 9:30 Activity-induced plasticity of the NMJ. **Michael Deschenes**. College of William and Mary.

## 177. NCAR YOUNG INVESTIGATOR AWARDS

### Featured Topic

(Sponsored by: Neural Control and Autonomic Regulation Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

CHAired: D.J. MORAES

COCHAired: M. POGGLITSCH

#### Neuroscience

- 8:30 Brainstem Pre-Sympathetic Neuron Controls Oscillatory Breathing in Heart Failure. **R. Del Rio, D.C. Andrade, C. Toledo, H.S. Diaz, C. Lucero, A. Arce-Alvarez**. P. Universidad Católica de Chile, Chile. (885.13)
- 8:50 Sim1-PVN Neurons in ADAM17 Mediated Neurogenic Hypertension. **S. Mukerjee, T. Basting, A. Zsombok, E. Lazartigues**. Louisiana State University Health Sciences Center and Tulane University. (885.5)
- 9:00 Role of AT<sub>1</sub> Receptor-Mediated ADAM17 Signaling in Glutamatergic Neurons in Neurogenic Hypertension. **J. Xu, E. Lazartigues**. Louisiana State University Health Sciences Center—New Orleans. (591.3)
- 9:10 Plasma Erythropoietin Concentration Determine the Carotid Body Chemosensitivity to Hypoxia and Hypercapnia in Rats. **S. Laouafa, R. Tam, A. Bairam, V. Joseph, J. Soliz**. Université Laval, Canada. (886.1)
- 9:20 Salt Diet Influences Endothelin-1 Signaling in Renal Sensory Nerves. **B.K. Becker, J.S. Speed, D.M. Pollock**. University of Alabama at Birmingham. (885.19)
- 9:30 Neurons in the Ventral Lateral Preoptic (VLPO) Area Inhibit Brown Adipose Tissue (BAT) Thermogenesis. **E.P. Conceição, C.J. Madden, S.F. Morrison**. Oregon Health & Science University. (592.5)

- 9:40 Redox-Driven Lymphocyte Inflammation Sensitizes Mice to Psychological Stress-Mediated Hypertension. **A.J. Case, C.W. Collins, A.J. Kohl, C.M. Moshfegh, S. Elkhatab**. University of Nebraska Medical Center. (737.1)

## 178. RENAL SECTION YOUNG INVESTIGATOR AWARD FEATURED TOPIC: NOVEL ROLES FOR RENAL GPCRS

### Featured Topic

(Sponsored by: Renal Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: J. PLUZNICK

COCHAired: M. CAPLAN

- 8:30 Orphan GPCRs and Renal Physiology. **Jennifer Pluznick**. Johns Hopkins School of Medicine.
- 9:00 Activation of G Protein-Coupled Estrogen Receptor Promotes Endothelin-Dependent Natriuresis in Female Rats. **E.Y. Gohar, I.E. Obi, E.M. Daugherty, C. De Miguel, M. Kasztan, J.S. Pollock, D.M. Pollock**. University of Alabama at Birmingham. (619.8)
- 9:15 Deep Proteomic Quantification of Inner Medullary Collecting Duct Protein Phosphorylation: Response to Vasopressin. **V. Deshpande, C-L. Chou, M. Knepper**. National Heart, Lung, and Blood Institute and National Institutes of Health. (619.9)
- 9:30 Kir4.1 Is Involved in Bradykinin-Induced Inhibition of NCC and Natriuresis. **P. Wu, Z-X. Gao, D-D. Zhang, C.P. Vio, R. Gu, W-H. Wang**. New York Medical College, Harbin Medical University, People's Republic of China and Pontificia Universidad Católica de Chile, Chile. (619.7)
- 9:45 Intrarenal Bradykinin (BK) Is Decreased in Mice with Prorenin Receptor (PRR) Deficiency in the Collecting Duct. **B. Visniauskas, J. Mourain, J.R. Chagas, M.C. Prieto**. Tulane University and Universidade Federal de Sao Paulo, Brazil. (619.4)
- 10:00 Renal Olfactory Receptor 1393 Contributes to the Progression of Diabetes. **B.D. Shepard, H. Koepsell, J.L. Pluznick**. Georgetown University, University of Würzburg, Germany and Johns Hopkins University School of Medicine. (720.3)
- 10:15 Genetic Deletion of P2Y<sub>2</sub> Receptor Suppresses Lithium-Induced Medullary Collecting Duct Remodeling in Mice. **B.K. Kishore, J. Peti-Peterdi, T. Liu, A. Riquier-Brison, N.G. Carlson, Y. Zhang**. University of Utah and VA Medical Center and University of Southern California. (621.4)

## 179. ROLE OF THE MICROBIOME IN CARDIOVASCULAR DISEASE

### Featured Topic

(Supported by *Journal of Clinical Science*)

(Sponsored by: Cardiovascular Section)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: E. BUYS

### Cardiovascular

- 8:30 Suppression of the Gut Microbiome-Derived Metabolite Trimethylamine N-Oxide Prevents Western Diet-Induced Arterial Dysfunction. **V.E. Brunt, Z.J. Sapinsley, R.A. Gioscia-Ryan, J.J. Richey, M.C. Zigler, D.R. Seals.** University of Colorado Boulder. (582.6)
- 8:45 Examining the Role of Gut Dysbiosis in Neuroinflammation and Hypertension in a Model of Obstructive Sleep Apnea. **D. Durgan, B.P. Ganesh, J. Nelson, J. Eskew, N. Ajami, J. Petrosino, R. Bryan.** Baylor College of Medicine, The University of Texas Health Science Center and Mercer University. (582.2)
- 9:00 Short-Term Captopril Treatment Causes Persistently Decreased Blood Pressure Associated with Long-Lasting Shifts in Gut Microbiota and Improvement in Gut Pathology. **T. Yang, V.P. Aquino, Q. Yanfei, G.O. Lobaton, C. Jobin, E.M. Richards, C.J. Pepine, M.K. Raizada.** University of Florida. (582.7)
- 9:15 Dysbacteriosis an Inciting Cause of Endothelial Dysfunction Mediated Through Mitochondrial DNA Interactions. **K. Ait-Aissa, J.C. Hockenberry, A.O. Kadlec, D.S. Chabowski, J.M. Linn, D.D. Gutterman, A.M. Beyer.** Medical College of Wisconsin. (582.3)
- 9:30 The oral microbiome and hypertension. **Nathan Byran.** Baylor College of Medicine.

## 180. PHYSIOLOGICAL GENOMICS TRAINEE HIGHLIGHTS

### Featured Topic

(Sponsored by: Physiological Genomics Group)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28DE

- 8:30 Transcriptomic Profiling of Mitochondrial Dysfunction Induced Apoptosis in Accelerated Cardiovascular Disease. **F. Xu, F. Guan, A. Halim, L. Ho, K. Lim, T. Lu.** Brookline High School, Brigham and Women's Hospital and Harvard Medical School, University of Rochester and Massachusetts General Hospital and Harvard Medical School. (585.1)
- 8:45 Aerobic Exercise Training and Cardiac ACE2 Overexpression Promotes Beneficial Effects in Circulating Renin Angiotensin System. **C.d.V. Gomes-Gatto, A.C. Silveira, J. L.P. Gomes, T. Fernandes, E. Lazartiques, E.M. Oliveira.** University of São Paulo, Brazil and Louisiana State University Health Sciences Center—New Orleans. (586.8)
- 9:00 Long Non-Coding RNAs Are Transcriptional Regulators of Contractile Protein-Coding Genes in Skeletal Muscle. **J.D. Resnick, C.A. Gilbert, A.J. Lowrey, M.C. Callier, C.E. Pandorf.** Mercer University and Mercer University School of Medicine. (753.1)

- 9:15 Effect of 17 $\beta$ -Estradiol on Endothelial Cell Expression of Inflammation-Related miRNAs. **M. a.V. Levy, J.G. Hijmans, K.A. Stockelman, L.M. Brewster, W.R. Reiakvam, Z.A. Goldthwaite, J.J. Greiner, C.A. DeSouza.** University of Colorado Boulder. (753.4)
- 9:30 Nuclear-Mitochondrial Crosstalk in the Heart During Diabetes Mellitus—the Impact on RNA in Mitochondrial Subpopulations. **Q.A. Hathaway, D.L. Shepherd, A.J. Durr, J.M. Hollander.** West Virginia University. (585.3)
- 9:45 The Molecular Mechanisms of Chronic Kidney Disease Induced Hyperphosphatemia in Cerebral Microvasculature. **J. Xu, C-P. Chung, P-T. Lee, L. Ho, K. Lim, T. Lu.** Harvard College, Harvard University, Taipei Veterans General Hospital, Taiwan, Kaohsiung Veterans General Hospital, Taiwan, Brigham and Women's Hospital and Harvard Medical School and Massachusetts General Hospital and Harvard Medical School. (586.9)

## 181. TRANSLATIONAL PHYSIOLOGY SHOWCASE: BENCH TO BEDSIDE AND IN BETWEEN

### Featured Topic

(Sponsored by: Translational Physiology Interest Group)

SUN. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: C. YOUNG

### Cardiovascular

### Metabolism and Metabolic Disease

### Nutrition/Obesity

### Mitochondria in health and disease from a translational perspective

- 8:30 Profiling Mitochondrial Quality Control in Human Myotubes Derived from Severely Obese Non-Diabetic and Type 2 Diabetic Patients. **A. Gundersen, S. Park, G. Dubis, J. Houmard, K. Zou.** University of Massachusetts Boston and East Carolina University. (879.1)
- 8:36 Patterns of Suppressed Mitochondrial Respiration in Isolated Muscle Fibers from Type 2 Diabetics. **K.D. Turner, M.P. Harris, A. Kronemberger, K. Ueda, A.J. Feider, H. Kenny, E.J. Anderson, E.D. Abel, D.P. Casey, V.A. Lira.** University of Iowa. (618.26)
- 8:42 Exercise Induces Depot-Specific Adaptations to White and Brown Adipose Tissue. **L.A. Baer, A.C. Lehnig, R.S. Dewal, K.M. Kitching, D.A. Sindeldecker, L.J. Goodyear, K.I. Stanford.** The Ohio State University and Joslin Diabetes Center. (855.24)
- 8:48 The Role of the Unfolded Protein Response in Mediating Adaptations to Exercise Responsiveness. **C.R. Hart, J-H. Koh, S. Dasari, A.Z. Lalia, I.R. Lanza.** Mayo Clinic. (587.13)
- 8:54 H1/H2 Histamine Receptor Blockade Lowers Substrate-Dependent Mitochondrial H<sub>2</sub>O<sub>2</sub> Emission in Deep Gastrocnemius Muscle Following a Bout of Prolonged Exercise. **L.R. Davidson, H.E. Wallace, M.C.W. Bell, K. Brebner, D.A. Kane.** St. Francis Xavier University, Canada. (618.11)

9:00 Effects of Roux-En-Y Gastric Bypass Surgery on Mitochondrial Quality Control Proteins in Human Myotubes Derived from Severely Obese Humans. **B.N. Kugler, P.N. Gona, S.N. Saunders, S. Park, G. Dubis, J.A. Houmard, K. Zou.** University of Massachusetts Boston and East Carolina University. (879.4)

9:06 **Roundtable discussion.**

**Sex and cardiometabolic disease from a translational perspective.**

9:14 Sex Differences in Renal Inflammation and Injury in High Fat Diet Induced Hypertension in Dahl Salt Sensitive Rats. **R. Fernandes, H. Garver, J.J. Harkema, J.J. Galligan, G.D. Fink, H. Xu.** Michigan State University. (850.5)

9:20 Chronic 17 $\beta$ -Estradiol Supplementation Reduces Blood Pressure and Alters Renal Estrogen Receptor Expression in Female Growth-Restricted Rats in Later Life. **G.K. Davis, A. Cole, A.D. Newsome, N.B. Ojeda, B.T. Alexander.** University of Mississippi Medical Center. (906.8)

9:26 Estrogen Receptor Beta and G-Protein Coupled Estrogen Receptor Are Located and Activated on Microglia by Estrogen. **K. Dvorak, M. Boyer, M.J. Barnes, S.C. Clayton.** Des Moines University. (885.22)

9:32 A Novel Role for Hindbrain Astrocytes in Leptin-Mediated Energy Balance and the Development of Obesity. **L. Stein, R. Lhamo, A. Corini, A. Cao, J. Chen, M. Hayes.** University of Pennsylvania. (604.7)

9:38 Inflammatory Reproductive White Adipose Tissue Characterizes the Obese Preeclamptic-Like BPH Mouse Prior to Pregnancy. **K. Olson, D. Reijnders-Most, N. Douglas, L.M. Redman, J.L. Sones.** Louisiana State University School of Veterinary Medicine, Columbia University Medical Center and Pennington Biomedical Research Center. (882.13)

9:44 Local Angiotensin 1-7 Administration Augments Microvascular Endothelial Function in Women Who Have Had Preeclampsia. **A. Stanhewicz, L. Alexander.** Pennsylvania State University. (845.1)

9:50 **Roundtable discussion.**

**182. REDOX BIOLOGY: A UNIFYING THEME IN THE ETIOLOGY OF HUMAN DISEASES**

**Symposium**

(Sponsored by: Society for Redox Biology and Medicine (SFRBM))

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28DE

CHAired: A. CASE

COCHAired: C. KEVIL

**Inflammation/Immunity**

1:30 Chair's Introduction.

1:35 The NADPH oxidase NOX4 in endothelial function. **Katrin Schröder.** Goethe-University—Germany.

2:00 Reductive Stress Promotes Heart Failure in Mouse and Human. **R. Namakkal Soorappan.** The University of Alabama at Birmingham. (771.2)

2:15 Renal Hv1: A critical component of reactive oxygen species production outside the immune system? **Paul O'Connor.** Medical College of Georgia / Augusta University.

2:40 Ketone Salts Inhibit Production of Superoxide Anions During Normobaric and Hyperbaric Hyperoxia in Rat Solitary Complex Neurons. **C. Hinojo, G. Ciarlone, D. D'agostino, J. Dean.** University of South Florida. (771.9)

2:55 Concluding remarks.

**183. ENAC PROTEINS AS MECHANOSENSORS IN ENDOTHELIAL AND VASCULAR SMOOTH MUSCLE CELLS**

**Symposium**

(Sponsored by: Renal Section)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: H. DRUMMOND

COCHAired: Z. ASHLEY

**Cardiovascular**

1:30 ENaC: An evolutionary model of mechano-electrical coupling. **Thomas Kleyman.** University of Pittsburgh.

1:50 Mechanotransduction in renal VSMCs is mediated by coupling of ENaC and TRP signaling. **Heather Drummond.** University of Mississippi Medical Center.

2:10 How do ENaCs sense mechanical force? Or extracellular Na<sup>+</sup> regulates ENaC function in blood vessels. **Shujie Shi.** University of Pittsburgh.

2:30 Shear force sensing of ENaC in endothelial cells requires N-glycans and the extracellular matrix. **Martin Fronius.** University of Otago.

**184. SEX DIFFERENCES IN CENTRAL CIRCUITS**

**Symposium**

(Sponsored by: CNS Section)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

CHAired: R. WAINFORD

COCHAired: K. BROWNING

**Neuroscience**

1:30 Sex based differences in the central responses to prenatal stress. **Tracy Bale.** University of Pennsylvania.

2:00 Sex based differences following early adverse life events. **Beverly Greenwood-Van Meerveld.** University of Oklahoma.

2:30 Sex differences in the brainstem and implications for GI function. **Yanyan Jiang.** Penn State.

**185. ORGANOID: MODELLING CELL PHYSIOLOGY AND DISEASE IN 3D****Symposium***(Sponsored by: Cell and Molecular Physiology Section)*

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: N.A. BRADBURY

COCHAired: N. AMEEN

**Cardiovascular****Inflammation/Immunity****Neuroscience**

- 1:30 Introduction to organoid biology. **Neil Bradbury**. Chicago Medical School.
- 1:40 Human pancreatic organoids as a model for cancer. **David Tuveson**. Cold Spring Harbor Laboratory.
- 2:05 Directing stem cell differentiation in airway organoids. **Henry Danahay**. University of Sussex.
- 2:30 Getting organoids started in your own laboratory. **Ryan Condor**. StemCell Technologies.

**186. AMERICAN JOURNAL OF PHYSIOLOGY HEART AND CIRCULATORY PHYSIOLOGY EDITORS SYMPOSIUM****Symposium***(Sponsored by: Cardiovascular Section)*

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: I.H. ZUCKER

COCHAired: M. LINDSEY

- 1:30 Disease modeling using hiPSC-derived differentiated cells: A platform for integrative physiology. **Ivor Benjamin**. Medical College of Wisconsin.
- 1:50 Gender difference in the development of cardiac amyloidosis. **Ronglih Liao**. Harvard Medical School.
- 2:10 The nervous heart: Insights into autonomic-mediated arrhythmias. **Crystal Ripplinger**. University of California at Davis.
- 2:30 Cerebromicrovascular aging: new mechanisms. **Zoltan Ungvari**. University of Oklahoma.

**187. APS PRESIDENT'S SYMPOSIUM SERIES I. EXOSOMES: THE NEW FRONTIER. CELL BIOLOGY OF EXOSOMES****Symposium**

President's Symposium Series

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: L. O'DRISCOLL

- 1:30 Cellular regulation of exosome and other extracellular vesicles production and release. **Clotilde Théry**. INSERM U932
- 2:00 Characterization and analysis of exosomes/extracellular vesicles. **Jennifer Jones**. NCI, NIH.
- 2:30 Exosomes and intracellular signaling. **Riccardo Alessandro**. Univ. of Palermo.

**188. NON-CANONICAL FUNCTIONS OF THE LUNG IN IMMUNITY AND HEMOSTASIS****Symposium***(Sponsored by: Respiration Section)*

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: W.M. KUEBLER

COCHAired: J.K. JUSS

**Inflammation/Immunity****Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

- 1:30 Platelet biogenesis in the lung. **Mark Looney**. UCSF School of Medicine.
- 2:00 The lung as a source and effector site for factor XII. **Malgorzata Wygrecka**. University of Giessen.
- 2:30 Antigen-presentation in the lung. **Claudia Jakobzick**. National Jewish Health.

### 189. FROM GENE TO FUNCTION OF COMPLEX TRAITS: ANALYSIS OF GENES IDENTIFIED IN HUMAN GWAS AND ANIMAL MODELS

#### Featured Topic

(Sponsored by: Physiological Genomics Group)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: L. SOLBERG WOODS

- 1:30 Learning About An Old Dog's New Tricks: The Role Of Glyoxalase 1 In Regulating Behavior And Gabaergic Signaling And How We Stumbled Across It. **Abraham Palmer**. University Of California San Diego.
- 2:00 The IMPC: A Global Scientific Infrastructure for Understanding the Role of Genes in Complex Traits. **V. Muñoz-Fuentes, T.F. Meehan, K. C.K. Lloyd, A-M. Mallon, D. Smedley, H. Parkinson**. European Bioinformatics Institute, United Kingdom, University of California, Davis, Medical Research Council Harwell, United Kingdom and Queen Mary University of London, United Kingdom. (754.1)
- 2:15 Characterization of Coding and Noncoding Variants for Human CKD Using Novel Strategies. **J.W. Prokop, N.C. Yeo, C. Ottmann, B.A. Link, E.M. Mendenhall, B.I. Freedman, J. Lazar, H.J. Jacob**. Michigan State University, Harvard Medical School, Eindhoven University of Technology, Netherlands, Medical College of Wisconsin, The University of Alabama in Huntsville, Wake Forest and HudsonAlpha Institute for Biotechnology. (754.2)
- 2:30 GNAI2 Polymorphic Variance Associates with the Salt-Sensitivity of Blood Pressure. **A.A. Frame, R.D. Wainford**. Boston University School of Medicine. (754.3)
- 2:45 Tick-Tock, Tick-Tock: Clock Gene Expression Is Altered in Sleep Apnea. **M. Holzworth, M. Canales, R. Berry, R. Beyth, M.L. Gumz**. University of Florida. (585.2)

### 190. COMPARATIVE AND EVOLUTIONARY PHYSIOLOGY SECTION TRAINEE-DRIVEN FEATURED TOPIC

#### Featured Topic

(Sponsored by: Comparative and Evolutionary Physiology Section)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: D. CROSSLEY

#### Cardiovascular

- 1:30 Active NH<sub>4</sub><sup>+</sup> Excretion via Na<sup>+</sup>/NH<sub>4</sub><sup>+</sup>(H<sup>+</sup>) Exchange in the Highly Ammonia Tolerant Hagfish (*Epatretus stoutii*). **A.M. Clifford, M.P. Wilkie, S.L. Edwards, A. Weinrauch, G.G. Goss**. University of Alberta, Canada, Wilfrid Laurier University, Canada and Appalachian State University. (602.5)
- 1:45 Evolutionarily-Conserved Mechanisms of Nutrient Acquisition in the Primordial Vertebrate, the Pacific Hagfish. **A. Weinrauch, C. Glover, T. Blewett, A. Clifford, G. Goss**. University of Alberta, Canada and Athabasca University, Canada. (602.6)

- 2:00 Crude Oil Impairs Heart Cell Function in the Mahi-Mahi (*Coryphaena hippurus*). **R.M. Heuer, H.A. Shiels, G.L. J. Galli, G.K. Cox, J.D. Stieglitz, D.D. Benetti, M. Grosell, D.A. Crossley II**. University of Miami, University of Manchester, United Kingdom and University of North Texas. (602.11)
- 2:15 Paralytic Hypo-Energetic State Facilitates Anoxia Tolerance Despite Ionic Imbalance in Adult *Drosophila melanogaster*. **J.B. Campbell, M.K. Andersen, J. Overgaard, J.F. Harrison**. Arizona State University and Aarhus University, Denmark. (602.4)
- 2:30 Incomplete Caspase Signaling During Hibernation in the Golden-Mantled Ground Squirrel, *Spermophilus lateralis*. **M.D. Treat, F. van Breukelen**. University of Nevada, Las Vegas. (602.2)
- 2:45 Noradrenergic Tuning, Not Simple Rate Effects, Produces Temperature-Sensitivity of the Respiratory Network in Bullfrogs. **M. Vallejo, J.M. Santin, L.K. Hartzler**. Wright State University and University of Missouri. (602.1)

### 191. EXPLORING NOVEL MECHANISMS TO IMPROVE EXERCISE TOLERANCE IN HEALTH AND DISEASE

#### Featured Topic

(Sponsored by: Environmental and Exercise Physiology Section)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: R. HARRIS

COCHAired: J. BARNES

#### Cardiovascular

#### Inflammation/Immunity

#### Cancer and Therapy

- 1:30 Mechanism and consequences of O<sub>2</sub> supply limitations in heart failure. **Markus Amann**. University of Utah.
- 2:00 Central Cardiac Determinants of the Speed-Duration Relationship in Heart Failure Rats. **J.C. Craig, T.D. Colburn, J.T. Caldwell, D.M. Hirai, A. Tabuchi, J.H. Merino, C.J. Ade, D.C. Poole, T.I. Musch**. Kansas State University. (853.15)
- 2:15 Inorganic Nitrate Supplementation Improves Exercise Tolerance and Calf Vascular Function in Patients with Peripheral Artery Disease. **J. Bock, D. Treichler, K. Ueda, W. Hughes, D. Casey**. University of Iowa. (853.2)
- 2:30 Skeletal Muscle Parvoin Regulates Exercise Tolerance and Glucose Homeostasis in Mice. **D.S. Lark, J.R. Kwan, L. Lantier, R. Zent, A. Pozzi, D.H. Wasserman**. Vanderbilt University. (853.4)
- 2:45 Acute Sildenafil Treatment Improves Exercise Capacity in Patients with Cystic Fibrosis. **V. Gonzalez, N. Siegler, R. Crandall, K.T. Mckie, C. Forseen, P. Rodriguez-Miguel, M. Tucker, R.A. Harris**. Medical College of Georgia and Augusta University. (853.5)

## 192. CELL PLASTICITY AND REPAIR AND DISEASE MECHANISMS IN THE STOMACH, LIVER AND INTESTINE

### Featured Topic

(Sponsored by: GI and Liver Physiology Section)

(Cosponsored by: AJP—Gastrointestinal and Liver Physiology)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: A.E. ZEMPER

### Microbiome

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

### Cancer and Therapy

- 1:30 Intestinal stem cells in tissue repair. **Melissa Wong**. Oregon Health Science University.
- 2:15 Rapid Crypt Cell Remodeling Regenerates the Intestinal Stem Cell Niche After Stem Cell Loss Induced by Notch Inhibition. **N. Bohin, T.M. Keeley, A.J. Carulli, E.A. Carlson, J. Gao, I. Aifantis, M.W. Rajala, M.G. Myers, J.C. Jones, C.D. Brindley, P.J. Dempsey, L.C. Samuelson**. University of Michigan, New York University School of Medicine and University of Colorado School of Medicine. (612.2)
- 2:30 Microvillus Inclusion Formation in Myosin VB Knockout Mice Occurs Through Apical Bulk Endocytosis and Requires Syndapin 2. **A.C. Engevik, J. Faust, M. Tyska, J.R. Goldenring**. Vanderbilt University School of Medicine and Vanderbilt University. (612.4)
- 2:45 Deletion of Claudin-7 Disrupts Epithelial Cell Self-Renewal in Mouse Colon. **T. Xing, L. J. Benderman, S. Sabu, Y. Chen**. Brody School of Medicine, East Carolina University and East Carolina University. (612.1)
- 3:00 Effect of EGFR on Calcium Mobilization and Epithelial Repair in Gastric Organoids. **K. Engevik, E. Aihara, A. Matthis, M. Montrose**. University of Cincinnati. (612.3)
- 3:15 Determining the Mechanism by Which PRDM16 Maintains the Adult Small Intestinal Epithelium. **R. Stine, P. Seale**. University of Pennsylvania. (612.5)

## 193. INNATE AND ADAPTIVE IMMUNITY IN CARDIOVASCULAR PHYSIOLOGY

### Featured Topic

(Sponsored by: Cardiovascular Section)

SUN. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: M. MADHUR

COCHAired: D. CORNELIUS

### Cardiovascular

- 1:30 Macrophage phenotypic modulation in coronary artery disease. **Cornelia Weyand**. Stanford University.

- 2:00 A Crucial Role for Interleukin-18/IL-18R Signalling Axis in the Development of Renal Inflammation and Elevated Blood Pressure in 1 Kidney/DOCA/Salt-Induced Hypertension. **J.M. Thomas, Y. H. Ling, S. Murali Krishnan, D. Ferens, S. Masters, B. Kemp-Harper, A. Mansell, C. Sobey, A. Vinh, G. Drummond**. La Trobe University, Australia, Monash University, Australia, Walter and Eliza Hall Institute of Medical Research, Australia and Hudson Institute of Medical Research, Australia. (718.15)
- 2:15 Leptin Restores Endothelial Function, Reduces Vascular Inflammation but Not Vascular Remodeling in Mouse Models of Congenital and Acquired Lipodystrophy via Anti-Oxidant Properties. **T. Bruder do Nascimento, J. Faulkner, W. Chen, E.J. Belin de Chantemèle**. Augusta University. (718.9)
- 2:30 CD8 T-Cells Have a Biphasic Role During Post-Myocardial Infarction Cardiac Remodeling. **K.Y. DeLeon-Pennell, M.L. Lindsey, E. Flynn, D.R. Menick**. University of Mississippi Medical Center and Medical University of South Carolina. (718.5)
- 2:45 High Salt Promotes Human Monocytes Activation in Vitro and in Vivo. **N. Ruggeri Barbaro, J.D. Foss, A. Alsouqi, R. Loperena, J. Van Beusecum, M. Ao, F. Elijovich, C.L. Laffer, W. Chen, A. Ikizler, D.G. Harrison, A. Kirabo**. Vanderbilt University. (718.17)

## 194. EPIGENETIC MEMORY OF ENVIRONMENTAL EXPOSURE: A PHYSIOLOGICAL PERSPECTIVE

### Symposium

(Sponsored by: Environmental and Exercise Physiology Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: A. MURASHOV

COCHAired: T.L. CLANTON

- 3:35 Molecular Mechanisms of Epigenetic Regulation. **Scott B. Rothbart**. Van Andel Res. Inst., Grand Rapids, MI.
- 3:53 Ancestral paternal nutrition and modulation of cancer risk and phenotype. **Sonia de Assis**. Georgetown University Medical Center.
- 4:10 Mechanisms underlying the nutritional programming of cardio-metabolic health. **Susan Ozanne**. University of Cambridge.
- 4:30 Mechanisms underlying developmental programming of thrifty phenotype. **Alexander Murashov**. East Carolina University.

## 195. INTERSECTION OF CENTRAL PAIN AND REWARD CIRCUITRY IN CNS DISORDERS

### Symposium

(Sponsored by: CNS Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: S. EDWARDS

COCHAired: M. ROBERTO

- 3:30 Neuroinflammation caused by chronic pain alters limbic circuitry: Implications for pain and mood disorders. **Catherine Cahill**. University of California—Irvine.
- 4:00 Role of the opioid system in the reward pathway in pain-induced negative affect. **Jose Moron-Concepcion**. Washington University in St Louis.
- 4:30 Neurobiology of pain and negative reinforcement in drug addiction: New translational targets. **Amanda Pahng**. LSU Health New Orleans.

## 196. JOHN FORTE GIL PLENARY SESSION

### Featured Topic

(Sponsored by: GI and Liver Physiology Section)

(Cosponsored by: AJP—Gastrointestinal and Liver Physiology)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28DE

CHAired: J. UNO

COCHAired: M. FREY

- 3:30 Protective Effects of Human Milk Oligosaccharides on Intestinal Epithelial Function Assessed in Enteroid-Derived Monolayers. **A. Drobny, S. R. Ibeawuchi, S. Das, L. Bode, K.E. Barrett**. University of California and San Diego. (873.22)
- 3:45 Enteroglial Adenosine A2b Receptor Signaling Contributes to Local Cytokine Production and Delays Functional Recovery Following Acute Inflammation in the Mouse Colon. **V. Grubisic, H.K. Eltzschig, B.D. Gulbransen**. Michigan State University, Dell Medical School and The University of Texas at Austin. (871.8)
- 4:00 Gene Expression Analysis of the Effect of Microbial Tryptophan Metabolites on T-Cell Differentiation. **C. Cheng, S. Steinmeyer, A. Jayaraman, R. Alaniz**. Texas A&M University. (613.2)
- 4:15 Targeting the Prolactin Receptor Signaling Using an Antipsychotic Drug to Suppress Pancreatic Cancer. **P. Dandawate, G. Kaushik, D. Subramaniam, P. Ramamoorthy, C. Ghosh, S. Choudhury, D. Standing, A. Dhar, S.M. Thomas, S. Santimukul, S. Padhye, O. Tawfik, S. Weir, R.A. Jensen, S. Anant**. University of Kansas Medical Center, Pittsburg State University and Abeda Inamdar Senior College, India. (610.3)
- 4:30 Hypoxia Inducible Factor (HIF)-1 Accelerates Epithelial Wound Healing Through Regulation of Integrin- $\alpha 5\beta 1$ . **B. Goggins, K. Minahan, A. Mathe, G. Liu, M. Walker, J. Horvat, D. Knight, S. Keely**. University of Newcastle and Hunter Medical Research Institute, Australia. (761.4)

- 4:45 Fish-Oils Protect Against Hepatic Inflammation Following LPS Stimulation. **M.L. Schaller, D.R. Kamm, M.P. Harris, K.A. Witt, K.E. Sandoval, J.S. Wooten**. Southern Illinois University Edwardsville. (760.8)

## 197. PSYCHOLOGICAL STRESS DISORDERS: NOVEL CONCEPTS AND MECHANISMS

### Featured Topic

(Sponsored by: Neural Control and Autonomic Regulation Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: R. SABHARWAL

COCHAired: A.K. JOHNSON

### Neuroscience

- 3:30 Contributions of the renin-angiotensin system in psychological stress. **Juan Saavedra**. Georgetown University Medical Center.
- 4:00 Activation of Angiotensin Type 2 Receptor (AT2R) Contributes to Fear Memory. **Z. Yu, A.P. Swiercz, L. Hopkins, E.G. Krause, P.J. Marvar**. George Washington University and University of Florida. (737.11)
- 4:15 Differences in Excitatory and Inhibitory Balance Within the Paraventricular Nucleus Reflects Response Variability to Acute Stress. **M.M. Knuepfer, H. Zheng, N.B. Hoffman-Schepers, N.M. Sharma, K.P. Patel**. St. Louis University School of Medicine and University of Nebraska Medical Center. (737.9)
- 4:30 T Cell Inhibition During Pregnancy Prevents Post-Partum Anxiety-Like Behavior in Rats with a History of Severe Preeclampsia/HELLP Syndrome. **K. Wallace, T. Bowles, S-K. Spencer, C. Bean**. University of Mississippi Medical Center. (737.6)
- 4:45 Prehypertension Augments Autonomic Imbalance in Post-Traumatic Stress Disorder (PTSD). **I.T. Fonkoue, J. Kang, P. Marvar, J. Park**. Emory University and George Washington University. (737.8)

## 198. COMMUNICATION AND MISCOMMUNICATION IN LUNG INJURY AND REPAIR

### Featured Topic

(Sponsored by: Respiration Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: M. KOVAL

COCHAired: K. BIRUKOV

### Inflammation/Immunity

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

- 3:30 Vascular niche modulates lung regeneration and Fibrosis. **Bi-Sen Ding**. Weill Cornell Medical College.

- 4:00 Modulation of Myeloid Cell Recruitment and Activation by Alveolar Epithelial Type 2 Cells Drives Early Inflammation in a Murine Model of Mutant Surfactant Protein-C Pulmonary Fibrosis. **A. Venosa, Y. Tomer, M. Kopp, S. Jamil, M.F. Beer.** University of Pennsylvania. (746.4)
- 4:15 Lung Immune Regulation by Vectorial Transport of Endothelial Mitochondria. **M.N. Islam, D.J. Rowlands, G. Gusarova, J. Bhattacharya.** Columbia University and Novartis Institute of Biomedical Research. (746.7)
- 4:45 Endothelial Caveolin-1 Positive Microvesicles and Apoptotic Bodies as Early Biomarkers of Acute Lung Injury and Possible Mediators of TGF- $\beta$ -Mediated Repair/Remodeling. **S. D. S. Oliveira, M. Castellon, R. Machado, M.G. Bonini, R. Minshall.** University of Illinois at Chicago and Indiana University. (746.3)
- 5:00 PTEN Suppresses Epigenetic Modulation of ERG Transcription Factor to Maintain Endothelial Lineage and Vascular Integrity. **V. A. B. R., M. Anwar, J. C. Joshi, T. Mohammad, F. Mohammad, L. Yue, D. Mehta.** University of Illinois at Chicago. (746.9)

## 199. MICROGLIA AS EFFECTORS OF RESPIRATORY PLASTICITY IN HEALTH AND DISEASE

### Featured Topic

(Sponsored by: Respiration Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAIR: R. KINKEAD

COCHAIR: F. POWELL

### Neuroscience

### Inflammation/Immunity

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

- 3:30 Dark microglia and pathological remodeling of neuronal circuits. **Marie-Ève Tremblay.** Université Laval.
- 4:00 Inflammation Differentially Impacts Phrenic Long-Term Facilitation (PLTF) in Rats with Motor Neuron Death Induced by Intrapleural CTB-Saporin Injections. **N.L. Nichols, M.A. Tanner.** University of Missouri. (625.17)
- 4:15 Is Regulation of Microglial Functions by T3 Dependent on the Micro-Environment?: Insights from the Brainstem Respiratory Control Network of Newborn Mice. **J-P. Rousseau, K. Kitazono, Y. Yoshioka, M. Noda, R. Kinkead.** Université Laval, Canada and Kyushu University, Japan. (625.16)
- 4:30 Gestational Intermittent Hypoxia Induces Neuroinflammation and Impairs Compensatory Respiratory Plasticity in Adult Offspring. **A. Meza, M. Gumnit, A. Ewald, K. Braegelmann, E.A. Kiernan, J.N. Ouellette, S.M. Johnson, J.J. Watters, T. Baker.** University of Wisconsin—Madison. (625.18)
- 4:45 Hypoxia-Induced Pulmonary Hypertension in CS3CR1-Deficient Mice Correlates with Decreased Microglia Activation. **A.C. Oliveira, V. Aquino, R.K. Sharma, G. Lobaton, J.K. Harrison, E.M. Richards, M.K. Raizada.** University of Florida. (625.19)

## 200. ERNEST H. STARLING DISTINGUISHED LECTURESHIP OF THE WATER AND ELECTROLYTE HOMEOSTASIS SECTION

### Lecture

(Sponsored by: Water and Electrolyte Homeostasis Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

- 3:30 Diet, inflammation, and hypertension. **David Mattson.** Med. Col. of Wisconsin.

## 201. CLAUDE BERNARD DISTINGUISHED LECTURESHIP OF THE APS TEACHING OF PHYSIOLOGY SECTION

### Lecture

(Sponsored by: Teaching of Physiology Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

### Education

### Career and Professional Development

### Diversity in Science

Made possible in part by APS Strategic Partner ADInstruments

- 3:30 Transformations: Paths to student-centered, evidence-based physiology education. **Jenny McFarland.** Edmonds Community Col.

## 202. HUGH DAVSON DISTINGUISHED LECTURESHIP OF THE APS CELL AND MOLECULAR PHYSIOLOGY SECTION

### Lecture

(Sponsored by: Cell and Molecular Physiology Section)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

### Emerging Technologies

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

### Cancer and Therapy

- 3:30 Confessions of a long-term extra-marital affair with bicarb. **Paul Quinton.** UCSD.

**203. KALEY AWARD FEATURED TOPIC: CEREBRAL VASCULAR DYSFUNCTION AND IMPAIRED COGNITIVE FUNCTION**

**Featured Topic**

(Sponsored by: Cardiovascular Section)

(Cosponsored by: Microcirculatory Society)

SUN. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: R. ROMAN

COCHAired: Z. UNGVARI

- 3:30 20-HETE, vascular dysfunction, hypertension and susceptibility to kidney disease and impaired cognitive function. **Richard Roman**. Univ. of Mississippi Med. Ctr.
- 4:00 Elevated Aortic Stiffness Is Associated with Weaker Executive Function in Individuals with Lower Cognitive Reserve via Reductions in Frontal Cerebrovascular Reserve. **L.E. DuBose, D.J. Moser, L.L. Boles Ponto, G.L. Pierce**. University of Iowa. (711.3)
- 4:15 Pharmacologically-Induced Impairment of Neurovascular Coupling Responses Alters Gait Coordination in Mice. **S. Tarantini, A. Yabluchanskiy, G.A. Fulop, P. Hertelendy, M.N. Valcarcel-Ares, T. Kiss, J.M. Bagwell, D. O'Connor, E. Farkas, F. Sorond, A. Csiszar, Z. Ungvari**. University of Oklahoma Health Sciences Center, University of Szeged, Hungary and Northwestern University. (711.9)
- 4:30 Obesity in Aging Exacerbates Neuroinflammation and Alters Eicosanoid Profiles in the Mouse Hippocampus: Potential Role in Impaired Synaptic Plasticity and Cognitive Decline. **T. Kiss, M.N. Valcarcel-Ares, A. Yabluchanskiy, S. Tarantini, F. Deak, Z. Ungvari, A. Csiszar**. University of Oklahoma Health Sciences Center. (711.7)
- 4:45 Endogenous Renin-Angiotensin System Activation Causes Accelerated Cerebral Vascular Dysfunction in Mice Expressing Dominant-Negative Mutations in PPAR $\gamma$  in Endothelium. **A.R. Nair, L.N. Agbor, M. Mukohda, X. Liu, C. Hu, J. Wu, C.D. Sigmund**. University of Iowa. (711.13)

**204. APS DAVID BRUCE UNDERGRADUATE POSTER SESSION**

**Poster Discussion**

(Sponsored by: APS Education Committee)

SUN. 4:00 PM—SAN DIEGO CONVENTION CENTER, SAILS PAVILION

The APS David Bruce Undergraduate Poster Session is a special poster session held during Experimental Biology for physiology undergraduates. This session is held in addition to the regularly programmed scientific session in which all researchers participate.

Graduate departments and programs will also be on site to talk to students about various opportunities at their institutions.

**205. WEH NEW INVESTIGATOR AWARD LECTURE**

**Lecture**

(Sponsored by: Water and Electrolyte Homeostasis Section)

SUN. 4:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

- 4:30 WEH New Investigator Award Lecture. **M. Madhur**. Vanderbilt Univ.

**206. PHYSIOLOGY IN PERSPECTIVE: THE WALTER B. CANNON MEMORIAL AWARD LECTURE**

**Lecture**

(Supported by Sucampo AG)

APS

SUN. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

- 5:30 The roles of Ca<sup>2+</sup> and ATP in pancreatic physiology and pathophysiology. **Ole Petersen**. Cardiff University.

## MONDAY, APRIL 23

### Across Societies

#### 207. NIH F AWARDS: NAVIGATING NIH PROGRAMS TO ADVANCE YOUR CAREER

##### Workshop

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM ROOM 31A

##### Career and Professional Development

This presentation will focus on the NIH's Ruth L. Kirschstein National Research Service Awards (NRSA). The NRSA research training fellowship (F) awards are targeted to individuals with or seeking research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the F awards discussed will be the F30, NRSA Individual Predoctoral MD/PhD or Other Dual-Doctoral Degree Fellowship Award, the F31 NRSA Individual Predoctoral Fellowship, the F31 NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research Award, the F32 NRSA Individual Postdoctoral Fellowship Award, and the NRSA Individual Senior Fellowship Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for pre- and postdoctoral fellows and senior investigators.

9:00 Speaker. **M. Matthews.** NIH.

#### 208. POSTER/ORAL PRESENTATION PRACTICE & MENTORING SESSIONS

##### Workshop

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, HALL D, EB 2018 CAREER CENTER, PEER MENTOR POD

##### Career and Professional Development

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

#### 209. CAREER CORNER SESSIONS WITH DR. ADAMS

##### Workshop

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, HALL D, EB 2018 CAREER CENTER, CAREER CORNER

##### Career and Professional Development

Drop in or sign-up for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

#### 210. ONE-ON-ONE RESUME CRITIQUE/CV, CAREER COUNSELING, ESSAY PERSONAL STATEMENT ASSESSMENTS

##### Workshop

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, HALL D, EB 2018 CAREER CENTER, CAREER COUNSELING ROOM

##### Career and Professional Development

One-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

#### 211. DEVELOPING YOUR CORE MESSAGE STATEMENT/"ELEVATOR SPEECH"

##### Workshop

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, HALL D, EB 2018 CAREER CENTER, CRC-1

##### Career and Professional Development

You can talk about yourself as a professional scientist with confidence, clarity, and comfort as you advance your career. Your core message statement is a brief spoken statement (30-second mini-abstract) about you that lets people know who you are as a professional, what you do well, and what you expect to contribute. It is a well-prepared answer to the question, "Tell me a little bit about yourself." A positive core message statement helps open doors for connection, collaboration, and employment. This seminar will provide guidance in a safe place to develop and practice your statement.

9:00 Speaker. **J. Lombardo.** LifeWork Choices.

**212. GOAL SETTING, PRIORITIZING, TIME MANAGEMENT****Workshop**

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Most students have dreams and aspirations regarding academic, career and life ambitions. However, too often many fall short of realizing their dreams for lack of established goals and prioritized action steps. So they are left with questions such as these: 1) what am I going to do with the rest of my life? 2) What are my academic/career goals and objectives? and 3) How do I use my time wisely to get from where I am now to where I want to be in the future?

This seminar is designed to answer these questions in the context of goal setting, prioritizing, time, and stress management. Key topics: Decoding the Goals Setting Process, Prioritizing to Determine what is Important, Translating Goals into Time Based Action Steps, Time Management and Avoiding Procrastination, Handling Stress and Anxiety.

9:00 Speaker. **H. Adams.** H.G. Adams & Assoc., Norfolk, VA.

**213. NETWORKING AND GETTING YOUR FOOT IN THE DOOR****Workshop**

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

9:00 Speaker. **J. Sterling.** KGI, Claremont, CA.

**214. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS****Workshop**

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you.

10:00 Speaker. **E. Hayden.** Univ. of California, Santa Cruz.

**215. JOB HUNTING IN BIOTECH PART 3: COMPENSATION NEGOTIATION FOR SCIENTIST POSITIONS****Workshop**

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

So you've landed a job offer for an industry scientist position! Now, how do you know if the compensation package is competitive, and how do you ask for more? In this seminar you will learn how to:

- Separate out the typical components of an industry job offer letter, so you know what to ask for
- Determine if an offer is competitive and when to ask for more
- Ask for additional compensation in a way that represents your interests while maintaining positive relationships.

(This is part 3 of a 3-part series. Each seminar can be taken separately, but together they provide comprehensive information about the industry job search process.)

10:30 Speaker. **B. Lindstaedt.** UCSF.

**216. IDENTIFYING YOUR OPTIONS USING MYIPD + LINKEDIN****Workshop**

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

This presentation is designed to provide you with strategies and resources for beginning to think about what kinds of professional options outside of academia might be a good match for your skills and interests, and how to gain access to additional information about those career possibilities that will help clarify which options warrant further interest and investigation.

10:30 Speaker. **A. Green.** Univ. of California, Berkeley.

**217. CONSTRUCTING YOUR ELEVATOR PITCH WORKSHOP (PRESENTED BY ASBMB OUTREACH COMMITTEE)****Workshop**

MON. 12:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

This interactive workshop will guide you through the process of creating and delivering an effective statement. Presenters will discuss real-life approaches to communication that work (and don't work) and offer plenty of opportunities for practice and feedback. The skills you'll gain are not just valuable for communicating with the lay public but with other academics, government officials and potential employers as well.

12:00 Speaker. **ASBMB Outreach Committee.**

**218. JOB HUNTING IN BIOTECH PART 1: FINDING & APPLYING FOR SCIENTIST POSITIONS****Workshop**

MON. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

In this seminar, you will learn how to prepare resumes and cover letters so you will be ready to search for research jobs in the biotech/pharma industry. Then, you will learn how to find and connect with scientists working at companies. Finally, you will learn how to execute job search strategies necessary for success on the biotech/pharma job market. After this seminar you will understand how to conduct the four job hunting techniques that comprise a comprehensive job search in the biotech industry.

(This is part 1 of a 3-part series. Each seminar can be taken separately, but together they provide comprehensive information about the industry job search process.)

1:00 Speaker. **B. Lindstaedt.** UCSF.

**219. BUILDING YOUR JOB SEARCH SKILLS: NETWORKING & INFORMATION INTERVIEWS****Workshop**

MON. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

You've begun to identify some potential new career paths, but how do you build on these sparks of interest, learn more about the day-to-day content of a given field, and find individuals working in that career who can answer your questions and help you build a network in your emergent profession. This presentation will discuss how to utilize LinkedIn, professional associations, and other networking opportunities to increase your knowledge base and create opportunities for informational interviews.

1:00 Speaker. **A. Green.** Univ. of California, Berkeley.

**220. SUCCESSFUL BEHAVIORS FOR WINNING AN INTERVIEW****Workshop**

MON. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Eye contacts, arriving on time- these are given behaviors for any interview of any type and everyone knows them. The successful behaviors for winning an interview are those that categorize you as a high risk or low risk for the next recruitment step.

In this seminar, you will learn what behaviors are important to exhibit on an interview, and how employers evaluate these behaviors to determine whether or not you are a low risk and move you on to the next recruitment step, or a high risk and don't.

1:00 Speaker. **J. Blumenthal.** Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD.

**221. NIH K AWARDS: NAVIGATING NIH PROGRAMS TO ADVANCE YOUR CAREER****Workshop**

MON. 11:30 AM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

This presentation will focus on the NIH's Career Development Awards (K) including the most recent K99/00 Pathways to Independence Award (for postdoctoral scientists) and other K awards targeted to individuals with research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the K awards discussed will be the K01 Mentored Research Scientist Development Award, the K02 Independent Scientist Award, the K22 Career Transition Award, the K08 Mentored Clinical Scientist Development Award, the K23 Mentored Patient Oriented Career Development Award, the K24 Mid-Career patient Oriented Career Award, and K25 Mentored Quantitative Scientist Career Development Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for beginning investigators.

1:30 Speaker. **M. Matthews.** NIH.

**222. MAKING THE CASE FOR GRADUATE SCHOOL****Workshop**

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Advanced degree level training has emerged as a key requirement for garnering positions of leadership in academia, government, and industry and for careering in today's workplace. Beyond this, an advanced degree signal scholarship, maturity, and the capacity to do rigorous work; all attributes that can provide an edge in the workplace. This seminar explores graduate education in the context of: 1) a career enhancement strategy; 2) graduate study opportunities/options; 3) how-to negotiate the graduate school admission and financial aid process, and 4) placing graduate studies in one's overall academic/career/life plans. Key topics: Making the Case for Graduate School, The Application/Admissions Process, funding for Graduate Work, and Putting the Pieces Together for a Smart Application.

2:00 Speaker. **H. Adams.** H.G. Adams & Assoc., Norfolk, VA.

**223. JOB SEARCH IN ACADEMIA & INDUSTRY****Workshop**

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

Are you on the market for both academic and industry jobs, but aren't sure where to start? Learn strategies for successfully navigating the two-track job search. Topics: Organizing your search, timelines/logistics, researching employer organizations, presenting your qualifications and evaluating job offers.

2:30 Speaker. **D. Behrens.** Univ. of California, Berkeley.

**224. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS****Workshop**

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, HALL D,  
EB 2018 CAREER CENTER CRC-3

**Career and Professional Development**

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you.

2:30 Speaker. **E. Hayden.** Univ. of California, Santa Cruz.

**225. TEN WAYS TO GET LUCKY IN THE JOB SEARCH****Workshop**

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Although it is important to have a plan for your career progression, it is just as important to take advantage of unexpected events along the way. This seminar will suggest specific ways to foster chance occurrences that may influence your job search. We will examine ten practical suggestions to prepare you to make happenstance work positively for you.

3:30 Speakers. **P. Clifford, J. Lombardo.** Univ. of Illinois at Chicago, LifeWork Choices.

**226. JOB HUNTING IN BIOTECH PART 2: INTERVIEWING FOR SCIENTIST POSITIONS****Workshop**

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

This seminar is designed to help you improve your interview skills so that you will be better prepared to land a scientist position in industry. At the end of the seminar, you will be able to:

- Respond effectively to the most common questions asked during industry interviews,
- Answer behavior-based questions in an organized manner,
- Begin and end the interview experience with poise and professionalism.

(This is part 2 of a 3-part series. Each seminar can be taken separately, but together they provide comprehensive information about the industry job search process.)

4:00 Speaker. **B. Lindstaedt.** UCSF.

**227. MAKING THE GRADE: JOB TALK/CHALK TALK****Workshop**

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Participants will learn to plan, structure and deliver an effective job talk. This seminar will key elements of the job talk and finally, how to capture the interest of a diverse (faculty, administrators, students) audience.

4:00 Speaker. **D. Behrens.** Univ. of California, Berkeley.

**228. ATTITUDE & BEHAVIORS: HOW ARE YOU PERCEIVED?****Workshop**

MON. 4:30 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Every person carries within them thoughts, feelings, and emotions that influence the way we are perceived by others, and the way we behave. This interaction (perceptions of others and our behavior) is so very complex, and happens so quickly, that perceptions are not necessarily at a conscious level and therefore opinions about you can be formed before you even have a chance to make any corrections to your attitude or behavior. This is a serious consequence during the job search, and a consequence we want to do without. Dr. Blumenthal will teach you how to present yourself in your resume, on the interview, and subsequent follow ups, including the job offer. She will teach you what goes on behind the scenes regarding attitudes and behaviors so that you have more leverage on your side. The end result is a positive consequence increasing the likelihood of job interviews and a job offer.

4:30 Speaker. **J. Blumenthal.** Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD.

# Anatomy

## 229. STEM CELLS IN HUMAN DEVELOPMENT AND DISEASE

### Lecture

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: M. DUNN WALD

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

### Cell Biology

- 8:35 **229.1** Organ Regeneration and Anti-Aging Strategies. **J.C. Izpisua Belmonte**. Salk Institute for Biological Studies.  
 9:15 Human Pluripotent Stem Cells to Model and Treat Neurological Disorders. **L. Studer**. Memorial Sloan Kettering Cancer Center

## 230. BIOENGINEERED AND BIOLOGICAL SCAFFOLDS: WHAT'S NEW?

### Symposium

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: B.J. RONGISH

### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

- 10:30 **230.1** Functionalizing Protein-Based Materials with Biomolecules. **S. Bondos, D. Howell, S-P. Tsai, K. Bayless**. Texas A&M Health Science Center.  
 11:00 Building Tissues One Leaf at a Time. **Tanja Dominko**. Worcester Polytechnic Institute.  
 11:30 **230.2** Biological Scaffolds That Mimic Function and Structure of Basement Membranes. **R.C. Ogle**. Old Dominion University.

## 231. REALISTIC AND TESTABLE MODELS IN COMPARATIVE ANATOMY: CREATIVE USES OF 3D/4D IMAGING TECHNIQUES

### Symposium

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11A

COCHAired: M. OSBORN AND D.G.G. HOMBERGER

### Imaging

- 10:30 **231.1** Applications of Non-Destructive 3D Data Acquisition and Processing for Biomechanical Computation, Soft Tissue Visualization, and 4D Real-Life Animation. **D.G. Homberger**. Louisiana State University.  
 11:00 **231.2** Three-Dimensional Reconstruction for Study of the Functional Design of the Avian Lung. **J.N. Maina**. University of Johannesburg, South Africa.  
 11:30 **231.3** Bioacoustics, Innovation, and Ecomorphology in Marine Vertebrates. **T.W. Cranford, P. Krysl**. San Diego State University, University of California, San Diego.

## 232. DEVELOPMENTAL BIOLOGY AWARD HYBRID SYMPOSIUM

### Symposium

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: M. BARNA

### Developmental Biology/Morphology

H.W. Mossman Award Lecture in Developmental Biology featuring 2018 Young Investigator Award Recipient, Maksim Plikus

- 10:30 **232.1** Anatomical and Functional Landscapes of Hair Regeneration Across the Body. **M. Plikus, Q. Wang, J.W. Oh, Q. Nie**. University of California, Irvine and Kyungpook National University, Republic of Korea.  
 11:00 **232.2** Examining the Correlation Between Cellular and Gross Morphological Changes in the Developing Mouse Skull. **S.G. E. Jarvis, J.E. Lee, G.M. Kelly, K.E. Willmore**. Western University, Canada.  
 11:15 **232.3** Diastolic Dysfunction Is Generated in Mice with Knockout of Smoothelin-Like 1 Protein. **M. Murali, D. Belke, S.R. Turner, M. Chappellaz, W.C. Cole, J.A. MacDonald**. University of Calgary, Canada.  
 11:30 **232.4** Complete Regeneration of a Camera-Type Eye in the Research Organism *Pomacea canaliculata*. **A. Accorsi, E. Ross, M. McClain, S. McKinney, A. Sánchez Alvarado**. Stowers Institute for Medical Research.  
 11:45 **232.5** Depletion of Cranial Suture Stem Cells by Pharmacological Exposures May Precipitate Premature Suture Fusion. **E. Durham, R.N. Howie, A. LaRue, J. Cray**. Medical University of South Carolina.

## 233. ANATOMY EDUCATION PLATFORM 2—CLINICAL ANATOMICAL EDUCATION

### Symposium

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: N. LACHMAN AND C. RAMNANAN

### Education

- 10:30 Are Clerks Ready for Clerkship? Third Year Medical Students' Anatomical Science Knowledge vs. Clerkship Director Expectations. **M.E. Norris, K.A. Rogers, C.M. Martin**. Western University, Canada. (504.11)  
 10:45 **233.1** Essential Anatomy for Residency: Implications for Medical Student Education. **M. Hankin, I. Niculescu, J. Martindale, A. Aschmetat, A. Mertens, E. Soltero, P. Emmanuel**. Oregon Health & Science University, Oakland University William Beaumont Hospital and University of Virginia School of Medicine.  
 11:00 **233.2** Effect of Anatomical Radiology Team-Based Learning on Student Ability to Recognize Imaging Findings Critical to Medical Practice. **S. Williams, X.L. Pereira-Reyes, M.C. Weidenhaft, M.L. Korndorffer**. Tulane University School of Medicine

- 11:15 Evaluation of Critical Thinking Skills in the Anatomy and Development Components of the First Year Medical School Curriculum. **R.E. Corbitt, A. Hryniuk, C.A. Nichols, A.C. Edmondson.** Medical College of Georgia at Augusta University. (504.12)
- 11:30 **233.3** Enhancing Anatomy Education Through Student-Led Team Dynamics Initiatives. **C. Sanky, R. Fallar, M. Cruz, J.S. Reidenberg, J.T. Laitman.** Icahn School of Medicine at Mount Sinai and Bentley University.
- 11:45 **233.4** Interactive Cases Using the Medical Stories of a Living Anatomical Donor. **C. Elzie, L. Wellman, F. Ortiz, R.M. Clark, C.W. Goodmurphy.** EVMS and Eastern Virginia Medical School.

## 234. SPECIMEN QUALITY DRIVES REPRODUCIBILITY

### Symposium

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: D.L. ROSENE

Guest session sponsored by The Histochemical Society

### Emerging Technologies

### Genomics, Proteomics

### Imaging, Immunohistochemistry and Microscopy

### Neuroscience

- 2:00 Long-term Cryopreservation and Batch Processing for Quantitative Histochemistry. **D. Rosene.** Boston University School of Medicine.
- 2:30 Tissue Preservation, Matching Mechanism to Utility. **S. Hewitt.** National Cancer Institute.
- 3:00 The Biophysics of Freezing Tissue. **A. Hubbel.** University of Minnesota.

## 235. SEX DIFFERENCES IN STRUCTURE AND FUNCTION OF THE CARDIOVASCULAR SYSTEM

### Symposium

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: V. MILLER

### Cardiovascular

- 2:00 **235.1** Sex Differences in Sympathetic Control of Vascular Tone: Influences of Aging. **N. Charkoudian.** US Army Research Institute of Environmental Medicine.
- 2:30 **235.2** Sex-specific Conditions Affecting Vascular Tone, Cerebral Blood Flow and Cognition. **J.N. Barnes.** University of Wisconsin-Madison.
- 3:00 **235.3** Sex Differences in Remodeling of the Failing Heart. **G. Kararigas.** Charite University Hospital, Germany.

## 236. USING STEM CELLS TO UNDERSTAND AND TREAT DISEASE

### Symposium

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: B. ALLMAN

### Cell Biology

- 2:00 pm Dynamics of Skeletal Muscle Stem Cells during Tissue Repair and Maintenance. **A. Sacco.** Sanford Burnham Prebys Medical Discovery Institute
- 2:30 pm **A. Bratt-Leal.** The Scripps Research Institute
- 3:00 **236.1** Stem Cell Biology of Airway Submucosal Glands during Development and Disease. **J.F. Engelhardt.** University of Iowa.

## 237. FASCIA, WHAT IS IT GOOD FOR? ABSOLUTELY EVERYTHING: RESEARCH, EDUCATIONAL, AND CLINICAL PERSPECTIVES

### Symposium

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: K. CASSIDY AND R.L. PRATT

### Education

- 2:00 **237.1** Clinical Aspects and Cellular Mechanisms of Fascia, Their Interactions, and Importance in Medicine. **T. Findley.** Rutgers New Jersey Medical School.
- 2:45 **237.2** Educational Avenues to Promote Fascia Dialog in Medical Curricula. **R. Pratt.** Michigan State University.
- 3:10 **237.3** Myofascial Pathologies, Their Treatment, and the Importance of Patient Education. **K. Schabacker.**

## 238. DO YOU HAVE AN ANATOMICALLY-CORRECT MODEL FOR YOUR RESEARCH?

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: B. SINGH

### Cell Biology

### Developmental Biology/Morphology

### Imaging

- 4:00 **238.1** Comparative Neuroanatomy in Health and Disease: One Size Does Not Fit All. **C. Zeiss.** Yale University.
- 4:30 **238.2** Bovine Model to Study Ovarian Function and Oocyte Competence in Women During Perimenopausal Period. **J. Singh.** University of Saskatchewan, Canada.
- 5:00 **238.3** The Porcine Lung in Biomedical Research. **D. Meyerholz.** University of Iowa Carver College of Medicine.

**239. INSIDE JAWS: TOOTH PATTERNING, ADAPTATION AND REGENERATION****Symposium**

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: T. FRANZ-ODENDAAL

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

- 4:00 **239.1** Rebooting the Zahnreihen: Analysis of the Jaw-wide Patterning Cues in the Adult Gecko Dentition. **J. Richman.** University of British Columbia  
 4:30 **239.2** Shark EvoDevOmics: Linking Teeth and Taste Buds to the Evolution of Tooth Regeneration. **G. Fraser.** University of Sheffield)  
 5:00 **239.3** Evolvability of Tooth Location in Teleost Fishes. **D. Stock.** University of Colorado

**240. LET'S MAKE AN ORGAN—STEM CELLS, CRISPR, ORGANIDS****Symposium**

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: J. YOST

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

- 4:00 **240.1** Consider the Lung as a Sensory Organ. **X. Sun.** University of California, San Diego  
 4:30 **240.2** Regulation of Pancreatic Islet Cell Fates. **L. Sussel.** University of Colorado  
 5:00 **240.3** Postnatal Organogenesis by Transdifferentiation. **H. Willenbring.** University of California, San Francisco

**241. TEACHING HISTOLOGY IN AN INTEGRATED CURRICULUM: APPROACHES, STUDENT OUTCOMES AND LESSONS LEARNED****Symposium**

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: K. PINDER AND J. EASTWOOD

**Education**

- 4:00 **241.1** Medical Student Learning Experiences in Organ System Course Sessions using a Histology and Embryology Team-taught Integrated Format. **S. Attardi.** Oakland University William Beaumont School of Medicine. **J. Venuti.** Oakland University William Beaumont School of Medicine  
 4:30 **241.2** A Tale of Two Approaches: Results from Integrating Medical Histology and Pathology. **K. Pinder.** The University of British Columbia. **J. Eastwood.** Burrell College of Osteopathic Medicine  
 5:00 **241.3** Integrated Gross Anatomy and Histology (GRISTO): Benefits and Challenges for Students and Faculty Integrating Anatomical Sciences within a Traditional Curriculum Structure. **N. Swailes, D.S. Hoffmann.** The University of Iowa Roy **J.** and Lucille **A. Carver** College of Medicine and College of Dentistry.

**242. AAA MEMBERS MEETING****Business Meeting**

MON. 5:45 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

All AAA Members are encouraged to attend.

## Biochemistry and Molecular Biology

### 243. WAKE-UP! IT'S TRIVIA TIME

#### Society Events

(Sponsored by: ASBMB Membership Committee)

MON. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Workshops & Events

Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps! Prize values increase over the course of the meeting, so come back each morning for more challenges! ASBMB members and biochemistry registrants welcome. Space is limited with first come, first served.

### 244. AVANTI AWARD IN LIPIDS

#### Lecture

(Sponsored by: Avanti Polar Lipids, Inc.)

MON. 8:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Award Lectures

##### Lipids and Membranes

8:00 Awardee introduction.

8:05 **244.1** Phospholipid Regulation of Inflammatory Processes and Viral Infection. **D.R. Voelker**. National Jewish Health.

### 245. MILDRED COHN AWARD IN BIOLOGICAL CHEMISTRY

#### Lecture

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Award Lectures

8:30 Awardee introduction.

8:30 **245.1** The Origin Recognition Complex: Where It All Begins. **L. Joshua-Tor, A. Tocilj, K. On, Z. Yuan, J. Sun, H. Li, B. Stillman**. Cold Spring Harbor Laboratory, Howard Hughes Medical Institute and Brookhaven National Laboratory.

### 246. EARL AND TRESSA STADTMAN YOUNG SCHOLAR AWARD

#### Lecture

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Award Lectures

9:00 Awardee introduction.

9:00 **246.1** Visualizing Translation by Ensemble cryoEM. **A. Korostelev**. University of Massachusetts Medical School.

### 247. ADAPTING PROTEOSTASIS TO AMELIORATE NEURODEGENERATIVE DISEASES

#### Symposium

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAired: J.W. KELLY

#### Neuroscience

10:00 **247.1** Targeting Protein-Protein Interactions in Chaperone Complexes to Normalize Proteostasis. **J.E. Gestwicki**. University of California, San Francisco.

10:30 **247.2** Adapting the Chemistry and/or Biology of Proteostasis to Ameliorate Protein Aggregation Diseases. **J.W. Kelly**. Scripps Research Institute.

11:00 **247.3** Systemic Misfolding of Immunoglobulins in the Test Tube and in the Cell. **M. Ramirez-Alvarado, C.J. Dick, L.M. Blancas-Mejia, P. Misra, Y. Lin, K.R. Redhage, T.L. Jordan, A. Williams, J.S. Wall**. Mayo Clinic, University of Tennessee and Knoxville.

11:30 **247.4** Regulation of Functional Proteome by the Heat Shock Response and Proteostasis Network. **R.I. Morimoto**. Northwestern University.

### 248. COMMUNICATING SCIENTIFIC IDEAS TO NOVICE AUDIENCES

#### Symposium

(Sponsored by: ASBMB Education and Professional Development Committee)

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAired: R. BOOTH

#### Education

Have you ever been the expert in the room trying to explain your scientific ideas or findings and your audience just does not get your message or gets the wrong message? Whether in a symposium, group meeting, classroom, or interview, effectively telling your scientific story to others is vitally important to a successful career. This session brings together speakers from diverse backgrounds to discuss communicating science effectively to non-expert groups. Even experienced communicators will benefit from the cross-disciplinary interactions in this session.

10:00 Chair's introduction.

10:05 Using Molecular Visualization with the Public – Making a Picture = 1000 Words. **P. Craig**. Rochester Inst. of Tech.

10:25 Using the Three Minute Thesis for Interviews, Outreach and Networking. **N. Lee**. Univ. of Toronto.

10:45 Communicating Science in Politicized Environments. **A. Lupia**. Univ. of Michigan.

11:05 Panel discussion.

**249. GLYCOBIOLOGY AND FUNCTIONAL GLYCOMICS****Symposium**

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAired: L.C. HSIEH-WILSON

**Glycobiology, glycomics, carbohydrates**

- 10:00 **249.1** Precisely Heterogeneous—The Making of N-Glycoproteins. **M. Aebi**. ETH Zürich, Switzerland.
- 10:30 **249.2** Mapping the O-GlcNAc-Cytoprotective Network. **N. Zachara, J. Groves, C. Guo, M. Martinez, K. Fahie, C. McKen, A. Maduka, R. O’Meally, R. Cole**. John Hopkins University School of Medicine.
- 11:00 **249.3** Cracking the Glycocode: Finding the Signal in the Noise. **L.K. Mahal**. New York University.
- 11:30 **249.4** A Systems-Level Understanding of Glycosylation Signaling Networks. **L.C. Hsieh-Wilson**. California Institute of Technology.

**250. NEW INSIGHTS INTO THE LINKS BETWEEN METABOLISM AND DISEASE****Symposium**

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAired: L.C. CANTLEY

**Metabolism and Metabolic Disease****Award Lectures**

Features the Bert and Natalie Vallee Award in BioMedical Sciences (2017) lecture, presented by **R.M. Evans**.

- 10:00 Bert and Natalie Vallee Award in BioMedical Sciences (2017) awardee introduction.
- 10:05 **250.1** Corraling Pancreatic Cancer Through Epigenetic Reprogramming. **R.M. Evans, C. Antal, M. Truitt, G. Liang, M. Sherman, P. O’Dwyer, J. Drebin, M. Downes, D. Tuveson**. The Salk Institute for Biological Studies, Perelman School of Medicine, University of Pennsylvania, Memorial Sloan Kettering Cancer Center, Cold Spring Harbor Laboratory and Howard Hughes Medical Institute.
- 10:35 **250.2** Metabolism, Inflammation, and Tumor Progression. **M.C. Simon**. Perelman School of Medicine and University of Pennsylvania.
- 11:05 **250.3** The Role of Altered Metabolic States in Cancer and Other Human Diseases. **R.J. DeBerardinis**. The University of Texas Southwestern Medical Center.
- 11:35 **250.4** Obesity, Insulin Resistance and Cancer: The PI3K Connection. **L.C. Cantley**. Weill Cornell Medicine and Cornell University.

**251. REGENERATIVE MEDICINE****Symposium**

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: J. KANG

- 10:00 Neuronal growth cone molecular machinery controlling brain circuit-specific development and diversity, toward regeneration: “Subcellular RNA-proteome mapping”. **Jeffrey Macklis**. Harvard Univ.

- 10:25 Vascular tissue regeneration from 3D-bioprinted grafts implanted in Rhesus monkeys. **Y. James Kang**. Sichuan Univ. West China Hosp. and Memphis Inst. of Regenerative Med.
- 10:50 Intraoperative Bioprinting of Composite Tissues for Craniofacial Reconstruction. **Ibrahim Ozbolat**. Penn State Univ.
- 11:15 Regeneration of Synovial Joints in Zebrafish. **Gage Crump**. USC.
- 11:40 General discussion.

**252. RNA IN HUMAN DISEASE****Symposium**

(Sponsored by: ASBMB Minority Affairs Committee)

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 1AB

**RNA****Chromatin, Epigenomics**

- 10:00 **252.1** Understanding and Targeting Spliceosomal Gene Mutations in Cancer. **O.I. Abdel-Wahab**. Memorial Sloan Kettering Cancer Center.
- 10:30 **252.2** RNA and RNP Structures that Contribute to Viral Pathogenesis. **B.S. Tolbert**. Case Western Reserve University.
- 11:00 **252.3** Context-Dependent and Disease-Specific Diversity in Stress Granules Formed from Pre-Existing Protein Interactions. **G.W. Yeo, S. Markmiller, S. Soltanieh, K.L. Server, R. Mak, W. Jin, M.Y. Fang, E-C. Luo, F. Krach, D. Yang, A. Sen, A. Fulzele, J.M. Wozniak, D.J. Gonzalez, M.W. Kankel, F-B. Gao, E.J. Bennett, E. Léculyer**. University of California, San Diego, Institut de Recherches Cliniques de Montréal, Canada, National University of Singapore, Singapore, University of Massachusetts Medical School, Biogen and Université de Montréal, Canada.
- 11:30 **252.4** Dynamic Mechanisms of Xist RNA Localization in Female Lymphocytes: A New Form of X-Chromosome Inactivation Maintenance. **M.C. Anguera, C. Syrett**. University of Pennsylvania.

**253. SYSTEMS BIOLOGY AND PROTEOMICS****Symposium**

MON. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAired: I.M. CRISTEA

**Genomics, Proteomics****Cell Signaling in Disease**

- 10:00 **253.1** New Approaches for Localization of Proteins and Interaction Partners in Cells with High Spatial Resolution. **S.A. Carr, N. Udeshi, S. Myers**. Broad Institute of Massachusetts Institute of Technology and Harvard.
- 10:30 **253.2** From Petabytes to Molecular Insights: Building an Operating System for Cancer. **K. White**. University of Chicago.
- 11:00 **253.3** Virion Display (VirD) Approach to Characterizing Non-Odorant GPCRs in Humans. **H. Zhu, P. Desai, G-D. Syu**. John Hopkins University School of Medicine and Johns Hopkins University.
- 11:30 **253.4** Hybrid Experimental-Mathematical Methods for Probing Dynamic Proteome Organization During Viral Infections. **I.M. Cristea**. Princeton University.

## 254. ASBMB MEET THE SPEAKERS

## Society Events

MON. 12:30 PM—SAN DIEGO CONVENTION CENTER,  
EXHIBIT HALLS A-D

## Career and Professional Development

## Workshops &amp; Events

Visit the ASBMB Lounge, across from ASBMB Booth #1316, to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

## 255. ASBMB MEET THE SPEAKERS

## Society Events

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER,  
EXHIBIT HALLS A-D

## Career and Professional Development

## Workshops &amp; Events

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #1316) to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

## 256. CHROMATIN REGULATION OF GENE EXPRESSION

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAired: V.M. WEAKE

## Chromatin, Epigenomics

## Toxicology

2:30 Elucidating Epigenetic Readers of H3T45ph in *S. cerevisiae*. **P. Grant, C. Lee, M. Pray-Grant, S. Bekiranov.** University of Virginia School of Medicine. (524.14)

2:45 Determining the Enhancer Proteomes in Primary Cells and Native Tissue. **D. Steger, D. Cohen, J. Remsberg, S. Sidoli, B. Garcia.** University of Pennsylvania. (523.2)

3:00 **256.1** Cohesin Loss Eliminates All Loop Domains. **S.S. P. Rao, S-C. Huang, B. Glenn St. Hilaire, J.M. Engreitz, E.M. Perez, K-R. Kieffer-Kwon, A.L. Sanborn, S.E. Johnstone, G.D. Bascom, I.D. Bochkov, X. Huang, M.S. Shamim, J. Shin, D. Turner, Z. Ye, A.D. Omer, J.T. Robinson, T. Schlick, B.E. Bernstein, R. Casellas, E.S. Lander, E. Lieberman Aiden.** Stanford University, Baylor College of Medicine, Broad Institute of Massachusetts Institute of Technology and Harvard, Lymphocyte Nuclear Biology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, N and New York University.

3:15 Discovering and Exploiting Selectivity in BET Tandem Bromodomain Recognition of Epigenetic Lysine Acylation. **B.C. Smith, M.D. Olp, D.J. Sprague.** Medical College of Wisconsin. (524.15)

3:30 **256.2** Aging Photoreceptors: Light, Stress and Transcription. **V.M. Weake.** Purdue University.

## 257. EMERGING ANTIBIOTICS FROM NATURE

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: T. WENCEWICZ

## Chemical Biology

## Microbiome

2:30 Ni(II) Uptake by Yersiniabactin, a Metallophore Produced by Uropathogenic *E. coli*. **A.E. Robinson, J.E. Lowe, E-I. Koh, J.P. Henderson.** Washington University School of Medicine in St. Louis. (669.21)

2:45 Structural and Functional Large Substrate Binding in Iterative Non-Ribosomal Peptide Synthesis Independent Synthesis (NIS) Enzymes. **K.M. Hoffmann.** California Lutheran University. (526.7)

3:00 Directed Evolution of an Adenylation Domain Specificity Code. **V. Vinnik, K. Throckmorton, T.B. Cook, B.F. Pflieger, M.G. Thomas.** University of Wisconsin—Madison. (530.6)

3:15 Synthetic Biology, Biosynthesis, Enzymology, (Meta)genomics, et al. Learning from Nature. **V. Agarwal.** Georgia Institute of Technology. (796.26)

3:30 **257.1** Beta-Lactam and Beta-Lactone Antibiotics from Plant Microbiomes. **T. Wencewicz.** Washington University in St. Louis.

## 258. NEW FRONTIERS IN SUBSTRATE METABOLISM

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: L. KAZAK

## Metabolism and Metabolic Disease

2:30 Mechanism of Obesity Suppression by Adipose Tissue Creatine Energetics. **L. Kazak, G.Z. Lu, B.M. Spiegelman.** McGill University, Canada and Dana-Farber Cancer Institute. (536.2)

2:45 *Mogat1* Is a Fasting-Induced PPAR  $\alpha$  Target Gene That Plays a Role in Coordinating the Hepatic Response to Food Deprivation. **A.J. Lutkewitte, K.S. McCommis, K.T. Chambers, M.J. Graham, A.M. Hall, B.N. Finck.** Washington University School of Medicine in St. Louis and Ionis Pharmaceuticals Inc. (812.14)

3:00 Deletion of Muscle *ACSL1* Caused Myopathy and Fiber Switch. **L. Zhao, L. Bacudio, A.L. Suchanek, P.A. Young, F. Pascual, R.A. Coleman.** University of North Carolina at Chapel Hill. (536.11)

3:15 mTOR Signaling in Adipose Tissue Influences Systemic Lipid Metabolism. **L.M. Paoletta, C. Tran, K. Chellappa, S. Mukherjee, J.G. Davis, A. Wilson, E. Edouard, S. Shewale, D.J. Rader, J.A. Baur.** University of Pennsylvania. (536.8)

3:30 Monomethyl Branched Chain Fatty Acids Link Mitochondrial Amino Acid Metabolism and Adipose Tissue Lipogenesis to Fatty Acid Diversity. **M. Wallace, C. Green, L. Roberts, M. Lee, P. Cabrales, J. Ayres, D. Nomura, R. Looma, C. Metallo.** University of California, San Diego, University of California, Berkeley and Salk Institute. (536.15)

## 259. PLANT METABOLISM AND PHOTOSYNTHESIS

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: J.C. CAMERON

## Plant Biochemistry

## Metabolism and Metabolic Disease

- 2:30 **259.1** "Exploring the Regulation of Photosynthesis in Single-Cell Lineages at Sub-Cellular Resolution". **J.C. Cameron**. University of Colorado Boulder.
- 2:45 Effects of a Sethoxydim-Based Herbicide on the Photosynthetic Capacity of *Chlorella vulgaris*, a Non-Target Organism. **A.L. Smythers, A. Garmany, N. Perry, P.E. Adkins, E. Higginbotham, D.R. J. Kolling**. Marshall University. (537.8)
- 3:00 The Rising of Acylsugar Diversity: Metabolic Innovation in Tomato Trichomes Through BAHD Enzyme Promiscuity and Pathway Evolution. **P. Fan, A.M. Miller, A.D. Jones, X. Liu, R.L. Last**. Michigan State University. (537.2)
- 3:15 Investigating the Interaction Between MED5 and CDK8 in *Arabidopsis*. **X. Mao, V.M. Weake, C.C. S. Chapple**. Purdue University. (648.14)
- 3:30 Increasing Seed Iron Content by Gene Manipulation in *Arabidopsis*. **Z. Ghulamkari, T.J. Buckhout**. Humboldt Universität zu Berlin, Germany. (542.4)

## 260. PROTEIN FOLDING: THE GOOD, THE BAD AND THE DISORDERED

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAired: J.E. KIM

## Protein Folding, Aggregation

## Structural Biology/Biophysics

- 2:30 The Intrinsically Disordered PsbO Subunit of Photosystem II: Structure and Role in Photosynthetic Water Oxidation. **B.A. Barry, U. Brahmachari, C.E. Obi, J.N. He**. Georgia Institute of Technology. (795.8)
- 2:45 Non-Native Structure Present in the Unfolded Ensemble May Initiate Aggregation of ALS Variants of Superoxide Dismutase (SOD1). **N. Cohen, O. Bilsel, C.R. Matthews**. University of Massachusetts Medical School. (792.16)
- 3:00 Initially Disordered, Reflectin Assembly Tunably and Reversibly Drives Biophotonic Color. **R. Levenson, C. Bracken, C. Sharma, J. Santos, C. Arata, D.E. Morse**. University of California and Santa Barbara. (795.7)
- 3:15 NMR Structural Studies of Membrane Proteins in Bilayer Environments. **J. Radoicic, S.H. Park, S.J. Opella**. University of California and San Diego. (792.36)
- 3:30 **260.1** Folding of a Membrane Protein into Nanodiscs. **D.K. Asamoto, J.E. Kim**. University of California and San Diego.

## 261. PROTEOMICS AND LIPIDOMICS: METHODS AND APPLICATIONS FOR HUMAN DISEASE

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: A. NITA-LAZAR

## Lipids and Membranes

## Genomics, Proteomics

- 2:30 **261.1** Targeted Proteomics-Driven Computational Modeling of Macrophage Microbial Sensing Pathways. **A. Nita-Lazar, N.P. Manes, J.M. Mann, P. Kaplan, M. Meier-Schellersheim, I.D. C. Fraser, R.N. Germain**. National Institute of Allergy and Infectious Diseases and National Institutes of Health.
- 2:45 **261.2** Quantitative Phosphoproteomic Analysis of Feedback Networks in T Cell Signaling. **A. Salomon, J. Belmont, Q. Ji**. Brown University.
- 3:00 Mass Spectrometry of Single Mammalian Cells Quantifies Proteome Heterogeneity During Cell Differentiation. **E. Levy, B. Budnik, N. Slavov**. Northeastern University and Harvard University. (802.9)
- 3:15 An Aptamer-Based Approach to Assess the Human Plasma Proteome for Pre-Analytical Variability. **J.R. Daniels, Z. Cao, M. Maisha, L.K. Schnackenberg, J. Sun, L. Pence, T.C. Schmitt, B. Kamlage, R.D. Beger, L-R. Yu**. National Center for Toxicological Research, U.S. Food and Drug Administration and Metanomics Health GmbH, Germany. (802.5)
- 3:30 Advancement in Atopic Dermatitis Research Through the Use of a Novel Skin Tape Strip Mass Spectrometry Based Processing Protocol. **E. Berdyshev, E. Goleva, I. Bronova, M.A. Seibold, J. Jung, D.Y. M. Leung**. National Jewish Health. (658.4)

## 262. REDOX ENZYMES

## Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAired: K. JOHNSON-WINTERS

## Catalysis, Enzyme Mechanisms

## Chemical Biology

- 2:30 A Novel Radical SAM Mechanism Mediated by the Interferon-Inducible Protein Viperin. **A.B. Dumbrepatil, P. Malec, S. Ghosh, A. Patel, R.T. Kennedy, E. N.G. Marsh**. University of Michigan. (796.7)
- 2:45 Determining the Active Site Base and Order of Substrate Addition Within F<sub>420</sub>-Dependent Glucose-6-Phosphate Using Steady-State and Pre Steady-State Kinetics and Isotope Effects Methods. **K. Johnson-Winters, M. Oyugi, L. Davis, G. Bashiri, E.N. Baker**. The University of Texas at Arlington and University of Auckland, New Zealand. (655.30)
- 3:00 A Bacterial Flavin-Dependent Oxidoreductase That Captures Carbon Dioxide into Biomass. **J. Mattice, B. Streit, G. Prussia, J. Peters, J. DuBois**. Montana State University and Washington State University. (655.25)
- 3:15 Dissecting the Molecular Basis of a Phenylketonuria-Causing Mutation in Phenylalanine Hydroxylase. **C.A. Khan, S.P. Meisburger, N. Ando, P.F. Fitzpatrick**. The University of Texas Health Science Center and Princeton University. (528.1)

3:30 Deciphering the Effect of Salts on Bilirubin Oxidases Activity. **E. Roussarie, S. Bichon, G. Perrière, N. Mano, C. Stines-Chaumeil.** National Center for Scientific Research, France. (655.1)

## 263. ALICE AND C.C. WANG AWARD IN MOLECULAR PARASITOLOGY SYMPOSIUM

### Symposium

MON. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAired: E.A. WINZELER

### Award Lectures

2:30 Awardee introduction.  
 2:35 **263.1** Using *in Vitro* Evolution and Chemogenomics to Explore the Malaria Parasite Drug-Able Genome. **E.A. Winzeler.** University of California, San Diego School of Medicine.  
 3:00 1+1=1: targeting endosymbiosis for antimalarial drug discovery. **E. Yeh.** Stanford Univ.  
 3:25 Out of the mouths of babes: breath volatiles in pediatric malaria. **A. Odom John.** Washington Univ. St. Louis.  
 3:50 Molecular and structural mechanisms of malaria parasite invasion. **W.-H. Tham.** Walter and Eliza Hall Inst., Australia.  
 4:15 General discussion.

## 264. ENVIRONMENTAL HEALTH, BIOMARKERS AND PRECISION MEDICINE

### Symposium

MON. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 14A

COCHAired: B. SLIKKER AND S. CORMIER

3:00 Precision Prevention. **Kenneth Ramos.** Univ. of Arizona.  
 3:25 Minimally-invasive Biomarkers of Neurotoxicity: Application to Drug Development. **Ruth Roberts.** Birmingham Univ., UK.  
 3:50 Biomarkers and their Impact on Precision Medicine. **Jennifer Wilson.** Stanford Univ.  
 4:15 General discussion.

## 265. BMB EDUCATION: ACTIVE LEARNING

### Symposium

(Sponsored by: ASBMB Education and Professional Development Committee)

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAired: M. PAYNE

### Education

#### Career and Professional Development

4:00 Using an Innovative Approach to Teach Students How to Communicate About Scientific Topics to Non-Scientists. **M.A. Rowland-Goldsmith, M. Bisoffi.** Chapman University. (663.17)  
 4:15 Scaffolding Soft-Skill Development Into a Two-Semester Undergraduate Laboratory Course. **D.P. Grilley, T.M. Weaver.** University of Wisconsin—La Crosse. (663.19)

4:30 Increasing Active Learning in the Biochemistry Classroom: Using Group Quizzes to Stimulate Discussion. **L.J. Moore.** Monmouth College. (663.9)  
 4:45 When Active Learning Fails: How Faculty Beliefs Inform Their Teaching and Influence Student Outcomes. **S.M. Lo.** University of California and San Diego. (663.1)  
 5:00 A Competency-Based Approach to Developing Biomolecular Visual Literacy. **D.R. Dries, D.M. Dean, M.A. Franzen, H.V. Jakubowski, W.R. P. Novak, K. Procko, A.I. Roca, C.R. Terrell.** Juniata College, University of Saint Joseph, Milwaukee School of Engineering, College of St. Benedict/St. John's University, Wabash College, MinorityPostdoc.org and University of Minnesota Rochester. (535.25)

## 266. DNA REPLICATION INITIATION, PROGRESSION AND TERMINATION

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: D. SMITH

### DNA Replication and Repair

4:00 A Novel Role of the Human Cst Complex in Regulating the DNA Damage Response. **J.A. Stewart, S.M. Ackerson.** University of South Carolina. (522.9)  
 4:15 The Highly Conserved Proteins Nucleolin and Sub1 Play Critical Roles in Regulating G4 DNA-Induced Genome Instability. **N. Kim.** The University of Texas Health Science Center at Houston. (522.2)  
 4:30 **646.1** Multisubunit Multiactive Site DNA Polymerase Complexes with Coordinated Activities. M.A. Trakselis, M. Cranford, A.M. Chu. Baylor University.  
 4:45 Cdt1 Variants Offer Novel Insights into Cdt1-Mcm Interactions and an Unexpected Mechanism for Cyclin A to Block DNA Re-Replication. **P.N. Pozo, Y. Cole, J. Matson, Y. Zhuo, B. Temple, J.G. Cook.** University of North Carolina at Chapel Hill. (522.13)  
 5:00 Molecular Insights into Replication-Associated Genome Instabilities Caused by CST Deficiency. **W. Chai.** Washington State University. (522.7)

## 267. GLYCOIMMUNITY

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: C.L. LEIMKUHLE-GRIMES

### Glycobiology, glycomics, carbohydrates

4:00 Molecular and Structural Recognition of *Listeria* Cell-Wall Glycopolymers by Bacteriophage-Encoded SH3b Domains. **Y. Shen, I. Kalograiaki, A. Prunotto, M. Dunne, E. Sumrall, F.J. Cañada, M. Loessner.** ETH Zürich, Switzerland, Centro de Investigaciones Biológicas, Spain and Faculdade de Medicina Universidade de Lisboa, Switzerland. (544.10)

- 4:15 Rapid Evolution of Bacterial Exotoxin B Subunits Independent of a Subunits: Sialic Acid Binding Preferences Correlate with Host Range and Intrinsic Toxicity. **N. Khan, A. Verhagen, Z. Khedri, S. Diaz, N. Varki, A. Paton, T. Beddoe, J. Paton, A. Varki.** University of California, San Diego, University of Adelaide, Australia and La Trobe University, Australia. (673.3)
- 4:30 Elevated O-GlcNAc Exacerbates Pro-Inflammatory Cytokine Secretion from CD4 T Cells. **M. Machacek, J. Li, T. Li, T. Lydic, C. Slawson, P. Fields.** University of Kansas Medical Center and Michigan State University. (673.9)
- 4:45 Role of the Kdo Glycosyltransferase KPSS in the Biosynthesis of the Polysialyltransferase Acceptor for *Escherichia coli* K1. **N. Lanz, V. Thon, W. Vann.** U.S. Food and Drug Administration. (544.1)
- 5:00 Use of Bioorthogonal *N*-acetylcysteamine (SNAC) Analogues and Peptidoglycan *O*-acetyltransferase B (PatB) to Label Peptidoglycan. **K.M. Lazor, Y. Wang, K.E. DeMeester, H. Liang, T.K. Heiss, C.L. Grimes.** University of Delaware. (673.30)

## 268. LIPID AND PROTEIN ORGANIZATION IN MEMBRANES

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: S.L. VEATCH

### Lipids and Membranes

- 4:00 Brewster Angle Microscopy and Langmuir Monolayer Films: Construction of an Instrument and Basic Software Development for Visualization of Lipid Domains and Lipid Raft Formation. **B.C. Allen, B.E. Sturgeon, A.G. Sostarecz.** Monmouth College. (541.3)
- 4:15 Mechanism of Membrane Biogenesis. **A.R. Naik, E.R. Kuhn, K.T. Lewis, K.M. Kokotovich, K. Maddipati, X. Chen, H. Horber, D.J. Taatjes, J.J. Potoff, B.P. Jena.** Wayne State University, University of Bristol, United Kingdom and University of Vermont. (671.11)
- 4:30 Interorganellar Phosphatidylserine Transfer by Sec14 Family Protein Sfh1 in *Saccharomyces cerevisiae*. **A. Mizuike, S. Kobayashi, H. Horiuchi, A. Ohta, R. Fukuda.** The University of Tokyo, Japan and Chubu University, Japan. (814.4)
- 4:45 Regulating a G Protein-Coupled Receptor by Topological Inversion Through Regulated Alternative Translocation. **B. Denard.** The University of Texas Southwestern Medical Center. (815.3)
- 5:00 **268.1** Probing Membrane-Mediated Forces Between Proteins in Cells Using Super-Resolution Fluorescence Localization Imaging. **S.L. Veatch, S.A. Shelby.** University of Michigan

## 269. MOLECULAR TOOLS TO STUDY CELL SIGNALING

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAired: M. TANTAMA

### Chemical Biology

### Cell Signaling, Signal Transduction

- 4:00 Revealing Subcellular Redox Dynamics with Multiplex Imaging of Compartment-Specific Redox Probes. **M. Tantama, J. Norley, S. Radhakrishnan, M. Rajendran.** Purdue University. (533.97)
- 4:15 Spatial Compartmentalization of Akt/mTOR Signaling: What Happens in the Nucleus. **X. Zhou, Y. Zhong, J. Zhang, J.Y.-J. Shyy, J. Zhang.** University of California and San Diego. (533.55)
- 4:30 Temporal Control of Growth Factor-Mediated Signaling Pathways During Cell Differentiation and *Xenopus* Embryonic Development. **P. Mondal, V.V. Krishnamurthy, J. Khamo, S. Sharum, K. Zhang.** University of Illinois at Urbana—Champaign. (533.18)
- 4:45 Allosteric Regulation of Protein Kinases Using Optogenetics. **M. Shaaya, V. Huyot, A. Zhurikhina, D. Tsygankov, V. Natarajan, A. Karginov.** University of Illinois at Chicago and Georgia Institute of Technology. (533.101)
- 5:00 Planar Enteroids Reveal an Autonomous Wnt and BMP Circuit Controlling Intestinal Epithelial Growth and Organization. **C.A. Thorne, I.W. Chen, L.E. Sanman, M.H. Cobb, L.F. Wu, S.J. Altschuler.** University of Arizona, University of California, San Francisco and The University of Texas Southwestern Medical Center. (659.14)

## 270. OBESITY, METABOLISM AND IMMUNE CELLS IN CANCER

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: L. MAKOWSKI

### Metabolism and Metabolic Disease

- 4:00 CD<sup>+</sup> T Cells Regulate Liver Injury in Obesity-Related Nonalcoholic Fatty Liver Disease. **A. Kennedy, C. Pacheco, M.K. Washington, A. Hasty.** Vanderbilt University, Seattle Children's Hospital and Vanderbilt University Medical Center. (670.11)
- 4:15 The Role of Effective Energy Restriction on Metastatic Tumor Growth. **T. Roy Sarkar, N. Sphyris, E. Schmitt, G. Wyatt, S. Wall, W. Porter.** Texas A&M University and Independent Researcher, United Kingdom. (811.2)
- 4:30 Time-Restricted Feeding Attenuates Breast Cancer Growth in a Mouse Model of Postmenopausal Obesity. **M. Das, E. Gross, D. Kumar, C. Saucedo, H-T. Park, D. Sears, L. Ellies, N. Webster.** University of California and San Diego. (811.19)
- 4:45 Biosynthesis of Acyl-Coas Sustains Prostate Cancer Progression. **H. Cai, Y. Ma.** University of Georgia. (811.1)

5:00 **270.1** Myeloid-Specific GLUT1 Ablation Attenuates Mammary Gland Inflammation and Claudin-Low Breast Cancer Progression. **L. Makowski, A.M. Fuller, A.J. Cozzo, A.J. Freermerman, J.A. Ezzell, J.A. Galanko, M.A. Troester, S.D. Hursting.** University of North Carolina and University of Tennessee Health Science Center.

## 271. STRANGE MICROBIAL TRANSFORMATIONS

### Symposium

MON. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAired: M.R. SEYEDSAYAMDOST

### Chemical Biology

### Translational and Clinical Pharmacology

4:00 Biosynthesis of Nonproteinogenic Amino Acids Oxyvinylglycines. **B. Li, J.B. Patteson, Z.D. Dunn.** University of North Carolina at Chapel Hill. (796.4)

4:15 Evidence for Control of Metabolite Flux Through a Bacterial Heme Biosynthetic Pathway. **A.I. Celis, J. Choby, E. Skaar, J. DuBois.** Montana State University and Vanderbilt University Medical Center. (527.14)

4:30 **271.1** New RiPP Family Incorporates Alpha-N-Methylations into Ribosomally Encoded Peptide Natural Products. **M. Freeman.** University of Minnesota.

4:45 Biosynthesis of Non-Ribosomal Peptide Beta-Lactones by Plant-Associated *Pseudomonas fluorescens*. **J. Schaffer, T. Wencewicz.** Washington University in St. Louis. (656.25)

5:00 **271.2** Eliciting Cryptic Secondary Metabolites Using Antibiotics. **M.R. Seyedsayamdost.** Princeton University.

## 272. MOLECULAR VISUALIZATION

### Workshop

(Sponsored by: ASBMB Education and Professional Development Committee)

MON. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAired: M. PAYNE

### Career and Professional Development

### Workshops & Events

This workshop will present to scientists of all levels the practical knowledge for how to communicate molecular structure/function using low-cost, but powerful methods. Techniques for using molecular visualization software to effectively convey structural features will be demonstrated. Included will be a sample of virtual reality technology that has been shown to enhance understanding of molecular structures.

## 273. OPTOGENETICS AND MOLECULAR SENSORS: TOOLS AND APPLICATIONS

### Workshop

MON. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

COCHAired: K. HAHN AND M. LIN

### Workshops & Events

## 274. SUPPORTED LIPID MEMBRANES AND NANODISCS

### Workshop

MON. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

COCHAired: S. SLIGAR AND L.K. TAMM

### Lipids and Membranes

### Workshops & Events

This workshop will introduce attendants to the preparation and use of supported membranes and nanodiscs in research of membrane proteins, lipids, and interactions between them. Two leaders of the field will give broad overviews and practical advice on the use of these relatively new and surging fields of membrane research. Ample time will be allowed for discussion of these techniques with attendants, who will be encouraged to also share their experiences with these systems.

## 275. TRANSFORMING SCIENCE RESEARCH INTO SCIENCE OUTREACH

### Workshop

(Sponsored by: ASBMB Public Outreach Committee)

MON. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6B

CHAired: A. BARRAL

### Public Engagement / Science Policy

### Career and Professional Development

### Workshops & Events

Members of the Public Outreach Committee and other invited speakers will showcase examples of how to turn scientific research projects into outreach activities aimed at diverse audiences. These will include demos and curricular models appropriate for K–12 students; translating detailed research work into policy-relevant summaries; and additional audience-specific outreach. Presenters will discuss the importance of outreach and its impact on various societal issues.

## Pathology

### 276. ASIP TOWN HALL MEETING AND BREAKFAST

#### Society Events

MON. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: A. NUSRAT

COCHAired: D. REMICK AND W. COLEMAN

#### Workshops & Events

### 277. HCS SYMPOSIUM: IMAGING BIOMETALS IN DISEASE

#### Symposium

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: M. BARROSO

#### Environmental and Toxicologic Pathology

(Sponsored by the ASIP Immunohistochemistry & Microscopy Scientific Interest Group and the Histochemical Society)

- 8:30 Three-dimensional Primary Enteroids as an Experimental System to Study Copper Homeostasis in Intestine. **S. Lutsenko**. Johns Hopkins Univ.
- 9:10 Moving Metals. **M. Wessling-Resnick**. Harvard T.H. Chan School of Public Health.
- 9:50 Heme Trafficking from the Ground-Up. **I. Hamza**. Univ. of Maryland.

### 278. JOURNAL OF HISTOCHEMISTRY & CYTOCHEMISTRY LECTURE

#### Lecture

(Sponsored by: the ASIP Immunohistochemistry & Microscopy Scientific Interest Group and the Histochemical Society)

MON. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: S. HEWITT

#### Imaging, Immunohistochemistry and Microscopy

#### Cell Signaling in Disease

- 10:30 Targeting FcRn to Modulate IgG Dynamics. **E. Ward**. Texas A&M Health Science Ctr.

### 279. CELL INJURY WORKSHOP: TUMOR-ASSOCIATED PARALLELS WITH FIBROSIS

#### Workshop

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: A. WELLS

#### Cell and Tissue Injury

#### Neoplasia

#### Cancer and Therapy

- 8:30 Tumors: The Wounds that Won't Stop Healing. **A. Wells**. Univ. of Pittsburgh.
- 9:15 Targeting CD109 in Fibrosis and Cancer Metastasis. **A. Philip**. Montreal General Hospital.
- 10:30 An Evolutionarily Conserved Pathway for Epithelial Repair. **B. Andersen**. UCI.

### 280. MOLECULAR MECHANISMS OF LEUKOCYTE TRAFFICKING

#### Symposium

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: P. ALCAIDE

COCHAired: D. SULLIVAN

#### Immunopathology

#### Inflammation/Immunity

#### Vascular Biology

- 8:30 **280.1** Expression of *SIRP $\alpha$*  Tailless Mutant in Mice Impairs Naïve CD4<sup>+</sup> T Cell Adhesion to Immobilized ICAM-1 and Tcr Induced Proliferation. **F.E. Velázquez Planas, A.E. Autio, G. Newton, C. Parkos, F.W. Luscinskas**. Brigham and Women's Hospital and University of Michigan.
- 8:45 **280.2** Endothelial Cell IQGAP1 Is Required to Support Efficient Leukocyte Transmigration Both in Vitro and in Vivo. **D.P. Sullivan, P.J. Dalal, W.A. Muller**. Northwestern University.
- 9:00 **280.3** CXCR3 Regulates CD4<sup>+</sup> T Cell Cardiotropism and Maladaptive Cardiac Remodeling Through Mechanisms Involving ICAM1-Mediated Adhesion. **N. Ngwenyama, A. Salvador, T. Nevers, F. Velázquez, M. Aronovitz, P. Alcaide**. Tufts University and Tufts Medical Center.

- 9:15 **280.4** Plasminogen and the Plasminogen Receptor, Plg-R<sub>KT</sub>, Regulate Efferocytosis and Macrophage Reprogramming. **J.P. Vago, M.A. Sugimoto, N. Baik, R.J. Parmer, L.A. Miles, L.P. Sousa.** Scripps Research Institute, Universidade Federal de Minas Gerais, Brazil and University of California.
- 9:30 **280.5** Obesity-Associated Extracellular Matrix Remodeling Promotes a Tumor-Associated Macrophage Phenotype in Tumor-Free Breast Adipose Tissue. **N.L. Springer, N. Iyengar, R. Bareja, X.K. Zhou, O. Elemento, A.J. Dannenberg, C. Fischbach.** Kansas State University College of Veterinary Medicine, Memorial Sloan Kettering Cancer Center, Weill Cornell Medicine, Cornell University and Cornell University.
- 9:45 **280.6** Biotin Deficiency Induces Th1 and Th17 Mediated Inflammatory Response in CD4+T Lymphocytes via Activation of mTOR Signaling Pathway. **A. Elahi, S. Sabui, A. Agrawal, H.M. Said.** University of California.
- 10:00 **280.7** Exploring the Role of Calmodulin and Calcium Signaling in Leukocyte Transmigration. **P.J. Dalal, D.P. Sullivan, W.A. Muller.** Northwestern University Feinberg School of Medicine.
- 10:15 **280.8** Loss of Local Innervation Induces Lymph Node Expansion. **C-S. Chen, L. Ince, C. Scheiermann.** Walter and Eliza Hall Institute of Medical Research, Germany.
- 10:30 **280.9** CD99L2 as a Major Regulator in Human Transendothelial Migration. **N.S. Rutledge, W.A. Muller.** Northwestern University.
- 10:45 **280.10** IL-36 $\gamma$  Promotes Alveolar Macrophage Survival During Influenza Infection, Limiting Morbidity and Mortality. **A.N. Wein, P. Dunbar, S.R. McMaster, T.L. Denning, J.E. Kohlmeier.** Emory University and Georgia State University.
- 11:00 **280.11** Vinculin in Neutrophil Adhesion, Motility and Trafficking. **Z. Wilson, M. Harman, L. Hazlett, J. Odzer, H. Witt, C. Franck, J. Reichner, C. Lefort.** Brown University, Rhode Island Hospital and Brown University Alpert Medical School.
- 9:00 **281.3** Clinical Relevance of VM-M3 in Modeling Cancer Cachexia. **A.P. Koutnik, A.M. Poff, J. Deblasi, N.M. Ward, D.P. D'Agostino.** University of South Florida and Moffitt Cancer Center.
- 9:15 **281.4** STAT3 Signaling Mediates FAK Inhibitor Response and Resistance in Pancreatic Cancer. **H. Jiang, B.L. Knolhoff, V. Krisnawan, D. DeNardo.** Washington University in St. Louis.
- 9:30 **281.5** Surface Glycocalyx and Glypican-1 Mediate Tumor Cell Metastasis. **H. Qazi, H. Moran, L.M. Cancel, M. Mayer, S. Roberge, P. Huang, L.L. Munn, J.M. Tarbell.** City College of New York and Massachusetts General Hospital.
- 9:45 **281.6** Structure-Based Drug Design to Overcome Temozolomide Resistance in Glioblastoma (GBM) Through a Dual Inhibition of mGmT and Base Excision Repair. **H.R. Madala, S.R. Punganuru, V. Arutla, K. Srivenugopal.** Texas Tech University Health Sciences Center.
- 10:00 **281.7** Whole Transcriptomic Evaluation of SK-MEL-3 Melanoma Cells in Response to Histone Deacetylase Inhibitor Trichostatin **A. E.A. Mazzio, K.F. Soliman.** Florida A&M University.
- 10:15 **281.8** Non-Enzymatic Functions of Aldolase A Induce OCT4 Activation to Promote Lung Cancer Stemness. **Y-C. Chang, M. Hsiao.** Academia Sinica, Taiwan.
- 10:30 **281.9** TIMP-2 Inhibits Tumor Growth in Murine Model of Lung Cancer Through EGFR Signaling. **S. Kumar, S.M. Jensen, A. Chowdhury, D. Peeney, B. Wei, J. Shih, J.J. Caterina, W.G. Stetler-Stevenson.** National Cancer Institute, National Institutes of Health and Bethel University.
- 11:00 **281.10** Reduced RON Expression, DM1 Resistance and MRP1 Upregulation Contributes to Resistance in Colon Cancer Cells Against Anti-Ron Antibody-Drug Conjugate Zt/g4-DM1. **S.R. Suthé, H-P. Yao, M-h. Wang.** Texas Tech University Health Sciences Center and Zhejiang University School of Medicine, People's Republic of China.
- 11:15 **281.11** Suppression of Chemotherapy-Induced Cytokine/Eicosanoid Storm and Ovarian Tumor Growth by a Dual COX-2/sEH Inhibitor. **A. Gartung, J. Yang, D. Fernandes, J. Chang, S.H. Hwang, S. Huang, M. Kieran, B. Hammock, D. Panigrahy.** Beth Israel Deaconess Medical Center, University of California, Davis, Institute for Systems Biology and Dana-Farber Cancer Institute.

## 281. HITTING THE BULLSEYE: TARGETS AND THERAPIES IN CARCINOGENESIS

In Conjunction with the Molecular and Cellular Basis of Cancer Program

### Symposium

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: S. KUMAR

COCHAired: K. SOLIMAN

### Neoplasia

### Cancer and Therapy

- 8:30 **281.1** Memantine (a Dual  $\alpha$ 7-nAChR/NMDAR Antagonist) Displays Anti-Angiogenic Activity in Human Squamous Cell Lung Cancer. **N.A. Nolan, Z. Robateau, K.C. Brown, Y.C. Chen, R.D. Egleton, M.R. Tirona, P. Dasgupta.** Joan C. Edwards School of Medicine, Marshall University, Alderson Broaddus University, Edwards Comprehensive Cancer Center and Marshall University.
- 8:45 **281.2** PAF Expression in Skin Tumors of Smokers and Never Smokers: A Potential Role in Skin Cancer Development. **J. McHowat, J.C. Lozano, P. Missall.** Saint Louis University.

## 282. MEET AND GREET THE ASIP AJP EDITOR-IN-CHIEF, MARTHA FURIE, PHD

### Society Events

MON. 9:00 AM—SAN DIEGO CONVENTION CENTER, ASIP LOUNGE

### Workshops & Events

## 283. MEET AND GREET THE ASIP EXECUTIVE OFFICER, WILLIAM COLEMAN, PHD

### Society Events

MON. 11:30 AM—SAN DIEGO CONVENTION CENTER, ASIP LOUNGE

### Workshops & Events

**284. THE BRIDGE BETWEEN LIVER INJURY AND REGENERATION****Symposium**

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: U. APTE

**Liver Pathobiology****Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)****Cell and Tissue Injury**

- 2:00 Liver Injury and Regeneration: Two Sides of the Same Coin. **U. Apte**. Univ. of Kansas Medical Ctr.
- 2:30 Role of Coagulation System in Liver Injury and Regeneration. **J. Luyendyk**. Michigan State Univ.
- 3:00 Mechanisms of Liver Regeneration. **G. Michalopoulos**. Univ. of Pittsburgh.
- 3:30 Mechanisms of Injury and Regeneration in Fibrotic Livers. **T. Kisseleva**. UCSD.
- 4:00 The Role of the HDC/Histamine/HR Axis during Biliary Regeneration & Liver Repair. **H. Francis**. Texas A&M Health Science Ctr.
- 4:30 Injury-Regeneration Dynamics in NASH. **A. Feldstein**. UCSD.

**285. CONTRIBUTIONS OF INFLAMMATION AND GLIOSIS TO NEUROLOGICAL DYSFUNCTION****Symposium**

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: C. KOLARCIK

COCHAired: J. OTERO

**Neuroscience****Inflammation/Immunity**

- 2:00 Placental Pathology and Brain Inflammation. **M. Parast**. UCSD.
- 2:45 Astrocyte Regulation of Autonomic Function. **J. Otero**. The Ohio State University.
- 3:30 Blood Brain Barrier and Inflammation/Gliosis. **R. Daneman**. UCSD.
- 4:15 Glial Biology. **N. Allen**. Salk.

**286. BIOLOGY AND PATHOBIOLOGY OF EPITHELIAL BARRIERS****Symposium**

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: A. IVANOV

COCHAired: S. COLGAN

**Epithelial and Mucosal Pathobiology****Immunopathology****Microbiome****Neoplasia**

- 2:00 **286.1** Hypoxanthine as a Checkpoint Metabolite in Epithelial Energy Modulation and Barrier Function. **J.S. Lee, R. Wang, E. Alexeev, J. Lanis, S. Colgan**. University of Colorado Anschutz Medical Campus.
- 2:15 **286.2** Chlorinated Lipids Mediate Small Airway Epithelial Dysfunction. **J. McHowat, C. Albert, C. Hartman, D. Pike, D. Ford**. Saint Louis University.
- 2:30 **286.3** DSG2 Regulates Intestinal Epithelial Cell Adhesion and Barrier Function via EGFR. **H. Ungewiß, N. Schlegel, J. Waschke**. Ludwig-Maximilian University of Munich, Institute of Anatomy and Cell Biology, Germany and Julius-Maximilians-University, Germany.
- 2:45 **286.4** Inhibition of Protein Translation Initiation and Disruption of the Intestinal Epithelial Barrier in Mucosal Inflammation. **N.G. Naydenov, F. Al-Sharief, A.I. Ivanov**. Cleveland Clinic Foundation and Virginia Commonwealth University.
- 3:00 **286.5** Intestinal Epithelial Barrier Maturation by Enteric Glial Cells Is Glial Cell Line-Derived Neurotrophic Factor (GDNF)-Dependent. **F. Kannapin, M. Meir, N. Burkard, S. Flemming, C-T. Germer, M. Diefenbacher, J. Waschke, N. Schlegel**. University of Wuerzburg, Germany and University of Munich, Germany.
- 3:15 **286.6** Role of Differential Phosphorylation of Jam-A in Regulating Epithelial Barrier Function. **S. Fan, C. Weight, R. Hilgarth, A. Nusrat, C. Parkos**. Department of Pathology, University of Michigan, Division of Infection and Immunity and University College London, United Kingdom.
- 3:30 **286.7** Desmoglein Binding Properties Are Regulated by Plakophilins. **F. Vielmuth, M. Fuchs, M. Foresti, R. Keil, M. Hatzfeld, V. Spindler, J. Waschke**. Walter and Eliza Hall Institute of Medical Research, Germany and Martin Luther University Halle-Wittenberg, Germany.
- 3:45 **286.8** Microbiota-Derived Indole Metabolites Provide a Novel Pathway for Regulation of Intestinal Homeostasis. **E.E. Alexeev, D.J. Kao, K.B. Mills, T.R. Lemke, J.M. Lanis, J.S. Lee, A.S. Dowdell, S.P. Colgan**. University of Colorado Anschutz Medical Campus.

- 4:00 **286.9** Relevance of Keratin Alterations and Desmoglein 3 Internalization in the Autoimmune Skin Disease *Pemphigus vulgaris*. **E. Schlögl, M.Y. Radeva, F. Vielmuth, C. Schinner, J. Waschke, V. Spindler**. Walter and Eliza Hall Institute of Medical Research, Germany and University of Basel, Switzerland.
- 4:15 **286.10** Desmosomal Cadherins Desmoglein-2 or Desmocollin-2 Regulate Intestinal Epithelial Barrier Function and Mucosal Repair. **D. Kusters, S. Flemming, A-C. Luissint, R. Hilgarth, C. Parkos, A. Nusrat**. University of Michigan.
- 4:30 **286.11** Protease Activated Receptor-2 Mediates *Giardia*-Induced Disruptions of the Intestinal Mucus Barrier. **E.R. Fekete, C. Amat, T. Allain, M. Hollenberg, K. Chadee, A. Buret**. University of Calgary, Canada.
- 4:45 **286.12** The Role of the Creatine Kinase Energy System in Intestinal Inflammation. **J.M. Lanis, S.P. Colgan**. University of Colorado Anschutz Medical Campus.
- 2:40 **287.3** Gut Microbiota Depletion Preserves Heart Function, Suppresses Cardiac Fibrosis and Hypertrophy in a Non-Ischemic Heart Failure Mouse Model. **F.J. Carrillo-Salinas, N. Ngwenyama, M. Aronovitz, P. Alcaide**. Tufts University and Tufts Medical Center.
- 3:00 **287.4** Inhibition of Fpr2 Impaired Leukocyte Get-In Signal and Triggers Non-Resolving Inflammation in Heart Failure. **V. Kain, G.M. Wright, G.V. Halade**. UAB.
- 3:20 **287.5** The Muscle-Specific Ubiquitin Ligase MuRF1 Regulates Autophagy via FoxO1/3 Ubiquitination to Inhibit NF- $\kappa$ B Signaling and Protect Against Cardiac Inflammation *in Vivo*. **T.L. Parry, J.C. Schisler, J.M. Mwiza, J.K. Durand, A.S. Baldwin, M.S. Willis**. University of North Carolina.
- 3:40 **287.6** Deficiency of miR-1954 Promotes Cardiac Remodeling. **S. Gupta, V. Chisson**. Texas A&M University.
- 4:00 **287.7** Policing Cell-Cell Connections: A Novel Role for the Cop9 Signalosome in Mechanisms Underlying Arrhythmogenic Heart Disease and Sudden Death. **F. Sheikh, Y. Liang, R. Lyon, J. Pellman, V. Mezzano, Y. Gu, N. Dalton, M-H. Lee, T. Iwakuma, V. Nigam, K. Peterson**. University of California, San Diego, The University of Texas MD Anderson Cancer Center and University of Kansas Medical Center.
- 4:20 **287.8** Regulation of Cardiomyocyte Cohesion and Gap Junctions via Desmosomal Adhesion. **C. Schinner, B.M. Erber, J. Waschke**. Walter and Eliza Hall Institute of Medical Research, Germany.

## 287. MECHANISMS OF INJURY, INFLAMMATION, AND REPAIR IN THE FAILING HEART

### Symposium

MON. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: J. HOMEISTER

COCHAired: T. PARRY

### Cardiac Pathobiology

### Cell and Tissue Injury

### Inflammation/Immunity

- 2:00 **287.1** Pak2 Promotes ER-Dependent Cardioprotection. **P. Binder, S. Wang, M. Zi, L. Collins, W. Liu, X. Wang**. University of Manchester, United Kingdom.
- 2:20 **287.2** Muscle-Specific Regulation of Right Ventricular Transcriptional Responses to Chronic Hypoxia Induced Heart Failure by the Muscle Ring Finger-1 (MuRF1) Ubiquitin Ligase *in Vivo*. **M.S. Willis, R.H. Oakley, T.L. Parry, J.A. Cidlowski, M.J. Campen**. University of North Carolina, National Institute of Environmental Health Sciences, National Institutes of Health and University of New Mexico.

## 288. ASIP BUSINESS MEETING, AWARDS PRESENTATION, AND MARK E. SOBEL RECEPTION

### Society Events

MON. 5:15 PM—SAN DIEGO CONVENTION CENTER, ROOM 2 & ASIP OFFICE CORRIDOR

### Workshops & Events

## Pharmacology

### 289. OTTO KRAYER AWARD IN PHARMACOLOGY LECTURE

#### Lecture

8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

#### Award Lectures

The Otto Krayer Award in Pharmacology commemorates the enduring legacy of Otto Krayer's personal qualities: his ethical behavior, his commitment to teaching, his high standards of scientific scholarship, publication and editorship, his promotion of interdisciplinary research to reveal the actions of drugs or other chemicals, and his guidance and support of younger scientists. The purpose of the award is to recognize an individual whose character and career contributions to pharmacology are in accord with those exemplified by Otto Krayer.

8:30 Introduction.

8:35 Active Site Structures and Catalytic Mechanisms of Drug Metabolizing Cytochrome P450s. **P. Hollenberg.** Univ. of Michigan.

### 290. SURMOUNTING THE INSURMOUNTABLE: OBSTACLES IN DRUG DISCOVERY AND DEVELOPMENT—REAL WORLD CASE STUDIES

#### Symposium

(Sponsored by: ASPET Council BIG IDEAS Initiative)

9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAired: K. HE

COCHAired: P.F. HOLLENBERG

#### Drug Discovery and Development

#### Education

#### Metabolism and Metabolic Disease

9:30 Introduction. **K. He.** Biotranex.

9:35 Challenges and Solutions in the Approval of Austedo, the First Deuterium-Substituted Small Molecule. **M. Bradbury.** Prana Biotech.

10:10 Discovery and Development Challenges of Dasatinib for the Treatment of Chronic Myelogenous Leukemia and Beyond. **F. Lee.** Angex Pharmaceutical Inc.

10:45 Modeling and Simulation that Resulted in the Progression of Evolocumab. **S. Doshi.** Amgen.

11:20 Fasiglifam (TAK-875) Alters Bile Acid Homeostasis in Rats and Dogs: A Potential Cause of Drug Induced Liver Injury. **F. Wolenski.** Takeda Pharmaceuticals International Co.

11:55 Conclusion. **P. Hollenberg.** Univ. of Michigan.

### 291. G PROTEINS AND G PROTEIN COUPLED RECEPTORS IN CANCER

#### Symposium

(Sponsored by: ASPET Division for Molecular Pharmacology (MP))

9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAired: J.S. GUTKIND

COCHAired: P.A. INSEL

#### Molecular Pharmacology

#### Cancer and Therapy

#### Inflammation/Immunity

9:30 Viral Hijacking of GPCR Networks in Cancer. **M. Smit.** Vrije Universiteit Amsterdam.

10:00 G Protein Regulation of Glioblastoma Stem Cells. **J. Heller Brown.** Univ. of California, San Diego.

10:30 The Human Onco-GPCRome: Opportunities for Cancer Prevention and Treatment. **J.S. Gutkind.** Univ. of California, San Diego.

11:00 Clinical Activity Novel GPCR Targeting Agents in Cancer: An Industry Perspective. **J. Allen.** Oncoceutics, Inc.

11:30 A Novel BRET Biosensor for Gαq-GTP Reveals Unique Properties of Cancer-Associated GNAQ Mutants. **M. Garcia-Marcos, M. Maziarz, A. Leyme.** Boston University. (557.3)

11:45 HRH1: A Novel GPCR Drug Target in Pancreatic Cancer. **A. Rodriguez, K. Sriram, K. Moyung, P. Insel.** University of California and San Diego. (695.1)

### 292. RNA BINDING PROTEINS IN CARDIOVASCULAR DISEASE

#### Symposium

(Sponsored by: ASPET Division for Cardiovascular Pharmacology (CVP))

9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAired: M. TRANTER

COCHAired: E.J. TARLING

#### Cardiovascular

#### RNA

#### Gene Expression

9:30 The Role of Tristetraprolin (TTP) in Regulating Cardiac Iron Homeostasis and Metabolism. **H. Ardehali.** Northwestern Univ.

9:54 Cardiac-specific Deletion of the RNA Binding Protein HuR Protects Against Pathological Cardiac Hypertrophy. **M. Tranter.** Univ. of Cincinnati.

- 10:18 The Role of RNA Binding Protein *rbfox2* in Human Heart Diseases. **M. Kuyumcu-Martinez**. Univ. of Texas—Medical Branch.
- 10:42 HuR: Novel Regulator of Cardiovascular Pathophysiology. **P. Krishnamurthy**. Univ. of Alabama—Birmingham.
- 11:06 Post-transcriptional Regulation of Cholesterol Homeostasis as a Mediator of Atherosclerosis. **C. Fernandez-Hernando**. Yale Univ.
- 11:30 The Addition of GFP to Exosomes Influences Cardioprotective Potential Through an RNA Binding Mechanism. **L. Haar, T. Lynch, A. Guo, Y. Wang, G. Kuffel, W.K. Jones**. Loyola University Chicago. (839.8)
- 11:40 ZFP36L1 Is a Post-Transcriptional Regulator of Lipid Metabolism. **E.J. Tarling, B.L. Clifford, J. Cheng, P. Morand, A. Cheng, E. Lester, T. Sallam, M. Turner, T.Q. de Aguiar Vallim**. University of California, Los Angeles and The Babraham Institute, United Kingdom. (842.6)

### 293. THE BRIGHT AND DARK SIDE OF NRF2 FOR TISSUE PROTECTION

#### Symposium

(Sponsored by: ASPET Division for Toxicology (TOX))

9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: Q.M. CHEN

#### Toxicology

#### Cancer and Therapy

#### Inflammation/Immunity

#### Metabolism and Metabolic Disease

- 9:30 Introduction. **Q. Chen**. Univ. of Arizona.
- 9:35 Canonical and Non-canonical Pathways of Nrf2 Activation. **D. Zhang**. Univ. of Arizona.
- 10:05 Nrf2 as a Therapeutic Target for Treatment of Neurodegenerative Diseases. **J. Johnson**. Univ. of Wisconsin.
- 10:35 Keap 1 Independent Mechanism of Nrf2 Protection Against Liver Injury. **T. Kensler**. Univ. of Pittsburgh.
- 11:05 The Interplay of MicroRNAs and Nrf2 Inducers in Diabetic Complications. **L. Cai**. Univ. of Louisville.
- 11:35 NFE2L2 (Nrf2) Attenuates TGF- $\beta$ 1 Signaling by Elevation of Smad7 in Mouse Mesangial MES-13 Cells. **M-K. Song, I-G. Ryoo, D. Ryu, S-H. Lee, M-K. Kwak**. The Catholic University of Korea, Republic of Korea. (562.12)
- 11:50 Q&A.
- 11:55 Conclusion.

### 294. TRANSPORTERS AT THE BLOOD-CNS BARRIERS

#### Symposium

(Sponsored by: ASPET Division for Drug Metabolism and Disposition (DMDD))

9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: J. WANG

COCHAired: P. RONALDSON

#### Drug Metabolism and Disposition

#### Cancer and Therapy

#### Metabolism and Metabolic Disease

- 9:30 Quantifying Drug Transport at the Blood-Brain Barrier and the Role of Uptake and Efflux Transporters. **M. Hammarlund-Udenaes**. Uppsala Univ.
- 10:00 Targeting Blood-Brain Barrier Transporters for CNS Drug Delivery: Role of Transforming Growth Factor- $\beta$  Signaling. **P. Ronaldson**. Univ. of Arizona.
- 10:30 Influence of Peptide Transporter 2 (PEPT2) on the Brain Disposition/Dynamics of Peptides and Peptide-Like Drugs. **D. Smith**. Univ. of Michigan.
- 11:00 Molecular Pathways of Organic Cation and Anion Transport at the Blood-CSF Barrier. **J. Wang**. Univ. of Washington.
- 11:30 Is Inhibitor Binding the Sole Requirement in Determining Inhibition of ABCG2 Mediated Transport? **T. Gose, Y. Fukuda, A. Allcock, J. Lynch, W. Lin, S. Das, A. Shelat, T. Chen, J.D. Schuetz**. St. Jude Children's Research Hospital. (693.9)
- 11:45 Panel discussion.

### 295. ASPET DAILY DATABLITZ

#### Poster Discussion

1:00 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D  
ASPET POSTER DISCUSSION AREA BOOTH 820

CHAired: M.J. HERNANDEZ

Experience the daily ASPET datablitz, a rapid-fire oral presentation of research in the ASPET poster discussion lounge in the poster hall. These brief snippets of research are an introduction to their full presentations that will take place at their poster boards afterwards. You won't want to miss this fast-paced overview of the most exciting science of the day.

- 1:00 Investigating Organic Cation Transporter 3 (OCT3) and Plasma Membrane Monoamine Transporter (PMAT) as Targets for Development of New Antidepressant Treatments for Juveniles and Adolescents. **M.A. Bowman, N.C. Mitchell, R. Fraser-Spears, G. Gould, L.C. Daws**. The University of Texas Health Science Center at San Antonio and University of the Incarnate Word. (680.3)

- 1:05 Characterization of the Effects of Standard and Atypical Dopamine Uptake Inhibitors and Other Centrally Acting Drugs on the EEG of Freely Moving Rats. **C. Zanettini, A. Scaglione, J. Keighron, J.B. Giancola, S-C. Lin, A.H. Newman, G. Tanda.** Medication Development Program, National Institute on Drug Abuse, National Institutes of Health Intr, Neural Circuits and Cognition Unit, Laboratory of Behavioral Neuroscience and National Institute on Agi. (681.11)
- 1:10 Cancer-Associated Fusions of the Protein Kinase C Kinase Domain Are Loss-of-Function. **A-A.N. Van, T.R. Baffi, M.T. Kunkel, C.E. Antal, A.C. Newton.** University of California and San Diego. (687.6)
- 1:15 A Snake Venom-Derived Hemocoagulase Modified with Factor Xa Restores Hemostasis in Heparin-Treated, Hypocoagulant Mice. **M. Jackson, R. Adili, X. Dai, B. X. Li, M. Holinstat.** University of Michigan and Lee's Pharmaceutical, People's Republic of China. (701.7)
- 1:20 Determining the Effects of E-Cigarette Vapor on Oral Epithelial Cells in a Cultured Cell Model. **M. Duggar, H. Swanson, M. Hill-Odom.** University of Kentucky and Xavier University of Louisiana. (692.3)
- 1:25 Break.
- 1:30 The Synergistic Effect of Dopamine and Norepinephrine Transporter Inhibition on Cognitive Enhancement. **M.M. Pantoni, S.G. Anagnostaras.** University of California and San Diego. (688.1)
- 1:35 SNPS Outside Response Elements Impact Aryl Hydrocarbon Receptor (AHR) Binding and Gene Regulation: Genome-Wide SNP-Dependent Transcriptional Regulation. **D. Neavin, D. Liu, H. Li, L. Wang, R. Weinshilboum.** Mayo Clinic. (694.3)
- 1:40 Alpha-2C Adrenergic Receptor Promotes the Malignant Phenotype of Colon Cancer Cells. **R. Njeim, A. Eid.** American University of Beirut, Lebanon. (695.5)
- 1:45 Aspirin Protects Heart Against Ischemia-Reperfusion Injury via LKB1-Sestrin2-AMPK Signaling Cascade. **S. Lu.** University of Mississippi Medical Center. (698.9)
- 1:50 Differential Sphingosine-1-Phosphate Receptor 1 Expression in Male and Female Murine Heart and Brain Following Acute Ischemia and Reperfusion. **S. Shi.** University of Arizona College of Medicine – Phoenix. (697.11)
- 1:55 Discussion.

## 296. P.B. DEWS LIFETIME ACHIEVEMENT AWARD FOR RESEARCH IN BEHAVIORAL PHARMACOLOGY LECTURE

### Lecture

(Sponsored by: ASPET Division for Behavioral Pharmacology (BEH))

2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

### Behavioral Pharmacology

#### Award Lectures

The P.B. Dews Award for Research in Behavioral Pharmacology recognizes outstanding lifetime achievements in research, teaching, and professional service in the field of behavioral pharmacology and to honor Dr. Peter Dews for his seminal contributions to the development of behavioral pharmacology as a discipline.

- 2:30 Introduction.
- 2:35 Drug-behavior Interactions and Drug Discrimination Learning. **R. Balster.** Virginia Commonwealth Univ.

## 297. BRINGING BASIC SCIENCES INTO CLINICAL EDUCATION

### Symposium

(Sponsored by: ASPET Division for Pharmacology Education (DPE))

3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAired: R. THEOBALD

COCHAired: K. KARPA

### Education

- 3:00 Introduction and Clinical Pharmacology Elective for 4th Year Medical Students. **R. Theobald.** A. T. Still Univ. of Health Sciences.
- 3:30 Moving Across the Chasm: From Drug Facts to Clinical. **K. Karpa.** Penn State Univ.
- 4:00 Revitalizing Pharmacology in the UK Medical Curriculum. **S. Maxwell.** Edinburgh Medical Sch. Univ. of Edinburgh.
- 4:30 Integrating All the Medical Sciences into the Clinical Years of Medical Education. **S. Grap.** Penn State Univ.
- 5:00 Workshop for Creation of Clinical Pharmacology Activities.
- 5:25 Conclusion.

## 298. LOOKING TO THE FUTURE OF BEHAVIORAL PHARMACOLOGY

### Symposium

(Sponsored by: ASPET Division for Behavioral Pharmacology (BEH))

3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAired: R.I. DESAI

COCHAired: E. JUTKIEWICZ

### Behavioral Pharmacology

- 3:30 Introduction. **R. Desai.** Harvard Medical Sch., McLean Hosp.
- 3:40 New Therapies for Alcohol-use Disorder. **K. Murnane.** Mercer Univ. Col. of Pharmacy.
- 4:05 Neuroinflammatory Targets to Promote Stress Resilience. **S. Wood.** Univ. of South Carolina Sch. of Med.
- 4:30 Radiation-induced Deficits in Sustained Attention and Memory. **C. Davis.** Johns Hopkins Univ. Sch. of Med.
- 4:55 Touchscreen Technology in the Development of Improved Preclinical Models. **B. Kangas.** McLean Hosp., Harvard Medical Sch.
- 5:20 Evaluation of the Wake-Promoting Effects of JZP-110: A Dopamine and Norepinephrine Reuptake Inhibitor. **M. Baladi.** Jazz Pharmaceuticals.
- 5:45 Summary and Discussion. **M. Nader.** Wake Forest Sch. of Med.

299. DIVISION FOR CANCER PHARMACOLOGY—  
YOUNG INVESTIGATORS SYMPOSIUM

## Symposium

*(Sponsored by: ASPET Division for Cancer Pharmacology (DCP))*

3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: J. YALOWICH

COCHAired: C. CANMAN

## Cancer and Therapy

- 3:30 Introduction.
- 3:35 GPR68, a Proton Sensing GPCR, Mediates Interaction of Pancreatic Cancer Associated Fibroblasts and Cancer Cells. **S. Wiley, K. Sriram, W. Liang, S. Chang, T. McCann, H. Nishihara, R. French, A. Lowy, P. Insel.** University of California, San Diego and Hokkaido Cancer Center, Japan. (695.2)
- 3:55 Deciphering the Role of SLX4IP in Telomere Maintenance Mechanisms. **T. Whited, N. Robinson, M. Grabowska, W. Schiemann, D. Taylor.** Case Western Reserve University. (695.7)
- 4:15 S100A8 and S100A9 Proteins in Tyrosine Kinase Inhibitor Resistance in FLT3-ITD-Positive Acute Myeloid Leukemia. **M.E. Zavorka Thomas, D.R. Buelow, J. Y. Jeon, S.B. Pounds, S.D. Baker.** The Ohio State University and St. Jude Children's Research Hospital. (566.2)
- 4:35 Structural Characterization of KRAS with a Novel Interactor, Argonaute 2. **J. Waninger, S. Shankar, R.F. Siebenaler, T.S. Beyett, J.J. Tesmer, A.M. Chinnaiyan.** University of Michigan. (695.6)
- 4:55 Bioengineered *let-7c* Is Effective at Reducing Orthotopic Hepatocellular Carcinoma Tumor Burden and Is Well Tolerated in Mouse Models. **J.L. Jilek, Q. Zhang, P. Y. Ho, M. Tu, Z. Duan, A. Yu.** University of California, Davis. (565.2)
- 5:15 Genetic Ablation of the ABC Transporter ABCC4 Impairs Lymphoid Leukemogenesis. **R.R. Crawford, S. Cheepala, S. Lian, Y. Fukuda, Y. Wang, J.D. Schuetz.** St. Jude Children's Research Hospital. (695.15)
- 5:35 Tumor Suppressor Alpha-Arrestin ARRDC3 Controls GPCR Signaling and Breast Cancer Chemoresistance. **W. A. Pan, A. Arakaki, J. Trejo.** Department of Pharmacology, School of Medicine, University of California and San Diego. (566.14)
- 5:55 Conclusion.

300. DIVISION FOR NEUROPHARMACOLOGY  
POSTDOCTORAL SCIENTIST  
AWARD FINALISTS

## Symposium

*(Sponsored by: ASPET Division for Neuropharmacology (NEU))*

3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAired: J. TRAYNOR

COCHAired: S. TSIRKA

## Neuroscience

- 3:30 Grey Matter Dysmyelination During Abstinence in Ethanol Dependence. **S.S. Somkuwar, E. Villalpando, L.W. Quach, M. Scadeng, B. McKenna, M.J. Fannon, Y. Jones, A. Zemljic-Harper, B.P. Head, C.D. Mandyam.** VA San Diego Healthcare System, University of California and San Diego. (821.7)
- 3:45 Regulation of Serum- and Glucocorticoid-Inducible Kinase Phosphorylation and Catalytic Activity in Ventral Tegmental Area by Chronic Drugs of Abuse. **V. Bali, M. Doyle, M. Mazei-Robison.** Michigan State University. (680.8)
- 4:00 Sex Differences in Antinociceptive Tolerance Development to  $\delta^9$ -THC and CP55,940 in Wild-Type and Desensitization-Resistant S426A/S430A Mice. **A.N. Henderson-Redmond, D.E. Sepulveda, E.L. Ferguson, A.M. Kline, C.M. Nealon, D.J. Morgan.** Pennsylvania State University. (684.10)
- 4:15 Identification of Small Molecule Ligands Targeting GPR83, a G-Protein Coupled Receptor Activated by the Abundant Neuropeptide PEN **L.M. Lueptow, I. Gomes, A. Gupta, R. Sanchez, L. Devi.** Icahn School of Medicine at Mount Sinai. (829.9)
- 4:30 Efficacy of Negative Allosteric Modulators of mGlu<sub>2</sub> and mGlu<sub>3</sub> in a Rodent Model of Major Depressive Disorder. **M.E. Joffe, C.I. Santiago, J.L. Engers, C.W. Lindsley, P.J. Conn.** Vanderbilt. (554.4)
- 4:45 Leukemia Inhibitory Factor Modulates the Post-Stroke Immune Response in Rats. **S.M. Davis, L.A. Collier, C.C. Leonardo, C.T. Ajmo, T.J. Kopper, J.C. Gensel, K.R. Pennypacker.** University of Kentucky and University of South Florida. (824.4)
- 5:00 Analysis of Antinociception Produced by Positive Allosteric Modulators of the Mu-Opioid Receptor. **R. Kandasamy, J.R. Traynor.** University of Michigan Medical School. (684.6)
- 5:15 Dopaminergic Perturbations from Food Restriction and Exercise Are Sex-Dependently Amplified During Adolescence. **T.L. Gilman, W.A. Owens, C.M. George, L. Metzler, L.C. Daws.** The University of Texas Health Science Center at San Antonio. (682.6)

- 5:30 Myeloid Arginase 1 Protects Against Retinal Ischemia-Reperfusion Injury. **A. Fouda, Z. Xu, E. Shosha, J. Chen, W. Caldwell, P. Narayanan, R. Caldwell.** Augusta University. (824.12)
- 5:45 Assessing Opioid Tolerance Mechanisms in an Isolated Murine Dorsal Root Ganglia Neuron Model. **J.C. Jacob, W.L. Dewey, H.I. Akbarali.** Virginia Commonwealth University. (683.8)

### 301. DIVISION FOR TRANSLATIONAL AND CLINICAL PHARMACOLOGY—YOUNG INVESTIGATOR AWARDS PLATFORM SESSION

#### Symposium

(Sponsored by: ASPET Division for Translational and Clinical Pharmacology (TCP))

3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: F. KIM

#### Translational and Clinical Pharmacology

- 3:30 Introduction.
- 3:40 Heat Shock Protein 90 Promotes Morphine Anti-Nociception in the Spinal Cord, but Not in the Brain, in a Murine Cancer Induced Bone Pain Model. **C. Stine, W. Lei, J.M. Streicher.** University of Arizona. (701.6)
- 3:55 Rapamycin PFC Nanoparticles Pre-Treatment Mitigates Cisplatin Induced Acute Kidney Injury. **J. Doherty, J. Fazal, S. Wickline, H. Pan.** University of South Florida Health. (701.8)
- 4:10 A Novel Metformin-Methylglyoxal Imidazolinone Metabolite (IMZ) Sensitizes Cells to Insulin; a Potential Role in Alleviating T2DM Complications. **T.L. Hargraves, N.J. Mastrandrea, S.S. Lau, T.J. Monks.** University of Arizona and Wayne State University. (571.8)
- 4:25 Identification of Novel Host Factors That Reduce Cell Damage Induced by the Bacterial Pore-Forming Toxin Streptolysin O. **T. Escajadillo, L. Popov, S. Dahesh, J.E. Carette, V. Nizet.** University of California, San Diego and Stanford University. (570.9)
- 4:40 Therapeutic Exosome Preparations: Relative Bioactivities of Intra- and Extra-Vesicular Components. **K. Luther, J. Liu, E. Marban.** Cedars-Sinai Medical Center. (840.8)
- 4:55 DNA-PK Is Activated in Human Atherosclerotic Plaques and Its Partial Inhibition by Gene Heterozygosity Reduces Atherogenesis in Mouse Model of the Disease. **M.A. Ghonim, K. Pyakurel, H. Luu, M. Dean, H. Bazan, H. Boulares.** Louisiana State University Health Sciences Center. (570.2)
- 5:10 Awards Presentation.

### 302. DIVISION FOR TRANSLATIONAL AND CLINICAL PHARMACOLOGY—EARLY CAREER FACULTY SHOWCASE

#### Symposium

(Sponsored by: ASPET Division for Translational and Clinical Pharmacology (TCP))

5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: P.J. HORNBY

#### Translational and Clinical Pharmacology

- 5:30 Interleukin-6 and the Mineralocorticoid Receptor: Old Targets in a New Pathway? **B. Wynne.** Emory Univ. Sch. of Med.
- 5:45 Genetic and Non-genetic Factors Affecting UGT2B17, An Important Androgen and Drug Metabolizing Enzyme: Applications in Precision Medicine. **B. Prasad.** Univ. of Washington.

## Physiology

### 303. DO IT AGAIN: HOW TO ACHIEVE RIGOROUSLY REPRODUCIBLE RESEARCH II

#### Symposium

(Sponsored by: Trainee Advisory Committee)

MON. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: R. DOWNEY

COCHAired: I. OBI

#### Career and Professional Development

- 7:00 Building bridges: learning to work effectively with regulatory committees. **Bill Yates**. Univ. of Pittsburgh Sch. of Med.
- 7:30 Practical applications of rigor and reproducibility in the laboratory. **Sean Stocker**. Univ. of Pittsburgh Sch. of Med.

### 304. HALLMARKS OF GROUND RULES FOR PRODUCTIVE COLLABORATIONS IN SCIENCE. MAINTAINING MOMENTUM IN COLLABORATIONS

#### Symposium

(Sponsored by: APS Careers in Physiology Committee)

MON. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: J. BRANDAUER

COCHAired: B. BECKER

#### Career and Professional Development

- 7:00 Maintaining momentum in collaborations. **David Pollock**. Univ. of Alabama at Birmingham.
- 7:20 Maintaining momentum in collaborations. **C. Schnackenberg**. GlaxoSmithKline.
- 7:40 Panel discussion.

### 305. 2018 MENTORING SYMPOSIUM: RECOGNIZING AND RESPONDING TO IMPLICIT BIAS IN SCIENCE III

#### Symposium

(Sponsored by: Women in Physiology Committee)

MON. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: D. AL ALAM

COCHAired: K. WALLACE AND D.H. HO

#### Diversity in Science

#### Career and Professional Development

- 7:00 *Impact Bias*: What is it and what can we do about it? **Tamera Schneider**. Wright State Univ.
- 7:30 General discussion.

### 306. NOVEL PHYSIOLOGIC-BASED APPROACHES TO TREATING SLEEP APNEA

#### Symposium

(Sponsored by: Hypoxia Group)

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: J. DEMPSEY

COCHAired: M. BATES

#### Neuroscience

#### Emerging Technologies

#### Cardiovascular

- 8:30 Treating upper airway muscle dysfunction via hypoglossal nerve stimulation. **Atul Malhotra**. UCSD.
- 9:00 Strategic decision making and identification of potential drug targets for OSA pharmacology. **Richard Horner**. Univ. of Toronto.
- 9:30 Treating the apnea of heart failure: complexities and controversies. **Shahrokh Javaheri**. Univ. of Cincinnati.

### 307. NEW CONCEPTS IN JGA PHYSIOLOGY

#### Symposium

(Sponsored by: Renal Section)

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: J. PETI-PETERDI

COCHAired: C. BUCKLEY

#### Metabolism and Metabolic Disease

- 8:30 SGLT2 inhibitors and glomerular hemodynamics. **Volker Vallon**. UCSD.
- 8:52 New role of macula densa cells in tissue remodeling. **Georgina Gyarmati**. USC.
- 9:14 Imaging and manipulation of renin cells. **Charlotte Buckley**. Queen's Medical Research Institute.
- 9:36 Non-canonical functions of renin cells: renal physiology, regeneration and beyond. **Vladimir Todorov**. TU Dresden.

### 308. IMPACT OF SEX-SPECIFIC SIZE OF THE NORMAL AND FAILING LEFT VENTRICLE: STUDIES IN HUMANS AND MICE

#### Symposium

Sex/Gender Research Interest Group

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: P.L. KERKHOF

COCHAired: V.M. MILLER

#### Cardiovascular

#### Diversity in Science

- 8:30 Sex-specific aspects of cardiac maladaptation to hypertension and arterial stiffness. **Tatiana Kuznetsova**. KU Leuven.
- 9:00 Sex differences in cardiac function for mice with increased arterial stiffness. **Jessica Wagenseil**. Washington Univ.
- 9:30 Sex differences in cardiac electrophysiology and medical device effectiveness: cardiac resynchronization therapy in women. **Robert Zusterzeel**. NIH, FDA Office of the Commissioner.

### 309. PUBLISHING 101: HOW TO GET YOUR WORK PUBLISHED AND AVOID ETHICAL MINEFIELDS

#### Symposium

(Sponsored by: Publications Committee)

MON. 8:30 AM—8:30—SAN DIEGO CONVENTION CENTER, ROOM 28DE

- Preparing your work for publication in APS journals. **Curt Sigmund**. Roy J. and Lucille A. Carver College of Medicine University of Iowa.
- 9:00 Publications ethics considerations. **Christina Bennett**. American Physiological Society.
- 9:30 Editors-in-Chief Panelists Discussion. **Rory Morty, Sue Bodine**. Max Planck Inst. for Heart and Lung Res., Giessen, Germany., Univ. of Iowa Carver Col. of Med.

### 310. BIOARTIFICIAL ORGANS: USING DONOR AND SYNTHETIC SCAFFOLDS

#### Symposium

(Sponsored by: Integrative Physiology Symposium Series)

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: L.M. HARRISON-BERNARD

#### Emerging Technologies

- 8:30 Directed morphogenesis: bringing tissue engineering and developmental biology together? **Harald Ott**. Mass General Hosp.
- 9:00 Bioartificial lung regeneration derived from lungs of Rhesus macaques. **Bruce Bunnell**. Tulane Univ.
- 9:30 Acellular human heart matrix: a critical step toward whole heart grafts. **Luiz Sampaio**. Texas Heart Inst.

### 311. THE PHYSIOLOGY OF PERSONALIZED NUTRITION

#### Symposium

(Sponsored by: Nutrition Physiology Interest Group)

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

CHAired: B. VOY

COCHAired: J. ANTHONY

#### Nutrition/Obesity

- 8:30 Genetic and gender variation in the response to global human diets. **William Barrington**. UCLA.
- 8:52 Contribution of the gut microbiome to individual response to diet. **Frederico Rey**. Univ. of Wisconsin—Madison.
- 9:14 Genetic variation in human flavor perception. **Danielle Reed**. Monell Chemical Senses Ctr.
- 9:36 Personalized nutrition from the perspective of phenotypic flexibility. **Susan Wopereis**. Netherlands Organ. for Appl. Sci. Res. (TNO).

### 312. NON-CODING RNA REGULATION OF INFLAMMATION IN CARDIOVASCULAR, KIDNEY, AND RESPIRATORY DISEASES

#### Featured Topic

(Sponsored by: Physiological Genomics Group)

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: A. KRIEGL

COCHAired: L. ROGERS

#### Inflammation/Immunity

- 8:30 Lipoprotein small RNAs activate TLR signaling in cardiopulmonary diseases. **Kasey Vickers**. Vanderbilt University.
- 9:00 Enhancer-Associated Long Non-Coding RNAs Regulate Vascular Endothelial Function. **Z. Chen, Y. Miao, F-M. Lin, T-S. Huang, N. Ajami, S. Subramaniam, S. Chien**. City of Hope, University of California and San Diego. (843.19)
- 9:15 Renal Impact of Systemic Inhibition of miRNA-451 in a Mouse Model of Insulin Resistance. **M.B. Fluitt, L. Li, N. Shivapurkar, C.M. Ecelbarger**. Georgetown University. (752.3)
- 9:30 Liposomal Delivery of miR-29b Restored PRMT-1 and PRMT-5 Expression and Histone Methylation in Mice Exposed to Perinatal Inflammation. **S.S. Sugar, K.M. Heyob, R.M. Lee, L.K. Rogers**. The Research Institute at Nationwide Children's Hospital and The Ohio State University. (916.1)
- 9:45 Chronic Alcohol Misuse Induces Alveolar Macrophage Oxidative Stress and Mitochondrial Dysfunction via Upregulation of microRNA-130a. **S.M. Yeligar**. Emory University and Atlanta VA Medical Center. (618.22)

**313. ION CHANNELS AND TRANSPORTERS IN HEALTH AND DISEASE****Featured Topic***(Sponsored by: Cell and Molecular Physiology Section)*

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: R. WORRELL

**Neuroscience****Cardiovascular**

- 8:30 Porcine Epidemic Diarrhea Virus, a Member of the *Coronaviridae* Family, Increases Epithelial Secretion in the Jejunum by Up-Regulation of Kcnn4. **C.B. Enns, J.C. S. Harding, M.E. Loewen.** University of Saskatchewan, Canada. (750.28)
- 8:45 Oligomerization of Ferroportin and the Mechanism of Autosomal Dominance in Ferroportin Disease. **J.P. Bonamer, T.A. Ruwe, B. Qiao, K.R. Vieth, T. Ganz, E. Nemeth, B. Mackenzie.** University of Cincinnati College of Medicine, David Geffen School of Medicine at University of California, Los Angeles. (750.14)
- 9:00 The Role of Exocyst Complex in the Fusion Process of Kca3.1 at the Basolateral Membrane of Epithelial Cells. **R.E. Farquhar, F.J. McDonald, K.L. Hamilton.** University of Otago, New Zealand. (750.26)
- 9:15 Characterizing the Expression of TRPV4 in the Choroid Plexus Epithelia as a Prospective Component in the Development of Hydrocephalus in the Gas8<sup>ST</sup> Juvenile Mouse Model. **A.E. Hochstetler, L. Whitehouse, P. Antonellis, N.F. Berbari, B.L. Blazer-Yost.** Indiana University—Purdue University Indianapolis. (750.12)
- 9:30 Knockout of KCNJ16 (Kir5.1) in Dahl Salt-Sensitive Rats Produces Seizure Phenotype. **A.D. Manis, M.R. Hodges, T.S. Pavlov, A. Staruschenko, O. Palygin.** Medical College of Wisconsin and Henry Ford Hospital. (750.3)
- 9:45 A Conserved Pain Syndrome Resulting from the Acute Activation of TRPA1 by Chemotherapy Drugs. **N. Boiko, E. Montano, K.M. Hargreaves, B.A. Eaton, J.D. Stockand.** The University of Texas Health Science Center at San Antonio. (750.4)

**314. GUT-BRAIN INTERACTIONS AND CONTROL OF FEEDING BEHAVIOR****Featured Topic***(Sponsored by: Endocrinology and Metabolism Section)*

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: L. STEIN

**Nutrition/Obesity****Neuroscience****Metabolism and Metabolic Disease**

- 8:30 Gut vagal afferent signaling regulates hippocampus function through multisynaptic pathways. **Scott Kanoski.** University of Southern California.

- 9:00 Coordination of Homeostatic Functions by Intrascapular Brown Adipose Tissue- and Pancreas-Related Command Neurons. **S.M. Butcher, B.V. Hamling, L.D. Desmoulins, A. Zsombok.** Tulane University and Tulane University School of Medicine. (766.3)
- 9:15 CART-GPR160 Regulation of Food Intake. **C.J. Haddock, G.L. C. Yosten, G.R. Kolar, W.K. Samson.** Saint Louis University. (766.1)
- 9:30 Metabolic Syndrome and the Role of GLP-1 Receptor Agonists in a Model of Postmenopausal Pcos. **E.D. Torres Fernandez, D.G. Romero, L.L. Yanes Cardozo.** University of Mississippi Medical Center. (766.2)
- 9:45 Central Fructose Impairs Exendin 4-Mediated Anorexia in the Ventromedial Hypothalamus in Male C57bl/6 Mice. **M. Burmeister, J.E. Ayala.** Sanford Burnham Prebys Medical Discovery Institute and Vanderbilt University. (766.4)

**315. NOVEL INSIGHTS ON SYMPATHETIC ACTIVATION IN KIDNEY DISEASE: FROM ANIMAL MODELS TO CLINICAL TRIALS****Featured Topic***(Sponsored by: Neural Control and Autonomic Regulation Section)*

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: J. PARK

COCHAired: B. BECKER

**Neuroscience****Cardiovascular**

- 8:30 Sympathetic nervous system dysregulation in kidney disease: insights from human and animal studies. **Ronald Victor.** UCLA Cedars-Sinai.
- 9:00 Angiotensin II Acts in the Hypothalamic Paraventricular Nucleus to Differentially Regulate Blood Pressure and Sympathetic Nerve Activity in a Rodent Model of Polycystic Kidney Disease. **C.F. Underwood, A.A. Rahman, J.K. Phillips, C.M. Hildreth.** Macquarie University, Australia. (736.1)
- 9:15 Renal Sympathetic Nerves and Inflammation in Hypertension: Assessing Temporal Renal Inflammation Responses to Renal Denervation by Urinary Cytokine Excretion in the DOCA-Salt Rat. **C.T. Banek, J.W. Osborn.** University of Minnesota. (736.2)
- 9:30 Augmented Vascular  $\alpha_1$ -Adrenergic Receptor Sensitivity in Humans with Chronic Kidney Disease. **D.G. Morison, Y. Li, I. Fonkoue, M. Kankam, D. DaCosta, D. Rapista, R.M. Downey, J. Park.** Emory University School of Medicine and Emory University. (736.3)
- 9:45 Splenic 6-Hydroxydopamine Worsens Renal Inflammation and Injury in a Murine Model of Systemic Lupus Erythematosus. **G.S. Pham, B. Osazuwa, O. Thomas, S.S. Vedantam, D.L. Fancher, K.W. Mathis.** University of North Texas Health Science Center, Texas Southern University and Texas Christian University. (736.4)

**316. ADAPTATIONS IN PHYSIOLOGY EDUCATION****Featured Topic***(Sponsored by: Teaching of Physiology Section)*

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: D. OSBORNE

**Career and Professional Development**

- 8:30 Collaborative Phun Week Program Engages Elementary School Children in Physiology Learning and Jumpstarts Year-Long Physiology Curriculum. **R. Altman, K. Whited.** California State University, Sacramento and Sacramento Country Day School. (629.10)
- 8:45 Student Perspectives on Active Learning Activities in a Human Anatomy and Physiology Course. **H.M. DiFrancesca.** University of Mary Hardin-Baylor. (773.23)
- 9:00 Collaborative Testing and Reflection Papers as Supplementary Assessment Tools in a Clinical Physiology Course. **L.C. Anderson.** University of Minnesota. (773.9)
- 9:15 Academic Success Predictors in Optometry. **B. Foutch, R. Trevino, L. Fortepiani.** University of the Incarnate Word. (773.10)
- 9:30 The Impact of a Team Based Learning Exercise in the Understanding and Retention of Medical School Nutrition Education. **L. Cialdella-Kam, S. Khadilkar.** Case Western Reserve University School of Medicine. (773.24)
- 9:45 A Teaching EHR for Delivery of Small Group Cases. **D.U. Silverthorn, C. Johnston, K. Ziai.** Dell Medical School and The University of Texas at Austin. (773.25)

**317. REGULATION OF BLOOD FLOW IN HEALTH AND DISEASE****Featured Topic***(Sponsored by: Cardiovascular Section)*

MON. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: V. OHANYAN

**Cardiovascular**

- 8:30 Diabetic vasculopathy: mechanisms and potential treatments. **David Stepp.** Medical College of Georgia.
- 8:45 LPA-Induced Activation of LPA<sub>1</sub> Receptor Leads to the Loss of No-Mediated Flow-Induced Dilation in Human Microvessels. **D.S. Chabowski, K. Ait-Aissa, A.O. Kadlec, J.H. Hockenberry, A.M. Beyer, D.D. Gutterman.** Medical College of Wisconsin. (713.15)
- 9:00 Quantitative Capillary Blood Flow Spatial Analysis in Skeletal Muscle During Sepsis. **N.A. Mignemi, K.V. Kilchrist, M.A. McClatchey, I.M. Williams, C.L. Duvall, D.H. Wasserman, O.P. McGuinness.** Vanderbilt University. (713.16)
- 9:15 Reconstitution of Autophagy Improves Vascular Reactivity in Spontaneously Hypertensive Rats. **C.G. McCarthy, C.F. Wenceslau, P. Martinez-Quinones, F.B. Calmasini, R.C. Webb.** Augusta University. (713.17)

- 9:30 The Influence of Aging on Central Artery Stiffness and Cerebral Vascular Function Following an Acute Hypertensive Stimulus. **A.J. Rosenberg, E.C. Shroeder, G. Grigoriadis, S. O. Wee, G.J. Griffith, B. Fernhall, T. Baynard.** Integrative Physiology Laboratory, University of Illinois at Chicago, California State University and San Bernardino. (713.18)
- 9:45 In Vivo Visualization of Mitochondria in the Cerebral Endothelium of Mice. **I. Rutkai, T. Salter-Cid, A. Adivi, W.R. Evans, T.C. Dean, P.V. G. Katakam, D.W. Busija.** Tulane University. (713.19)

**318. IDENTIFICATION OF NOVEL DRUG TARGETS FOR THE MODULATION OF GASTROINTESTINAL MOTILITY****Symposium***(Sponsored by: GI and Liver Physiology Section)**(Cosponsored by: AJP—Gastrointestinal and Liver Physiology)*

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

**Microbiome****Nutrition/Obesity****Neuroscience**

- 1:30 Inflammation-induced neuroplasticity in the gut. **Gary Mawe.** University of Vermont.
- 1:52 Immune modulation of GI motility. **Terez Shea-Donohue.** University of Maryland.
- 2:14 Microbial modulation of the gut innervation. **Alan Lomax.** Queen's University.
- 2:36 Ca<sub>2+</sub> sensitization mechanisms and gastric motility. **Brian Perrino.** University of Nevada, Reno School of Medicine.

**319. CARDIOVASCULAR SECTION—YOUNG INVESTIGATOR SYMPOSIUM****Symposium***(Sponsored by: Cardiovascular Section)*

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: S. GOULOPOULOU

COCHAired: E. BELIN DE CHANTEMELE

**Cardiovascular**

- 1:30 Inhibition of FPR2 impaired leukocyte get-in signal and triggers non-resolving inflammation in heart failure. **V. Kain.** Univ. of Alabama at Birmingham.
- 1:45 Leptin-Induced Endothelial Dysfunction Is Mediated by Endothelial Mineralocorticoid Receptor Epithelial Sodium Channel Activation in Female Mice. **J.L. Faulkner, S. Kennard, I. Jaffe, E.J. Belin de Chantemele.** Augusta University and Tufts University. (843.32)

- 2:00 Endothelial TRPA1 Channels Are Activated by Hypoxia in Cerebral Arteries and Protect Against Ischemic Damage. **P.W. Pires, S. Earley.** University of Nevada, Reno School of Medicine. (845.2)
- 2:15 Mineralocorticoid Receptor Signaling Regulates Parenchymal Arteriole Vasodilation and Cognitive Function. **J.M. Diaz-Otero, T-C. Yen, C. Fisher, W.F. Jackson, A.M. Dorrance.** Michigan State University. (711.14)
- 2:30 Inducible Deletion of Endothelial *Hba1* Significantly Reduces Exercise Fitness in Mice. **A.S. Keller, S. Brooks, A. Islam, T. C.S. Keller, A.K. Best, M.K. Cortese-Krott, Z. Yan, H. Ackerman, B.E. Isakson.** University of Virginia, National Heart, Lung, and Blood Institute, National Institutes of Health and Heinrich-Heine University of Düsseldorf, Germany. (704.7)
- 2:45 Neddylation Is Essential for Cardiac Development via Regulation of Notch Signaling. **R.E. Littlejohn, J. Zou, W. Ma, J. Li, N. Weintraub, J. Zhou, H. Su.** Augusta University and Augusta University, Republic of Korea. (900.5)

### 320. BIOPHYSICAL AND METABOLIC REGULATION OF STEM CELLS

#### Symposium

(Sponsored by: Cell and Molecular Physiology Section)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: J. REHMAN

COCHAired: J-W. SHIN

#### Neuroscience

#### Cardiovascular

- 1:30 Introduction: Key questions in the biophysical and metabolic regulation of stem cells. **Jae-Won Shin.** University of Illinois at Chicago.
- 1:35 Biomechanical regulation of hematopoietic stem cell potential. **Pamela Wenzel.** University of Texas Health Sciences Center.
- 2:00 Oxygen and mechanics to control vascular differentiation and network assembly. **Sharon Gerecht.** Johns Hopkins University.
- 2:25 Dietary control of stem cells in physiology and disease. **Ömer Yilmaz.** Mass Instit Tech.
- 2:50 Wrap-up: Future directions. **Jalees Rehman.** University of Illinois at Chicago.

### 321. APS PRESIDENT'S SYMPOSIUM SERIES II. EXOSOMES: THE NEW FRONTIER. PATHOPHYSIOLOGY OF EXOSOMES

#### Symposium

President's Symposium Series

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: C. THÉRY

#### Cancer and Therapy

#### Neuroscience

#### Microbiome

- 1:30 Pathological role of exosomes and other extracellular vesicles in cancer. **Lorraine O'Driscoll.** Trinity College Dublin.
- 2:00 Neurodegenerative diseases and extracellular vesicles. **Shilpa Buch.** Univ. of Nebraska Med. Ctr.
- 2:30 Mediation of host-bacterial interactions by exosomes. **Bruce Stanton.** Geisel Sch. of Med., Dartmouth Med. Sch.

### 322. BIOSENSORS ADVANCING HEALTH AND DISEASE RESEARCH

#### Symposium

(Sponsored by: APS Physiologists in Industry Committee)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

CHAired: B. BUCHER

COCHAired: T.D. OLVER

#### Emerging Technologies

- 1:30 The use of telemetry to study glucose metabolism. **Patrick Tso.** University of Cincinnati Medical Center.
- 2:00 Wearable technology for injury prevention and optimal performance. **Mark Buller.** U.S. Army Research Institute of Environmental Medicine.
- 2:30 Closed-loop neuromodulation in physiological and translational research. **Stavros Zanos.** Fienstein Institute for Medical Research.

### 323. THE PHYSIOLOGICAL CHALLENGES OF ESCAPING EXTREME ENVIRONMENTS: DISABLED SUBS AND STRATOSPHERIC BAILOUTS

#### Symposium

(Sponsored by: History of Physiology Group)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: K. RYAN

COCHAired: J. DEAN

#### Physiology of Extreme Environments

- 1:30 33 Gs of deceleration, anoxia and frozen eyeballs: Bailout at 40,000 feet in 1943.. **Jay Dean.** Univ. of South Florida.

- 2:00 Stratospheric supersonic freefall flight test lessons learned. **Jonathan Clark**. Baylor Col. of Med. and Florida Inst. for Human and Machine Cognition.
- 2:30 Disabled submarine (DISSUB) escape and rescue. **Anthony Bielawski**. US Navy Undersea Rescue Command.

### 324. THE ROLE OF REDD1 IN THE REGULATION OF SKELETAL MUSCLE METABOLISM

#### Symposium

(Sponsored by: Endocrinology and Metabolism Section)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: F. FAVIER

#### Metabolism and Metabolic Disease

- 1:30 REDD1- mediated redox control governs autophagy and skeletal muscle ATP generation to promote exercise capacity. **Leif Ellisen**. Massachusetts General Hospital.
- 2:00 The role of REDD1 during muscle hypertrophy and atrophy. **Scot Kimball**. Pennsylvania State University College of Medicine.
- 2:30 The role of REDD1 in the exercise-induced change in gene expression. **Bradley Gordon**. University of Central Florida.

### 325. HANS USSING LECTURE OF THE EPITHELIAL TRANSPORT GROUP

#### Featured Topic

(Sponsored by: Epithelial Transport Group)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: Y. AKIBA

#### Metabolism and Metabolic Disease

#### Nutrition/Obesity

- 1:30 Epithelial acid-base balance, claudins, and gastric barrier properties. **Ursula Seidler**. Hannover Med. Sch., Germany.
- 2:00 Novel Mouse Model of a Human Mutation in NKCC1 Confirms Its Mistargeting in Epithelia. **R. Koumangoye, S. Omer, E. Delpire**. Vanderbilt University School of Medicine. (747.14)
- 2:15 The Sodium/Hydrogen Exchanger 2 (SLC9A2/NHE2) Is Involved in the Differentiation of Colonic Intestinal Epithelial Cells. **K. Nikolovska, C. Li, Y. Yu, Z. Yuan, A. Seidler, A. Kini, S. Yeruva, A.K. Singh, B. Riederer, U. Seidler**. Hannover Medical School, Germany. (747.15)
- 2:30 Intestinal Epithelial-Specific NHE3 Knockout Causes Metabolic Acidosis. **A. Valdez, J.A. Dominguez Rieg, R.A. Fenton, T. Rieg**. University of South Florida and Aarhus University, Denmark. (747.13)

- 2:45 Chip Regulates Aquaporin-2 Quality Control and Body Water Homeostasis. **Q. Wu, H.B. Moeller, D.A. Stevens, R. Sanchez-Hodge, G. Childers, M.L. A. Kortenoeven, L. Cheng, L.L. Rosenbaek, C. Rubel, C. Patterson, T. Pisitkun, J.C. Schisler, R.A. Fenton**. Aarhus University, Denmark, University of North Carolina at Chapel Hill and Presbyterian Hospital. (624.1)

### 326. NCAR HOT TOPICS IN AUTONOMIC REGULATION

#### Featured Topic

(Sponsored by: Neural Control and Autonomic Regulation Section)

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28DE

CHAired: K.W. MATHIS

COCHAired: C.T. BANEK

#### Neuroscience

- 1:30 Hypertensive Young Adult Female Obese Zucker Rats (OZR) Do Not Have the Blunted Baroreflexes and Poor Glycemic Control Observed in Age-Matched Hypertensive Male OZR. **P. Chaudhary, A.M. Schreihofner**. University of North Texas Health Science Center. (885.21)
- 1:45 Thoracic TRPV1 Receptor Spinal Afferent Ablation Prevents the Development and Progression of Hypertension in SHR but Not in Ang II-Infused Rats. **J.A. Shanks, S. Del Bem Velloso de Moraes, H. Wang, I.H. Zucker**. University of Nebraska Medical Center. (885.4)
- 2:00 The Inflammatory Reflex Controls Inflammation in Response to Viral Challenges. **D. Martelli, D.G. S. Farmer, E.N. Komegae, M.J. McKinley, R.M. McAllen**. Università di Bologna, Italy, Florey Institute of Neuroscience and Mental Health, Australia and University of São Paulo, Brazil. (885.2)
- 2:15 A Forebrain-Hypothalamic Circuit Mediates Hepatic Steatosis. **K.A. Blackmore, C.J. Houchen, H. Simonyan, C.N. Young**. The George Washington University School of Medicine and Health Sciences. (885.14)
- 2:30 Corticotropin-Releasing Hormone Receptor 2 in the Nucleus of the Solitary Tract Contributes to the Intermittent Hypoxia Induced Hypertension. **L. Wang, D. Nguyen, S. Cross, S. Mifflin**. University of North Texas Health Science Center. (885.11)
- 2:45 Resting Regional Brain Activity and Functional Connectivity Varies with Resting Blood Pressure but Not Muscle Sympathetic Nerve Activity in Normotensive Humans. **V.G. Macefield, S. Kobuch, L.A. Henderson**. Baker Heart and Diabetes Institute, Australia, Western Sydney University, Australia and University of Sydney, Australia. (885.15)

**327. ADVANCES IN RENAL PHYSIOLOGY I****Featured Topic***(Sponsored by: Renal Section)*

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: P. ORTIZ

COCHAired: R. CORNELIUS

**Microbiome**

- 1:30 Kidney-Specific COP9 Signalosome (Csn) Deletion Mimics Fhht Effects on WNK/NCC Signaling. **R.J. Cornelius, C-L. Yang, D.H. Ellison.** Oregon Health & Science University. (716.12)
- 1:45 A Sympathetically Mediated  $\alpha$ 1-Adrenoceptor Dependent Pathway Promotes Renal Sodium Chloride Cotransporter Activity in Age-Related Hypertension. **A.A. Frame, R.D. Wainford.** Boston University School of Medicine. (621.8)
- 2:00 SPAK (STK39) Is Involved in NKCC2 Phosphorylation and Salt-Sensitive Hypertension in Dahl Salt-Sensitive Rats. **J. A. Garcia-Pedraza, P.A. Ortiz.** Henry Ford Hospital. (620.9)
- 2:15 Renal Expression of Adhesion GPCR GPR116 (ADGRF5) Plays a Role in Urinary Concentration in Mice. **N. Zaidman, J. Pluznick.** Johns Hopkins University. (619.6)
- 2:30 Elevated Superoxide Production in Response to Angiotensin II by Proximal Tubules of Rats Consuming a Moderately Enriched Fructose Diet. **A. Gonzalez-Vicente, N. Yang, A. Morris, J.L. Garvin.** Case Western Reserve University. (716.11)
- 2:45 Tubular NHE3 Is a Determinant of the Acute Natriuretic and Chronic Blood Pressure Lowering Effect of the SGLT2 Inhibitor Empagliflozin. **W. Huang, R. Patel, A. Onishi, M. Crespo Masip, M. Soleimani, B. Freeman, V. Vallon.** University of California, San Diego and VA San Diego Healthcare System, University of Lleida, Spain and University of Cincinnati. (620.17)

**328. CARL LUDWIG DISTINGUISHED LECTURESHIP OF THE APS NEURAL CONTROL AND AUTONOMIC REGULATION SECTION****Lecture***(Sponsored by: Neural Control and Autonomic Regulation Section)*

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

**Cardiovascular****Neuroscience**

- 1:30 Heart meets brain/brain meets heart: Therapeutic opportunities. **David Paterson.** University of Oxford.

**329. EDWARD F. ADOLPH DISTINGUISHED LECTURESHIP OF THE APS ENVIRONMENTAL AND EXERCISE PHYSIOLOGY SECTION****Lecture***(Sponsored by: Environmental and Exercise Physiology Section)*

MON. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

**Cardiovascular**

- 1:30 Muscle microcirculation: Gateway to function and dysfunction. **David Poole.** Kansas State Univ. Col. of Veterinary Med.

**330. SYNERGIZING TEACHING AND SCHOLARSHIP****Symposium***(Sponsored by: Teaching of Physiology Section)*

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: D.M. HARRIS

**Education****Career and Professional Development**

- 3:30 How to apply learning theories to teaching and scholarship. **Denise Kay.** Univ. of Central Florida.
- 4:00 How to choose an appropriate research design. **John Dobson.** Georgia Southern Univ.
- 4:30 Statistical analyses in educational research. **Doug Everett.** Natl. Jewish Hlth.

**331. ALTERING PHENOTYPE WITHOUT GENOTYPE****Symposium***(Sponsored by: Translational Physiology Interest Group)*

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: J. SONES

COCHAired: D. REIJNDERS-MOST

**Nutrition/Obesity****Metabolism and Metabolic Disease****Cardiovascular**

- 3:30 Maternal obesity and neonatal body mass biometry. **Leanne Redman.** LSU Pennington Biomedical Research Center.
- 4:00 The milk of paradise? Maternal obesity, milk composition, and infant growth. **Ellen Demerath.** University of Minnesota.
- 4:30 Eating for two: parental dietary effects on offspring. **Rebecca Simmons.** Perelman Sch. of Med., Univ. of Pennsylvania

### 332. BROWN ADIPOSE TISSUE AND CARDIOVASCULAR FUNCTION: INSULIN RESISTANCE, VASCULAR TONE, AND CARDIOPROTECTIVE EFFECTS

#### Symposium

(Sponsored by: Cardiovascular Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: K. STANFORD

COCHAired: M. SCHERRER-CROSBIE

#### Cardiovascular

- 3:30 Origin and function of human beige adipocytes. **Silvia Corvera**. University of Massachusetts Medical School.
- 4:00 The cardioprotective role of brown adipose tissue. **Kristin Stanford**. Ohio State University.
- 4:30 Neuro-vascular interactions in adipose tissue. **Kristy Townsend**. University of Maine.

### 333. COMPARATIVE PERSPECTIVES ON MAXIMAL O<sub>2</sub> AND CO<sub>2</sub> TRANSPORT IN ANIMALS

#### Symposium

(Sponsored by: Comparative & Evolutionary Physiology Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: M. HEDRICK

#### Cardiovascular

- 3:30 What limits cardiac output in vertebrates? **William Joyce**. University of Aarhus.
- 4:00 Getting to the heart of the matter: oxygen supply and demand in fish. **Georgina Cox**. University of Pennsylvania.
- 4:30 Maximum gas exchange rates: Lessons from across the vertebrate spectrum. **James Hicks**. University of California—Irvine.

### 334. MOLECULAR, CELLULAR AND SYSTEMS-LEVEL MECHANISMS DRIVING VENTILATION AND CO<sub>2</sub> SENSITIVITY DURING ACUTE AND CHRONIC HYPERCAPNIA

#### Featured Topic

(Sponsored by: Respiration Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: M. HODGES

COCHAired: V. HAWKINS

#### Neuroscience

- 3:30 Molecular physiology of RTN respiratory chemoreceptor neurons. **Douglas Bayliss**. University of Virginia.

- 4:00 Ablation of neuromedin b (NMB)-expressing neurons located within retrotrapezoid nucleus (rtn) reduces the central respiratory chemoreflex (crc) selectively in conscious rats. **G. Souza, R. Kanbar, D. Stornetta, R. Stornetta, P. Guyenet**. University of Virginia and Lebanese American University. (894.10)
- 4:15 Ventilatory CO<sub>2</sub>/H<sup>+</sup> chemoreflex during chronic hypercapnia in healthy goats. **N. Burgraff, K. Buchholz, S. Neumueller, M. Hodges, L. Pan, T. Langer, H. Forster**. Medical College of Wisconsin, Carthage College and Marquette University. (894.11)
- 4:30 Acute and Chronic Respiratory Effects from Repeated Audiogenic Seizures in SS<sup>KCNJ16-/-</sup> Rats. **A.D. Manis, G.C. Mouradian, Jr., S. Alvarez-Argote, A. Staruschenko, O. Palygin, M.R. Hodges**. Medical College of Wisconsin. (894.14)
- 4:45 Hypercapnic Ventilatory Response (HCVR) Is Increased in a Rat Model of Alzheimer's Disease. **M.C. Vicente, K.C. Bicego, D.C. Carrettiero, M. C. Almeida, L.H. Gargaglioni**. Sao Paulo State University, Brazil and Universidade Federal do ABC, Brazil. (894.5)

### 335. IMPACT OF DIET ON BLOOD PRESSURE REGULATION

#### Featured Topic

(Sponsored by: Water and Electrolyte Homeostasis Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: A. GREENE

COCHAired: T. STODOLA

#### Microbiome

#### Nutrition/Obesity

#### Metabolism and Metabolic Disease

- 3:30 The DASH Diet Produces a Natriuretic Effect and Interacts with the Renin-Angiotensin-Aldosterone System. **S.A. Maris, S. Brown, P.R. Conlin, J.S. Williams**. Brigham & Women's Hospital and Harvard Medical School and Veterans Affairs Boston Healthcare System. (763.7)
- 3:45 Differential Sympathetic and RAAS Responses to a Low Sodium Diet. **M.C. Babcock, A.T. Robinson, J.C. Watso, K.U. Migdal, M.M. Wenner, S.D. Stocker, W.B. Farquhar**. University of Delaware and University of Pittsburgh. (763.8)
- 4:00 Female BALB/c Mice Develop Salt-Sensitive Hypertension and Endothelial Dysfunction in Association with Activation of the Renin-Angiotensin Aldosterone System. **J.L. Faulkner, D. Harwood, L. Bender, J. Morwitzer, M. Brands, S. Kennard, G. Antonova, E.J. Belin de Chantemele**. Augusta University. (904.5)
- 4:15 Effects of Parental Dietary Protein Source on Hypertension, Renal Injury, and Renal Inflammation. **J.M. Abais-Battad, H. Lund, J. H. Dasinger, D.J. Fehrenbach, D.L. Mattson**. Medical College of Wisconsin. (883.2)

- 4:30 The Short and Long-Term Effects of Food Restriction on Body Composition and the Renin Angiotensin System. **A. Souza, C.A. West, G. Campos, A.V. Pai, H. Ji, K. Sandberg.** Georgetown University and Universidade Federal de Ouro Preto, Brazil. (904.7)
- 4:45 Timing of Blood Pressure Rhythms Predict Risk of Renal Injury in the Dahl Salt-Sensitive Rats. **D. Chen, J.N. Booth III, C. Houchin, J.C. Colson, C. Jin, A.W. Cowley, A. Geurts, P. Muntner, M.E. Young, D.M. Pollock, J.S. Pollock.** University of Alabama at Birmingham and Medical College of Wisconsin. (905.11)

### 336. PROTECTIVE MECHANISMS IN THE VASCULATURE: WIGGERS AWARD SESSION

#### Featured Topic

(Sponsored by: Cardiovascular Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: C. SIGMUND

#### Cardiovascular

- 3:30 PPAR $\gamma$ -dependent pathways protect the vasculature. **Curt Sigmund.** University of Iowa.
- 3:30 CD70 Modulates the Role of eNOS in Endothelial Cells. **A.K. Pandey, J.D. Brown, D.G. Harrison, H.A. Itani.** Vanderbilt University Medical Center. (845.7)
- 3:30 Mitochondrial-Targeted Antioxidant (MitoQ) Improves Vascular Function in Healthy Late Middle-Aged and Older Adults. **M.J. Rossman, J.R. Santos-Parker, C.A. C. Steward, N.Z. Bispham, L.M. Cuevas, H.L. Rosenberg, K.A. Woodward, M. Chonchol, R.A. Gioscia-Ryan, M.P. Murphy, D.R. Seals.** University of Colorado Boulder, University of Colorado Anschutz Medical Campus and Medical Research Council Mitochondrial Biology Unit, United Kingdom. (845.8)
- 3:30 Protective Effects of Diet and Sex on Cell Death and Intracellular Calcium in Resistance Arteries During Oxidative Stress. **C.E. Norton, S.Y. Sinkler, C.M. Manrique, S.S. Segal.** University of Missouri. (845.3)
- 3:30 Loss of Lymphocyte Adaptor Protein Lnk Predisposes to Acute Aortic Dissection. **F. Laroumanie, M.A. Saleh, L. Xiao, B.L. Dale, K.A. Gavulic, A. Korneva, M.R. Bersi, J.D. Humphrey, M.S. Madhur.** Vanderbilt University Medical Center and Yale University. (845.4)

### 337. SOLOMON BERSON DISTINGUISHED LECTURESHIP OF THE APS ENDOCRINOLOGY AND METABOLISM SECTION

#### Lecture

(Sponsored by: Endocrinology and Metabolism Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

#### Metabolism and Metabolic Disease

- 3:30 The BIG story: The beautiful, integrative, glucose metabolism and exercise. **Erik Richter.** Univ. of Copenhagen.

### 338. CARL W. GOTTSCHALK DISTINGUISHED LECTURESHIP OF THE APS RENAL SECTION

#### Lecture

(Sponsored by: Renal Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

- 3:30 *In the Flow.* Cell-specific expression and regulation of BK channels in the distal nephron. **Lisa Satlin.** Ichan Sch. of Med. at Mount Sinai.

### 339. JOSEPH ERLANGER DISTINGUISHED LECTURESHIP OF THE APS CENTRAL NERVOUS SYSTEM SECTION

#### Lecture

(Sponsored by: CNS Section)

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

#### Neuroscience

- 3:30 Getting the best reward: Neuronal mechanisms for utility maximisation. **Wolfram Schultz.** Univ. of Cambridge.

### 340. MCS LANDIS AWARD LECTURE AND BUSINESS MEETING

#### Lecture

(Sponsored by: Microcirculatory Society (MCS))

MON. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: S. PEIRCE-COTTLER

COCHAired: J. LOMBARD

#### Cardiovascular

- 3:30 Following the yellow brick road toward a better understanding of human arteriolar function requires courage, heartfelt collaborations and presence of mind. **David Gutterman.** Med. Col. of Wisconsin.

### 341. HENRY PICKERING BOWDITCH AWARD

#### Lecture

APS

MON. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

- 5:30 Oxygen sensing pathways: A critical link between inflammation and cancer. **Yatrik Shah.** Univ. of Michigan.

## TUESDAY, APRIL 24

### Across Societies

#### 342. NIH K AWARDS: NAVIGATING NIH PROGRAMS TO ADVANCE YOUR CAREER

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 31 A

##### Career and Professional Development

This presentation will focus on the NIH's Career Development Awards (K) including the most recent K99/00 Pathways to Independence Award (for postdoctoral scientists) and other K awards targeted to individuals with research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the K awards discussed will be the K01

Mentored Research Scientist Development Award, the K02 Independent Scientist Award, the K22 Career Transition Award, the K08 Mentored Clinical Scientist Development Award, the K23 Mentored Patient Oriented Career Development Award, the K24 Mid-Career Patient Oriented Career Award, and K25 Mentored Quantitative Scientist Career Development Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for beginning investigators.

9:00 Speaker. **M. Matthews.** NIH.

#### 343. POSTER/ORAL PRESENTATION PRACTICE & MENTORING SESSIONS

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, PEER  
MENTOR POD

##### Career and Professional Development

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>

#### 344. CAREER CORNER SESSIONS WITH DR. ADAMS

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER,  
CAREER CORNER

##### Career and Professional Development

Drop in or sign-up for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career

Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21. Sign up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

#### 345. ONE-ON-ONE RESUME CRITIQUE/CV, CAREER COUNSELING, ESSAY PERSONAL STATEMENT ASSESSMENTS

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CAREER  
COUNSELING ROOM

##### Career and Professional Development

One-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

#### 346. HOW SENSATIONS AND PERCEPTIONS INFLUENCE YOUR BEHAVIOR

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

##### Career and Professional Development

The neuroscience of sensations and perceptions is often presented separate from behaviors we choose; yet, they are essential antecedents causing us to behave the way we do. In this seminar, we will review the neuroscience of sensations and perceptions and learn how these unique physiological and cognitive processes influence our behavior. This understanding will help better prepare you to achieve your goals when networking and interviewing, in addition to helping you do well in all interactions, such as with professors and colleagues.

9:00 Speaker. **J. Blumenthal.** Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD.

#### 347. WHAT YOU SEEK IS WHAT YOU GET

##### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

##### Career and Professional Development

It is generally agreed that sharing in a mentoring relationship can boost one's career/professional/technical growth and development. One common concern of some professionals in today's workplace regarding mentoring is this: "Since I am not privileged to have formal mentoring available to me, how do I find and choose a mentor on my own?" This seminar provides

an overview of essential strategies for identifying, screening, selecting, and using a mentor(s). Key topics:

- Decoding the Language of Mentoring.
- Establishing Mentoring Needs and Expectations.
- Identifying, Screening, and Selecting a Mentor.
- Building a Mentorship Alliance.
- Developing Mentorship Goals and Action Steps.

9:00 Speaker. **H. Adams.** H.G. ADAMS & ASSOC., NORFOLK, VA

### 348. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS

#### Workshop

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

#### Career and Professional Development

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you.

9:00 Speakers. **R. Skibba, S. Brown.** Science Writers.

### 349. JOB HUNTING IN BIOTECH PART 3: COMPENSATION NEGOTIATION FOR SCIENTIST POSITIONS

#### Workshop

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

#### Career and Professional Development

So you've landed a job offer for an industry scientist position! Now, how do you know if the compensation package is competitive, and how do you ask for more? In this seminar you will learn how to:

- Separate out the typical components of an industry job offer letter, so you know what to ask for
- Determine if an offer is competitive and when to ask for more
- Ask for additional compensation in a way that represents your interests while maintaining positive relationships.

(This is part 3 of a 3-part series. Each seminar can be taken separately, but together they provide comprehensive information about the industry job search process.)

10:30 Speaker. **B. Lindstaedt.** UCSF.

### 350. BUT I HAVE NO SKILLS! EXPLODING MYTHS & EXPLORING CAREER OPTIONS FOR PHDS

#### Workshop

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

#### Career and Professional Development

Are the skills you developed in graduate training really useful outside of the academic lab? Many PhD candidates and postdocs exploring careers beyond the academy assume—incorrectly—that employers will not find them or their skills attractive. In this session you will have the opportunity to identify skills that you currently possess, and also to find career fields that might be a good fit for these skills.

10:30 Speaker. **J. Lombardo.** LifeWork Choices.

### 351. TRANSLATING YOUR CV INTO AN EFFECTIVE RESUME + LINKEDIN PROFILE

#### Workshop

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

#### Career and Professional Development

Now that you've completed the exploration phase, and honed in on your new professional areas of interest, how do you present yourself on paper and in-person as a compelling, credible candidate. This presentation focuses on how to transform your academic CV into an effective resume, as well as, how to write a strong cover letter and prepare for future interviews.

10:30 Speaker. **A. Green.** Univ. of California, Berkeley.

### 352. HOW TO CHOOSE YOUR IDEAL CAREER

#### Workshop

TUES. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

#### Career and Professional Development

Do you want to find a career path that you'll enjoy and find rewarding? Of course! But HOW do you find such a path, especially since there are so many different directions scientists can go with their careers?

There are more than FIFTY career options available to biomedical sciences PhD's. If you'd like to see a list of these career options, while learning about how to select the best option for you, then don't miss this thought-provoking and interactive workshop! Here you will learn about a logical, step-by-step process for exploring your career options and deciding which will provide the best fit for your own set of skills, values and interests.

1:00 Speaker. **B. Lindstaedt.** UCSF.

**353. NAVIGATING DOCTORAL WORK PROTOCOLS/ MILESTONES/ REQUIREMENTS****Workshop**

TUES. 1:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Success in graduate school starts with goal setting and the formation of an action plan to achieve desired results—obtaining the degree sought. The graduate study plan should delineate 1) what is to be accomplished in terms of expectations, degree requirements, and program milestones; 2) action steps that establish priorities for tasks to be completed; 3) process for implementing action steps; and 4) timeframe for meeting program requirements and milestones. Session participants will be guided through exercises and provided with templates for developing a graduate program plan. Session topics: Planning in the context of the Graduate School Process, Establishing Realistic Program Goals, Objectives, and Milestones, the Planning Process-Writing and Implementing a Graduate Degree Plan, and Charting Milestones to Monitor Progress and Refine Actions Steps.

1:00 Speaker. **H. Adams.** H.G. Adams & Assoc., Norfolk, VA.

**354. NIH F AWARDS: NAVIGATING NIH PROGRAMS TO ADVANCE YOUR CAREER****Workshop**

TUES. 12:00 PM—SAN DIEGO CONVENTION CENTER, HALL D, EB  
2018 CAREER CENTER, CRC-2

**Career and Professional Development**

This presentation will focus on the NIH's Ruth L. Kirschstein National Research Service Awards (NRSA). The NRSA research training fellowship (F) awards are targeted to individuals with or seeking research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the F awards discussed will be the F30, NRSA Individual Predoctoral MD/PhD or Other Dual-Doctoral Degree Fellowship Award, the F31 NRSA Individual Predoctoral Fellowship, the F31 NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research Award, the F32 NRSA Individual Postdoctoral Fellowship Award, and the NRSA Individual Senior Fellowship Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for pre- and postdoctoral fellows and senior investigators.

1:30 Speaker. **M. Matthews.** NIH.

**355. NEXT GEN PHDS AND CAREERS****Workshop**

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

There are more career options than ever before for life science PhDs. This session will provide actionable advice on how to determine what career path to pursue and how to best position yourself for your desired career.

2:00 Speaker. **P. Clifford.** Univ. of Illinois at Chicago.

**356. CAREER OPPORTUNITIES IN SCIENCE COMMUNICATIONS****Workshop**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-3

**Career and Professional Development**

Do you enjoy talking about science more than doing it? Are you the person your labmates ask to edit their manuscripts? Are you a podcast junkie, and wonder how they do it? This career session will explore careers in science communication. In science journalism, institutional communication and multimedia careers, you use your science training to make a living talking about science. If it sounds like a dream come true, then this workshop is for you.

2:30 Speakers. **R. Skibba, S. Brown.** Science Writers.

**357. GLOBAL INTERVIEW SKILLS: A PRACTICE WORKSHOP FOR INTERNATIONAL CANDIDATES****Workshop**

TUES. 3:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-1

**Career and Professional Development**

This interview practice workshop is customized for international job candidates. The key topics are: The four central questions in virtually every employment interview, understanding cultural and communication dynamics, the STAR method, and how to use "small talk" for big results.

3:00 Speaker. **D. Behrens.** Univ. of California, Berkeley.

**358. THE STRATEGIC POSTDOC: HOW TO FIND & LEVERAGE YOUR POSTDOC EXPERIENCE****Workshop**

TUES. 3:00 PM—SAN DIEGO CONVENTION CENTER,  
HALL D, EB 2018 CAREER CENTER, CRC-2

**Career and Professional Development**

Many PhDs just kind of fall in to a postdoc, rather than thinking about it from a strategic perspective. Your postdoc is never an end in itself; rather it's a means to another end whether that goal is a faculty position at a research university, a small college, national lab, or perhaps an industry job. Learn how to find postdoc opportunities that will best prepare you for that next step, and how to use your postdoc experience to facilitate the transition to your next position.

3:00 Speaker. **A. Green.** Univ. of California, Berkeley.

# Anatomy

## 359. NEUROBIOLOGY AWARD HYBRID SYMPOSIUM

### Symposium

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: G. SCHOENWOLF

### Neuroscience

C.J. Herrick Award Lecture in Neuroanatomy featuring 2018 Young Investigator Award Recipient, Helen Bateup

- 8:30 **359.1** Intersectional Genetic Approaches for Studying Dopaminergic Subpopulations. **H. Bateup**. University of California, Berkeley.
- 9:00 **359.2** Cardiolipin Exposure on the Outer Mitochondrial Membrane Modulates  $\alpha$ -Synuclein Proteostasis in hPSC-Derived Parkinson's Disease Neurons. **S.D. Ryan, T.L. Ryan, V.V. Bamm, M.G. Stykel, C.C. Coackley, K. Humphries, G. Harauz**. University of Guelph, Canada.
- 9:15 **359.3** The Role of Neuropeptides in Peripheral Taste Signaling. **A.Y. Huang, S.Y. Wu**. Southern Illinois University School of Medicine.
- 9:30 **359.4** Axonal Pathology in hPSC-Based Models of Parkinson's Disease Results from Loss of Nrf2-Transcriptional Activity at the MAP1B Gene Locus. **T. Ryan, J. Drolet, K. Sherriff, C.C. Coackley, S.D. Ryan**. University of Guelph, Canada.
- 9:45 **359.5** Nociceptive Stimulus in the Neonatal Period Affects Satellite Glial Cells Morphology in Adult Life, with Differences Between Male and Female Rats. **A. L.B. Simoes, G. A.R. Silva, C. Giorgetto, E.C. Carmo, V.P.S. Fazan**. Ribeirão Preto Medical School and University of São Paulo, Brazil.

## 360. FROM BATS TO WHALES: FEEDING SHAPES DIVERSITY IN THE MAMMALIAN SKULL

### Symposium

TUE. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11A

COCHAired: E. BRAINERD AND A. SUMMERS

### Evolution/Anthropology

- 8:30 **360.1** Food, Form and Function: Motor Control, Movement and Modulation during Mastication in Mammals. **S.H. Williams**. Ohio University Heritage College of Osteopathic Medicine.
- 9:00 **360.2** Feeding in Marine Mammals: An Integration of Evolution and Ecology Through Time. **A. Berta, A. Lanzetti**. San Diego State University.
- 9:30 **360.3** Dietary Adaptations of the Feeding Apparatus in Bats. **S. Santana**. University of Washington.

## 361. BONE DEVELOPMENT AND DISEASE

### Symposium

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: R.J. SHERWOOD

### Bones/Muscle/Connective Tissue

- 8:30 **361.1** Birth Defects of the Craniofacial Skeleton and the Potential for Prevention. **P. Trainor**. Stowers Institute for Medical Research.
- 9:00 **361.2** Heterotopic Ossification in Fibrodysplasia Ossificans Progressiva—How Does One Tissue Become Another? **E.M. Shore**. Perelman School of Medicine and University of Pennsylvania.
- 9:30 **361.3** Genetic Influences on Craniofacial Morphology. **R.J. Sherwood, D.L. Duren, J. Subedi, S. Williams-Blangero, M.C. Mahaney**. University of Missouri School of Medicine, Miami University and The University of Texas Rio Grande Valley.

## 362. GRADUATE ANATOMY EDUCATION; SUCCESSES AND CHALLENGES IN A CHANGING HEALTHCARE WORLD

### Symposium

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

CHAired: A. NOTEBAERT

### Education

- 8:30 **362.1** Creating a Unique Graduate Training Program for Educator Scholars in the Anatomical Sciences. **A. Notebaert**. University of Mississippi Medical Center.
- 9:00 **362.2** The Value of Anatomy Coursework for Professional School. **E. Robertson**. The University of Mississippi Medical Center.
- 9:30 **362.3** A Postdoctoral Fellowship in Anatomy Education—Is It Needed? **A. Schaefer**. Indiana University School of Medicine-Evansville.

## 363. NEW PERSPECTIVES ON THE DEVELOPMENT AND EVOLUTION OF THE CEREBELLUM

### Symposium

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: A. IULIANELLA

### Evolution/Anthropology

### Neuroscience

- 10:30 **363.1** Cerebellar Neuron Diversity in the Zebrafish: More Atoh1 Genes for More Atoh1 Fates? **C.U. Kidwell**. Fred Hutchinson Cancer Research Center.
- 11:00 **363.2** Constraints and Catalysts in Cerebellar Evolution. **R. Wingate**. King's College London, United Kingdom.
- 11:30 **363.3** Morphogenetic Mechanisms Generating Cell Fates in the Cerebellum. **A. Iulianella**. Dalhousie University, Canada.

**364. VERTEBRATE MORPHOLOGY AND EVOLUTION PLATFORM****Symposium**

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 11A

CHAired: C. HOLLIDAY

**Vertebrate Paleontology****Evolution/Anthropology**

- 10:30 **364.1** Gene Regulatory Network and Tissue Interactions Important for Head and Heart Development and Evolution. **J.M. Ziermann**. Howard University College of Medicine.
- 10:45 **364.2** Integration, Evolvability, and Constraint Within the Primate Functional Shoulder Complex. **E.R. Agosto, B.M. Auerbach**. University of Tennessee.
- 11:00 **364.3** A Mixed Model for the Relationship Between Latitude and Human Post-Cranial Form. **K.R. R. Savell, D.C. Katz, B.M. Auerbach, T.D. Weaver**. University of Tennessee, Knoxville, University of Calgary, Canada, University of California, Davis.
- 11:15 **364.4** Reconstructing Jaw Movement and Musculature in the Xenacanth Shark *Orthacanthus texensis*. **A.W. Bronson, A. Heers**. American Museum of Natural History and Stanford University.
- 11:30 **364.5** Differences Between Human and Great Ape Distal Humeral Articular Axes. **K.G. Zelazny, A.D. Sylvester, C.B. Ruff**. Johns Hopkins University School of Medicine.
- 11:45 **364.6** Myofascial Efficiency in Bipedalism: Progression of the Dynamic Body in Evolution and Environment. **L.D. Nemetz**. Pace University and Anatomy Trains.

**365. FUTURE OF OSTEOPOROSIS TREATMENT****Symposium**

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: M. ELSALANTY

**Bones/Muscle/Connective Tissue**

- 10:30 **365.1** A Novel Model to Assess the Effects of Osteoporosis Medications on Bone Quality. **D.R. Sumner, R. Ross**. Rush University and Rush University Medical Center.
- 11:00 **365.2** Targeting the Intestine to Treat Osteoporosis. **J. Schepper, N. Rios, H. Kang, N. Parameswaran**. Michigan State University.
- 11:30 **365.3** Pathophysiology of Anti-Resorptive Medication-Related Osteonecrosis. **T. Aghaloo**. University of California, Los Angeles School of Dentistry.

**366. ANATOMY EDUCATION PLATFORM 3—COMPETENCIES, LEARNING STRATEGIES, AND OUTCOMES****Symposium**

TUES. 10:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: C. VASAN AND A. ZUMWALT

**Education**

- 10:30 **366.1** Embracing Active Learning: A Novel Approach to Teaching Embryology at the Larner College of Medicine. **S.A. McCarthy, L.A. Holterman**. University of Vermont.
- 10:45 **366.2** Teaching Clinical Anatomy Without Lectures in an Integrated Medical School Curriculum. **M.R. Spencer, M.E. DeSantis, J.R. Stadler, J. Woodcock, W. Saltarelli**. Central Michigan University and Western Michigan University.
- 11:00 Can 3D Printed and Virtual Whole Embryo Models Save Embryology Education?. **A.N. Dueñas, J. Stratford, E. Salcedo, B. Blezinski, L.M. J. Lee**. University of Colorado Anschutz Medical Campus and University of Colorado Boulder. (508.14)
- 11:15 **366.3** Student Perceptions and Experiences with Team-Based Learning (TBL) in a Graduate Histology Course. **H.M. Azim, K.W. Condon, J.J. Brokaw**. Indiana University School of Medicine.
- 11:30 **366.4** The Implementation and Evaluation of a Clinically Oriented Anatomy Laboratory Session (COALS) for Undergraduate Nursing Students. **V. Roach**. Oakland University William Beaumont School of Medicine.
- 11:45 **366.5** Benefits of Anatomy-Centered Interdisciplinary Review Sessions. **W. Lackey-Cornelison, J. Woodcock**. Western Michigan University and Homer Stryker M.D. School of Medicine.

**367. ASSEMBLING THE PERIPHERAL NERVOUS SYSTEM****Symposium**

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11B

CHAired: L. TANAYHILL

**Neuroscience**

- 2:00 **367.1** When PNS Assembly Goes Awry: Familial Dysautonomia. **F. Lefcort, L. George, M. Chaverra**. Montana State University.
- 2:30 **367.2** Colonization of the Lower Urinary Tract by Neural Crest and Development of Pelvic Autonomic Innervation. **E.M. Southard-Smith**. Vanderbilt University Medical Center.
- 3:00 **367.3** The Warburg Effect and Lactate Signaling Augment FGF Signaling to Promote Sensory-Neural Development in the Otic Vesicle. **B. Riley, H. Kantarci**. Texas A&M University.

**368. “WELL-PRESERVED” ANATOMISTS—KEEPING LIFE FUN AND PRODUCTIVE IN RETIREMENT****Symposium**

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 11A

COCHAired: D. RHODES AND J. RHODES

**Career and Professional Development**

- 2:00 The Wide Open Spaces of Post-retirement Life. **Bruce Carlson**. The University of Michigan.
- 2:20 Life after the Lab: One Thing Leads to Another. **Gina Schatteman**. University of Iowa.
- 2:40 Keep Teaching and See the World. **Stephen Carmichael**. Mayo Clinic.
- 3:00 Tomorrow in Focus. **Debra Anderson, CFP**. TIAA.
- 3:15 Q & A.

**369. STEM CELLS, TISSUE ENGINEERING & REGENERATION PLATFORM****Symposium**

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: K. KRAMER

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

- 2:00 **369.1** The roles of histone methyl-transferase *KMT2D* in vasculogenesis. **A. Serrano, B.L. Demarest, M. Tristani-Firouzi, H.J. Yost**. Eccles Institute of Human Genetics—University of Utah and Nora Eccles Harrison Cardiovascular Research and Training Institute.
- 2:15 **369.2** Hair Follicle-Derived Neural Crest Stem Cells (HF-NCSCs) as a Cell Source of Enteric Neurons. **Z. Wang, H. Zhao, T.L. Lee, J. Rudd, W.Y. Chan**. The Chinese University of Hong Kong, Hong Kong.
- 2:30 **369.3** Critical Role of Claudin-7 in Maintaining Intestinal Crypt Stem Cell Functions. **T. Xing, S. Sabu, L.J. Benderman, Y. Chen**. East Carolina University.
- 2:45 Characterizing the Adult Hematopoietic Stem Cell (HSC) Niche in a Zebrafish Model for Fetal Bone Marrow. **S. Agarwala, K-Y. Kim, E.A. Bushong, M.H. Ellisman, J.E. Henninger, L.I. Zon, O.J. Tamplin**. University of Illinois at Chicago, University of California, San Diego, Harvard University and Boston Children’s Hospital. **(645.8)**
- 3:00 ARHGAP29 Expression and Localization in Cutaneous Wound Healing. **T. Reeb, M. Dunnwald**. University of Iowa. **(645.9)**
- 3:15 **369.4** Whole Cell and Bacterial Movement: The Identification of the Ubiquitin E2 Enzyme (UBE2N) as a Novel Actin-Associated Protein. **M.D. Chua, K-M. Moon, L.J. Foster, J.A. Guttman**. Simon Fraser University, Canada and University of British Columbia, Canada.

**370. ANATOMY IN TRANSITION: CHALLENGES AND OPPORTUNITIES ADDRESSED THROUGH HISTORICAL AND ETHICAL INQUIRY****Symposium**

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 8

COCHAired: S. HILDEBRANDT AND T. CHAMPNEY

**Education**

- 2:00 **370.1** The Transition from “Unclaimed Bodies” to Body Donation—an Ongoing Process. **A. Winkelmann**. Medical School Brandenburg, Germany.
- 2:30 **370.2** Ethical Questions for Anatomical Body Programs in an Age of Digital Technology. **J. Cornwall**. Victoria University of Wellington, New Zealand.
- 3:00 **370.3** Reframing Anatomy as a “Safe Space” for Acquiring Professional Competencies: The Role of History and Ethics of Anatomy in Medical Education. **S. Hildebrandt**. Boston Children’s Hospital/Harvard Medical School.

**371. HENRY GRAY SCIENTIFIC AWARD LECTURE****Lecture**

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

CHAired: K. TOPP

**Award Lectures**

- 4:00 Chair’s introduction.
- 4:05 **371.1** Pathogenesis of Bronchopulmonary Dysplasia: An Unanticipated Journey. **K.H. Albertine**. University of Utah.
- 4:20 Q & A.

**372. HENRY GRAY DISTINGUISHED EDUCATOR AWARD LECTURE****Lecture**

TUES. 4:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

**Education****Award Lectures**

- 4:30 Chair’s introduction.
- 4:35 **372.1** Authentic Anatomy Education: Leave Your Ego at the Door to Create Memorable Learning Experiences. **V.D. O’Loughlin**. Indiana University School of Medicine.
- 4:50 Q & A.

**373. A. J. LADMAN EXEMPLARY SERVICE AWARD LECTURE****Lecture**

TUES. 5:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 9

**Award Lectures**

- 5:00 Chair’s introduction.
- 5:05 **373.1** “For of Those to Whom Much Is Given...”. **J.T. Laitman**. Icahn School of Medicine at Mount Sinai.
- 5:20 Q & A.

## Biochemistry and Molecular Biology

### 374. WAKE-UP! IT'S TRIVIA TIME

#### Society Events

(Sponsored by: ASBMB Membership Committee)

TUES. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Workshops & Events

Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps! Prize values increase over the course of the meeting, so come back each morning! ASBMB members and biochemistry registrants welcome. Space is limited with first come, first served.

### 375. ASBMB-MERCK AWARD

#### Lecture

(Sponsored by: Merck & Co.)

TUES. 8:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Award Lectures

8:00 Awardee introduction.

8:05 **375.1** Black Spot, Black Death, Black Pearl: The Tales of Bacterial Effectors. **K. Orth.** Howard Hughes Medical Institute and The University of Texas Southwestern Medical Center.

### 376. RUTH KIRSCHSTEIN DIVERSITY IN SCIENCE AWARD

#### Lecture

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Diversity in Science

#### Award Lectures

8:30 Awardee introduction.

8:35 **376.1** Vision Cycle Proteins: Their Function, Structure and Links to Retinal Disease. **A. Ts'in.** The University of Texas Rio Grande Valley School of Medicine.

### 377. DELANO AWARD FOR COMPUTATIONAL BIOSCIENCES

#### Lecture

TUES. 9:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6B

#### Award Lectures

9:00 Awardee introduction.

9:05 **377.1** Solutions to the Computational Protein Folding Problem. **C. Sander, D. Marks.** Harvard Medical School and Dana-Farber Cancer Institute and Harvard Medical School.

### 378. ADVANCES IN SINGLE CELL OMICS

#### Symposium

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAired: J.H. EBERWINE

#### Genomics, Proteomics

10:00 **378.1** Super-Resolution Imaging of Transcription in Live Mammalian Cells. **I.I. Cissé.** Massachusetts Institute of Technology.

10:30 **378.2** Single-Cell Resolution of Developing Tissues and Cell Identity Programming. **B.J. Wold.** California Institute of Technology.

11:00 **378.3** Electrophoretic Cytometry: High-Selectivity Measurement of Isoforms Using Microfluidics. **A.E. Herr.** University of California, Berkeley.

11:30 **378.4** Multimodal Single Mouse and Human Cell 'omics: Is Variability Distinct Across Cellular Modalities? **J.H. Eberwine.** Perelman School of Medicine and University of Pennsylvania.

### 379. BIOCHEMISTRY OF AUTOPHAGY AND ORGANELLE TRAFFICKING

#### Symposium

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAired: K-L. GUAN

#### Lipids and Membranes

10:00 **379.1** Hippo Pathway in Nutrient Response and Cell Growth. **K-L. Guan.** University of California and San Diego.

10:30 **379.2** Initiation, Targeting and Sculpting of the Phagophore. **J.H. Hurley.** University of California, Berkeley.

11:00 **379.3** AMPK: Guardian of Metabolism and Mitochondrial Homeostasis. **R.J. Shaw.** Salk Institute for Biological Studies.

11:30 **379.4** Migrosome and Migrocytosis. **L. Yu, D. Jiang, Z. Jiang, A. Meng.** Tsing Hua University, People's Republic of China.

### 380. PLANTS DO IT ALL

#### Symposium

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAired: S.R. CUTLER

#### Plant Biochemistry

10:00 **380.1** Engineering Plant Signal Transduction for Water Smart Crops. **S.R. Cutler.** University of California, Riverside.

10:30 **380.2** Spatiotemporal Phytochrome-Dependent Regulation of Photosynthesis and Growth. **B.L. Montgomery.** Michigan State University.

11:00 **380.3** Discovery and Engineering of Plant Chemistry for Plant and Human Health. **E. Sattely.** Stanford University.

11:30 **380.4** Genome Editing and Plant Agriculture. **D. Voytas.** University of Minnesota.

**381. RNA-MEDIATED EPIGENETICS****Symposium**

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 1AB

**Chromatin, Epigenomics****RNA**

- 10:00 **381.1** Exploring the Biosynthesis of Hypermodified Bases One Step at a Time. **V. Bandarian**. University of Utah.
- 10:30 **381.2** The Dynamic Epitranscriptome: Control of mRNA Fate and Function by Nucleotide Modifications. **S. Jaffrey**. Weill Cornell Medicine and Cornell University.
- 11:00 **381.3** Smrt-Cappable-Seq Reveals Complex Operon Variants in Bacteria. **L. Ettwiller, B. Yan**. New England BioLabs Inc.
- 11:30 **381.4** Beyond the Central Dogma: The tRNA Epitranscriptome and an Alternative Genetic Code Tune Translation During Stress in Eukaryotes, Prokaryotes and Viral Infections. **P. Dedon**. Massachusetts Institute of Technology.

**382. SIGNAL TRANSDUCTION, PATHOGENESIS AND DISEASE****Symposium**

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAired: K. ORTH

**Cell Signaling, Signal Transduction**

- 10:00 **382.1** Single Protein-Catalyzed Ubiquitination: Chemistry and Implications in Cell Signaling. **Z-Q. Luo**. Purdue University.
- 10:30 **382.2** Proteasomal Regulation of Hormone Signaling in *Mycobacterium tuberculosis*. **K.H. Darwin**. New York University School of Medicine.
- 11:00 **382.3** Structure and Signaling Mechanisms of G Protein-Coupled and B-arrestin-Biased Chemokine Receptors. **T. Handel, M. Gustavsson, Y. Zheng, B. Stephens, G. Baker, T. Ngo, L. Holden, R. Stevens, V. Cherezov, R. Abagyan, I. Kufareva**. University of California, San Diego, Scripps Research Institute and University of Southern California.
- 11:30 **382.4** New Technologies to Interrogate G Protein-Coupled Receptor Signaling. **A. Kruse**. Harvard Medical School.

**383. STRUCTURAL BIOLOGY****Symposium**

TUES. 10:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: T. THOMPSON

**Structural Biology/Biophysics**

- 10:00 Molecular Mechanisms in Wnt Signaling. **William Weis**. Stanford Univ.
- 10:25 Talk tba. **Vince Luca**. Moffitt Cancer Ctr & Res. Inst.
- 10:50 Talk tba. **Joseph Schlessinger**. Yale Univ.
- 11:15 Biased Agonism in Receptor Tyrosine Kinase Signaling. **Mark Lemmon**. Yale Univ.
- 11:40 General discussion.

**384. ASBMB MEET THE SPEAKERS****Society Events**

TUES. 12:30 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

**Workshops & Events**

Visit the ASBMB Lounge, across from ASBMB Booth #1316, to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

**385. ASBMB MEET THE SPEAKERS****Society Events**

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

**Workshops & Events**

Visit the ASBMB Lounge, across from ASBMB Booth #1316, to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

**386. DNA DAMAGE AND REPAIR****Symposium**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAired: D. WANG

- 2:30 High-Resolution Maps of Genome-Wide Human Damage and Repair. **O. Adebali, J. Hu, A. Sancar**. University of North Carolina at Chapel Hill. **(647.3)**
- 2:45 A New Pathway of Transcription-Coupled Repair. **K. Myka, R. Washburn, K. Kusters, M. Gottesman**. Columbia University, Department of Microbiology and Immunology and Columbia University. **(786.1)**
- 3:00 Rad5 Prevents the Accumulation of ssDNA Gaps at Stressed DNA Replication Forks. **G.W. Brown, D.W. Gallo, S. Kim, Z. Zhang, D. Brnzei**. University of Toronto, Canada and International Foundations of Medicine, Italy. **(266.1)**
- 3:15 RecQ4 Helicases Stimulate Nuclease Activity During DNA Inter-Strand Crosslink Repair. **M.L. Bochman, C.M. Rogers**. Indiana University. **(522.1)**
- 3:30 **386.1** Molecular Mechanism of Transcription Transcription-Coupled Repair. **D. Wang**. University of California and San Diego.

**387. MECHANISMS OF G PROTEIN SIGNALING****Symposium**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: A.M. LYON

- 2:30 Coordinated Cross-Talk Between Calcium and cAMP in Regulating Pulsatile Insulin Secretion: A Novel Role for the Unique Inhibitory G-Protein,  $G_{\alpha z}$ , in Regulating  $\beta$ -Cell Function. **M. Schaid, J. Harington, H. Wienkes, M. Merrins, M. Kimple**. University of Wisconsin—Madison. **(666.9)**

- 2:45 New Insights into the Role of SmgGDS as a Major Integrator of Signaling by Ras and Rho Family Members in Cancer. **C. Williams, P. Gonyo, A. Brandt, O. Koehn, E. Lorimer, B. Unger, S-W. Tsaih, Y. Sun, M. McNally, H. Rui, M. Flister, C. Bergom.** Medical College of Wisconsin. (661.8)
- 3:00 Phosphorylation of G Protein  $\gamma$  Subunit Ste18 and the Ste5 Scaffold Form a Braking System that Governs Pathway Activation Kinetics and Switch-Like Signaling in Yeast. **M. Torres, S. Choudhury, P. Baradaran-mashinchi.** Georgia Institute of Technology. (661.1)
- 3:15 Plasma Membrane PI(4,5)P2 Threshold Regulates Chemotactic Signaling Pathways and Cell Morphology. **N. Bawazir, M. Beshay, A. Ring, C. Janetopoulos.** University of the Sciences. (533.27)
- 3:30 **387.1** Conformational Regulation of Phospholipase C Enzymes. **A. Lyon, E.E. Garland-Kuntz, F.S. Vago, M. Van Camp, M. Sieng, C. Corpstein, A.T. Blaine, W. Jiang.** Purdue University.
- 2:45 Metabolic Reprogramming of Macrophages Exposed to *Pseudomonas aeruginosa* Biofilm. **M. C.B. Ammons, A. Fuchs, V. Copie.** Idaho Veterans Research and Education Foundation and Montana State University. (669.23)
- 3:00 Distinct Roles of Dietary Fat and Sugar in the Development of Obesity, Insulin Resistance, Atherosclerosis and Cardiac Dysfunction in LDL Receptor Knockout Mice. **L.R. Perazza, N. Daniel, M. J. Dubois, G. Pilon, P. Mitchell, K. Le Quang, D. Lachance, E. Plante, T. Varin, R. Bouchareb, P. Mathieu, Y. Pouliot, S. Gauthier, D. Roy, C. Asselin, M. Blais, M. Lessard, A. Marette.** Laval University, Canada and Sherbrooke University, Canada. (670.27)
- 3:15 Long Non-Coding RNA H19 Serves as a Lipid Sensor to Reprogram Hepatic Lipid and Glucose Homeostasis by Interaction with RNA Binding Protein PTBP1. **Z. Yang, C. Liu, J. Wu, D-J. Shin, M. Tran, L. Wang.** University of Connecticut. (539.3)
- 3:30 Impact of Short- and Long-Term Weight Loss on the Inflammatory Profile of Metabolically Healthy and Unhealthy Obese Patients. **M. Clark, F. Barrenäs, M. Rajan, M. Sotak, V. Wallenius, E. Borgeson.** Institute of Medicine, University of Gothenburg, Sweden, Department of Cell and Molecular Biology, Uppsala University, Sweden, Institute of Clinical Sciences and University of Gothenburg, Sweden. (670.12)

### 388. MEMBRANE LIPID BIOCHEMISTRY

#### Symposium

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: J. BURKE

#### Lipids and Membranes

- 2:30 Crystallographic and Enzyme Kinetic Analyses of the Human Inositol Polyphosphate Multikinase (IPMK). **R. Blind.** Vanderbilt University. (671.6)
- 2:45 Structure and Function of Lipins: Key Enzymes in Triglyceride Metabolism. **M. Airola.** Stony Brook University. (672.6)
- 3:00 A Novel Multi-Domain Phosphatidylinositol Transfer Protein/Oxysterol Binding Protein Senses Specific Phosphoinositide Pools on *Toxoplasma* Dense Granules. **A. Grabon, V.A. Bankaitis.** Texas A&M University. (540.7)
- 3:15 Novel Biosensors for an Enigmatic Phosphoinositide. **B. Goulden, J. Zewe, R. Wills, G. Hammond.** University of Pittsburgh. (540.6)
- 3:30 Sphingomyelin-Cholesterol Complexes in Plasma Membranes. **S. Endapally, D. Frias, D. Tomchick, A. Radhakrishnan.** The University of Texas Southwestern Medical Center. (671.1)

### 389. METABOLIC REPROGRAMMING

#### Symposium

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: J. ELLIS

#### Metabolism and Metabolic Disease

- 2:30 Dynamic Actin Reorganization and Vav/Cdc42-Dependent Actin Polymerization Promote Macrophage Aggregated LDL Uptake and Catabolism. **R.K. Singh, A.S. Haka, P. Bhardwaj, F.R. Maxfield.** Weill Cornell Medicine and Cornell University. (539.11)

### 390. METALS IN BIOLOGY

#### Symposium

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAired: A.E. PALMER

- 2:30 PRL Phosphatases Promote Tumor Progression by Regulating the Level of Intracellular Magnesium. **S. Hardy, E. Kostantin, S. J. Wang, N. Uetani, M.L. Tremblay.** McGill University, Canada. (533.73)
- 2:45 Zinc-Mediated Oligomerization of S100a12. **S.M. Damo, V. Garcia, S. Little, D. Franklin, J.A. Gaddy.** Fisk University and Vanderbilt University. (792.40)
- 3:00 Heme-Free H-NOX from *Vibrio cholerae* Is Activated by Oxidation via a Zinc Ligand Switch Mechanism. **E. Yukl, K. Chacon, J. Jarvis.** New Mexico State University and Reed College. (533.91)
- 3:15 ATP as an Allosteric Modulator and Chelator of Fe<sup>3+</sup> from Fe<sup>3+</sup>-Transferrin Is ATP a Major Fe<sup>3+</sup> Carrier. **R.E. Cowart, T.B. Shaffer, R.D. O'Hara, J.A. Campbell, L.L. Schneider-Tugan, S.K. Binz, M.A. Pope, R.B. Gregory.** University of Dubuque and Lindenwood University. (799.1)
- 3:30 A New Membrane Potential ( $\delta\psi$ )-Independent Iron Indicator Selectively Detects Mitochondrial Chelatable Iron but Not Calcium in Living Cells. **J. Hu, A-L. Nieminen, A. Kholmukhamedov, C.C. Lindsey, C.C. Beeson, J.J. Lemasters.** Medical University of South Carolina. (657.6)

**391. PROTEIN FOLDING: EVERY WHICH WAY BUT LOOSE****Symposium**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: J.E. KIM

- 2:30 Modulation of Fluorescent Protein Chromophore to Detect Protein Aggregation. **Y. Liu, C. Wolstenholme, G. Carter, C. Hoelzel, L. Grainger, M. Fares, X. Zhang.** Pennsylvania State University. (794.6)
- 2:45 The Amyloid- $\beta$  Peptide in Alzheimer's Disease: Molecular Interactions and Structure Conversions. **A. Gräslund.** Stockholm University, Sweden. (795.11)
- 3:00 The Disordered Landscape of the 20s Proteasome Substrates and the Mechanism of Their in Vitro and in Vivo Degradation. **Y. Shaul, N. Myres, A. Biran, N. Reuven.** Weizmann Institute of Science, Israel. (795.14)
- 3:15 A Nucleotide-Dependent Switch in Proteasome Assembly Mediated by the Nas6 Chaperone. **S. Park, F. Li, V. Sokolova.** University of Colorado Boulder. (526.41)
- 3:30 Biophysical Analysis of Human Neuropeptide Y: Mutations in the Hairpin Core Reveal Unusual Thermal Stability Linked to Higher-Order Self-Association. **M.M. Hopkins, D.L. Bain.** University of Colorado Anschutz Medical Campus. (792.28)

**392. STRUCTURE AND MECHANISM IN NATURAL PRODUCT BIOSYNTHESIS ENZYMES****Symposium**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAired: A.K. BOAL

- 2:30 Transport and Synthesis of a Bacterial Natural Product. **L.M. K. Dassama, G.E. Kenney, A.C. Rosenzweig.** Boston Children's Hospital, Dana-Farber Cancer Institute, and Harvard Medical School and Northwestern University. (796.1)
- 2:45 Comparative Analysis of Bacterial Cytochromes P450 Involved in the Biosynthesis of 16-Membered Ring Macrolide Antibiotics. **M.D. DeMars, S. Yang, F. Sheng, N.L. Samora, S. R. Park, A.N. Lowell, K.N. Houk, L.M. Podust, D.H. Sherman.** University of Michigan, University of California, Los Angeles, University of California and San Diego. (529.4)
- 3:00 Structural Insights into Peptide Recognition and Modification by the Radical SAM Enzyme SuiB. **K.M. Davis.** Princeton University. (796.9)
- 3:15 Biosynthesis of Oxetanocin: Are Two Cofactors Better Than One? **J. Bridwell-Rabb, H-w. Liu, A. Zhong, C. Drennan.** University of Michigan, The University of Texas and Massachusetts Institute of Technology. (796.25)
- 3:30 **392.1** A Crystallographic View of the Reaction Cycle in Iron(II) and 2-(Oxo)-Glutarate-Dependent Oxygenases. **A.K. Boal.** Pennsylvania State University.

**393. TOOLS FOR EXPLORING GLYCOBIOLOGY****Symposium**

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAired: K. GODULA

- 2:30 Engineering Synthetic Glycan Co-Receptors Into the Glycocalyx of Muscle Cells to Control Early Stages of Neuromuscular Junction Development. **K. Godula.** University of California and San Diego. (673.21)
- 2:45 Encoding and Estimating the Remarkable Diversity of Possible Sialyltrisaccharides in Nature. **A. Sasmal, Z. Khedri, S. Diaz, N. Lewis, A. Varki.** University of California and San Diego. (673.22)
- 3:00 System Metaglycomes: Mapping Dynamic Cell Surface N-Glycome, O-Glycome and Glycolipidome by Mass Spectrometry. **M. Barboza, M. Wong, J. Luke, Z. Cheng, G. Xu, M. Gareau, H. Raybould, C.B. Lebrilla.** University of California, Davis. (673.11)
- 3:15 Glycosense™: A Rapid Method for Monitoring *in Vitro* Glycoengineering. **L. Yang, M.J. Saunders, K.N. Samli, R.J. Woods.** Lectenz Bio and University of Georgia. (544.20)
- 3:30 **393.1** Synthesis of Bioorthogonal Muramyl Glycans That Illuminate and Track Bacterial Peptidoglycan. **K.E. DeMeester, H. Liang, Z. Jones, J.A. Taylor, M.S. Siegrist, N.R. Salama, C.L. Leimkuhler-Grimes.** University of Delaware, Fred Hutchinson Cancer Research Center and University of Massachusetts Amherst.

**394. NOVEL ANTIBIOTICS & ALTERNATIVES****Symposium**

TUES. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAired: D. HASSETT

- 3:00 A non-toxic "two-headed monster" that kills all bacteria. **Dan Hassett.** Univ. of Cincinnati.
- 3:25 Predatory Bacteria Our New Ally in the Fight Against Infection. **Daniel Kadouri.** Rutgers Univ.
- 3:50 Antibiotic Adjuvants Based Upon Marine Natural Products. **Christian Melander.** NC State Univ.
- 4:15 New Drugs for Old Bugs. **Vanessa Sperandio.** UT Southwestern Med. Ctr.
- 4:40 General discussion.

**395. CELL STRESS, AUTOPHAGY AND MITOPHAGY****Symposium**

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAired: F. ZHANG

- 4:00 IL-6 and Bile Acids Are Skin-Derived Factors That Regulate Whole-Body Metabolism in SCD1 Deficient Mice. **S.N. Dumas, C-A. Guo, J.M. Ntambi.** University of Wisconsin—Madison. (539.10)

- 4:15 Posttranslational Arginylation Enzyme Ate1 Is a Mitochondrial-Derived Master Regulator That Coordinates Glycolysis and Respiration in the Warburg Effect. **F. Zhang, C. Jiang, D. Patel, B. Moorthy, A. Kumar, M. Birnbaum, J. Huang, A. Barrientos, T. Lampidis, F. Fontanesi.** University of Miami. (791.19)
- 4:30 Autophagy Modulates Lipid Metabolism to Support Liver Kinase B1 (LKB1)-Deficient Lung Tumor Growth. **V.D. Bhatt, Z. Hu, X. Su, J. Y. Guo.** Rutgers University. (811.4)
- 4:45 Zylflamend Induces Apoptosis in Pancreatic Cancer Cells via Modulation of Endoplasmic Reticulum Stress and Autophagy. **D. Puckett, D. Alani, S. Chahed, V. Frankel, J. Whelan, A. Bettaieb.** University of Tennessee and Knoxville. (664.1)
- 5:00 Oleic Acid Protected Pancreatic  $\beta$ -Cell Against Saturated Fatty Acid Induced Lipotoxicity. **X. Liu, X. Chen, L. Li, R. Luo, D. Long, Y. Lu, Y. Chen.** West China Hospital and Sichuan University, People's Republic of China. (812.32)

### 396. CHROMATIN, REPLICATION AND REPAIR

#### Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAired: S. FORSBURG

- 4:00 Heterochromatin Proteins Influence the Choice of DNA Repair in Euchromatin Domains. **S. Forsburg, A. Jensen, C. Jones, T-T. Li, J-P. Yuan.** University of Southern California. (786.14)
- 4:15 Rad53p Activation Alters Chromatin Structure, Induces Respiration and Elevates Cellular ATP Level. **P. Bu, A. Shah, J. Zeng, M.S. Bhagwat, S. Nagar, A. Vancura.** St. John's University. (523.11)
- 4:30 Analysis of CoREST Complex-Chromatin Interactions with Chemical Tools. **M. Wu, D. Hayward, J.H. Kalin, Y. Song, J. Schwabe, P.A. Cole.** Brigham and Women's Hospital and Harvard Medical School, Johns Hopkins University School of Medicine and University of Leicester, United Kingdom. (524.7)
- 4:45 Structure of Eukaryotic CMG Helicase at a Replication Fork and Implications for Replisome Architecture and Origin Initiation. **Z. Yuan, R. Georgescu, B. Lin, R.d. L.A. Santos, D. Zhang, O. Yurieva, M. O'Donnell, H. Li.** Van Andel Institute and Rockefeller University. (646.7)
- 5:00 **396.1** Deconstructing Lagging-Strand Synthesis *in Vivo*. **D. Smith.** New York University.

### 397. ENGINEERING BIOLOGY

#### Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAired: A. CHATTERJEE

- 4:00 Engineering Yeast Endosymbionts as a First Step Towards Laboratory Evolution of Mitochondria. **A. Mehta, L. Supekova, F. Supek, P. Schultz.** Scripps Research Institute and The Genomics Institute of the Novartis Research Foundation. (530.3)
- 4:15 Base Editing: Chemistry on the Genome. **A.C. Komor.** University of California and San Diego. (649.6)
- 4:30 Identifying the Substrate Proteins of E3 Ubiquitin Ligase by Orthogonal Ubiquitin Transfer (OUT). **J. Yin, Y. Wang, K. Bhuripanyo, G. Chen, L. Zhou, R. Liu, H. Zhou.** Georgia State University. (654.13)
- 4:45 Mini-Ins: A Monomeric Human Insulin Inspired from Cone Snail Venom Peptides. **D. Chou.** University of Utah. (798.16)
- 5:00 **397.1** Development and Applications of Universal Platforms for Genetic Code Expansion. **A. Chatterjee, J.S. Italia.** Boston College.

### 398. HIGH-THROUGHPUT METHODS FOR CONNECTING TRANSCRIPTOMES, PROTEOMES, AND SECRETOMES

#### Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAired: S. ZHONG

- 4:00 A System for Global Analysis of Correlation Between Protein Expression and mRNA. **K. Johnson, S. Zhong.** University of California and San Diego. (651.10)
- 4:15 Interactome Mapping of the Pathogen *Helicobacter pylori* Using All-vs-All Sequencing (Ava-Seq). **S. Ramadan, S. Andrews, N. Al-Thani, I. Ahmed, J. Malek.** Weill Cornell Medicine-Qatar, Qatar. (652.4)
- 4:30 Genome-Scale Reconstructions of the Mammalian Secretory Pathway Predict Metabolic Costs and Limitations of Protein Synthesis and Secretion. **N. Lewis.** University of California and San Diego. (526.18)
- 4:45 Functional Somatic Noncoding ncRNA of Extracellular Vesicles (EV) for Vascular Epigenetics: A Genomic Crossword Puzzle in Adaptation of Cells Under Stress. **J.H. Wissler.** ARCONS Institute for Applied Research and Didactics, Germany. (787.23)
- 5:00 Localized Single Transcript Detection of EML4-ALK in NSCLC Using Co-Localization Quantum Dot Fluorescent *In Situ* Hybridization (Coqfish). **N. Huang, Y. Jiang, S. Zhong.** University of California and San Diego. (532.7)

## 399. MOLECULAR BASIS OF SIGNALING

## Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAired: K. GEHRING

- 4:00 Regulation of Mitophagy by the Parkin Ubiquitin Ligase and PINK1 Ubiquitin Kinase. **K. Gehring**. McGill University, Canada. (654.11)
- 4:15 Protein Kinase C $\alpha$  (PKC $\alpha$ ) Gain-of-Function Variant in Alzheimer's Disease Displays Enhanced Catalysis by a Mechanism That Evades Down-Regulation. **J. Callender, Y. Yang, N. Stephenson, A. Jones, J. Brognard, A. Newton**. University of California, San Diego, Cancer Research UK Manchester Institute, United Kingdom, National Cancer Institute at Frederick and National Institutes of Health. (662.7)
- 4:30 Novel Crystal Structure of Calcium Independent Phospholipase iPLA2 $\beta$ : Mechanism of Activity Regulation and Membrane Localization. **S. Korolev, O. Koroleva, K. Malley**. Saint Louis University School of Medicine. (672.2)
- 4:45 Chemoproteomic Discovery of Ligand Binding Hotspots in the Lipid Kinome. K-L. Hsu. University of Virginia. (540.1)
- 5:00 Sac1 Degrades Its Lipid Substrate Ptdins4P in the Er to Maintain a Steep Electrochemical Gradient on Donor Membranes. **G. Hammond, J. Zewe, S. Sangappa, R. Wills, B. Goulden**. University of Pittsburgh. (814.10)

## 400. NUTRITION, GENETICS AND METABOLISM

## Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAired: C-L.E. YEN

- 4:00 Decreased Consumption of Specific Dietary Macronutrients Restores Metabolic Health to Diet-Induced Obese Mice. **D.W. Lamming, N.E. Cummings, H. Pak, E.M. Williams, E.N. Konon, M.M. Walter, M.E. Barnes, D. Yu**. University of Wisconsin—Madison. (812.30)
- 4:15 **400.1** Leveraging Mouse Liver Co-Expression Networks and Human Lipid GWAS Data to Identify and Validate Cholesterol Metabolism Genes. **B.W. Parks, Z. Li, J. Nguyen, F. Leyva-Jaimes**. University of Wisconsin—Madison.
- 4:30 Selenium and Sex: Competition Between Brain and Testes for Selenium Results in Male-Specific Consequences in Mice and Men. **M.J. Berry, M. Pitts, P. Kremer, A. Hashimoto, L. Seale, A. Ogawa-Wong, D. Torres**. University of Hawaii. (812.46)
- 4:45 Long-Chain Acyl-CoA Synthetase 6 Deficiency Reduces the Omega-3 Fatty Acid DHA in the Brain and Disrupts Motor Control. **J.M. Ellis, R.F. Fernandez, Y. Zhao, J.L. Counihan, D.K. Nomura, J.A. Chester**. Purdue University and University of California. (539.21)
- 5:00 **400.2** Triacylglycerol Synthesis, Energy Metabolism, and Glucose Homeostasis: A Gut Reaction? **C-L E. Yen, D. Nelson, M-I. Yen, D. Amador-Noguez, K. Veldkamp**. University of Wisconsin—Madison.

## 401. RIBOSOMES AND TRANSLATIONAL REGULATION

## Symposium

TUES. 4:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAired: S. VASUDEVAN

- 4:00 High Throughput Discovery of Novel Regulators of Human Ribosome Biogenesis. **S.J. Baserga, K.I. Farley-Barnes, K. McCann, L. Ogawa, J. Merkel, Y. Surovtseva**. Yale University School of Medicine, Yale School of Medicine and National Institute of Environmental Health Sciences, National Institutes and Yale West Campus. (526.25)
- 4:15 Pervasive, Coordinated Protein Level Changes Driven by Transcript Isoform Switching. **G. Brar, G. Otto, Z. Cheng, E. Powers, A. Keskin, M. Jovanovic**. University of California, Berkeley and Columbia University. (651.9)
- 4:30 Regulation of Protein Translation Initiation by Estrogen. **M.K. Holz**. Yeshiva University. (651.3)
- 4:45 A Post-Transcriptional Program of Chemoresistance Regulators in Quiescent Cancer Cells. **S. Vasudevan, S. Lee, S.I. A. Bukhari, S.S. Truesdell, M. Boukhali, D. Lee, M.A. Mazzola, R. Raheja, A. Langenbucher, N.J. Haradhvala, M. Lawrence, R. Gandhi, D. Sweetser, W. Haas**. Massachusetts General Hospital and Harvard Medical School and Brigham and Women's Hospital. (651.12)
- 5:00 Novel *in-Vitro* Tag-and-Modify Protein Sample Generation Methods for Multiplexed Single-Molecule FRET Screening. **K.M. Hamadani, N. Hite, J.J. Howe**. California State University and San Marcos. (792.39)
- 5:15 **401.1** How ribosomes stop protein synthesis without a stop codon. **H. Jin, F. Zeng**, Univ. of Illinois at Urbana-Champaign.

## 402. ASBMB WOMEN SCIENTISTS MENTORING AND NETWORKING EVENT

## Society Events

TUES. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAired: K. ALLEN

COCHAired: K. TEN HAGEN AND S. BASERGA

## Career and Professional Development

## Workshops &amp; Events

Join us in discussing strategies for career advancement and how to successfully promote oneself. We will also discuss ideas about the formation of a new advocacy group within the ASBMB to promote the career trajectories and professional growth of all women biochemists at all career stages (Women in Biochemistry and Molecular Biology or WIBMB).

All ASBMB members and biochemistry registrants welcome.

## Pathology

### 403. ASIP COTRAN EARLY CAREER INVESTIGATOR AWARD LECTURE

In Conjunction with the SCVP Symposium: Non-Conventional Players in Heart Disease

#### Lecture

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

#### Award Lectures

#### Cardiac Pathobiology

#### Immunopathology

- 8:30 T-cell Immune Responses and Cardiotropism in Heart Failure. **P. Alcaide**. Tufts Univ. School of Medicine Medical School.

### 404. SCVP SYMPOSIUM: NON-CONVENTIONAL PLAYERS IN HEART DISEASE

#### Symposium

(Sponsored by the ASIP and the Society for Cardiovascular Pathology)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: J. STONE

COCHAired: T. PARRY

#### Cardiac Pathobiology

#### Cardiovascular

- 9:30 Cardiomyocytes Initiate Inflammation and Contribute to Remodeling in Non-ischemic Heart Disease through the Activity of CaM Kinase II. **J. Brown**. UCSD.
- 10:10 Differential Cellular Impact of BAR signaling on Cardiac Function and Repair. **D. Tilley**. Lewis Katz School of Medicine, Temple Univ.
- 10:50 Mitochondrial Quality Control in Heart Failure. **A. Gustafsson**. UCSD.

### 405. ACVP-IEPC SYMPOSIUM: VECTOR-BORNE DISEASES: BRIDGING SCALE

#### Symposium

(Sponsored by the ASIP and the American College of Veterinary Pathologists)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: A.S. DAVIS

COCHAired: N. GOTTDENKER

#### Bacteria, Parasitology, Microbiome, Antibiotics

#### Environmental and Toxicologic Pathology

- 8:30 Tissue and Cellular Tropism of Rift Valley Fever Virus in Sheep. **L. Odendaal**. Univ. of Pretoria.
- 9:15 Virus-Vector-Host Interactions in Vector-Borne Diseases. **B. Drolet**. United States Department of Agriculture.

- 10:00 Chagas Disease Transmission in Fragmented Forest Landscapes. **N. Gottdenker**. Univ. of Georgia College of Veterinary Medicine.

- 10:45 Experimental Approaches to Studying Impacts of Global Climate Change on Mosquito Borne Disease Transmission. **C. Murdock**. Univ. of Georgia College of Veterinary Medicine.

### 406. PATHOGENESIS OF TISSUE INFLAMMATION: NEW MOLECULES AND MECHANISMS

#### Symposium

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: S. KEELY

COCHAired: A. NEISH

#### Inflammation/Immunity

#### Cell and Tissue Injury

#### Immunopathology

- 8:30 **406.1** Platelet Activating Factor Receptor (PAFR) Regulates Colitis-Induced Pulmonary Inflammation. **G. Liu, S. Mateer, A. Mathe, B. Goggins, A. Hsu, K. Minahan, J. Bruce, M. Fricker, P. Wark, P. Hansbro, S. Keely**. Hunter Medical Research Institute and University of Newcastle, Australia.
- 8:45 **406.2** The Influence of High Fiber Diet and Probiotic Supplementation in a Murine Model of Colitis. **J. Owens, B. Saeedi, T. Darby, R. Jones**. Emory University.
- 9:00 **406.3** The Metabolomic Signature of *Giardia* Sp. **T. Allain, R. Groves, I.A. Lewis, A.G. Buret**. University of Calgary, Canada.
- 9:15 **406.4** Diets Rich in Stearidonic Acid Impact on Joint Inflammation in a Murine Model of Rheumatoid Arthritis. **M.S. Doucet, N.E. Pichaud, L.H. Boudreau, M.E. Surette**. Université de Moncton, Canada.
- 9:30 **406.5** Tumor Nuclear *YAP1* Expression Status and Molecular Characteristics in Relation to Immune Response to Colorectal Carcinoma. **J. Borowsky, C. Du, K. Kosumi, T. Hamada, T. Morikawa, A.d. Silva, K. Noshio, J.A. Nowak, R. Nishihara, J.K. Lennerz, M. Giannakis, A.T. Chan, J.A. Meyerhardt, C.S. Fuchs, S. Ogino**. Dana-Farber Cancer Institute, Dana-Farber Cancer Institute and Harvard Medical School, The University of Tokyo, Japan, Sapporo Medical University School of Medicine, Japan, Brigham and Women's Hospital and Harvard Medical School, Massachusetts General Hospital and Harvard Medical School and Yale Cancer Center.
- 9:45 **406.6** Corticotrophin Releasing Hormone Regulates NLRP6 and Disrupts Mucosal Homeostasis in Functional Dyspepsia. **J. Bruce, G. Burns, A. Mathe, N. Koloski, P.S. Foster, M.M. Walker, N.J. Talley, S. Keely**. University of Newcastle, Australia.
- 10:00 **406.7** Protein Kinase R Modulates Nlrp3 Inflammasome in Cardiac Fibroblasts in Sepsis. **X. Xu, A. Tao, R. Kao, C. Martin, T. Rui**. Lawson Health Research Institute, Canada and The Affiliated People's Hospital of Jiangsu University, People's Republic of China.
- 10:15 **406.8** PRAP1: A Novel Epithelial Secreted Protein. **A. Wolfarth, A. Neish**. Emory University.

- 10:30 **406.9** RGDSK Peptide Functionalized Helical Rosette Nanotubes (RGDSK-HRNs) Inhibit *E. coli* Adherence to Jejunal Epithelium by Blocking Integrin  $\alpha v\beta 3$ . **N.P. K. Le, C.C. Quach, G. Aulakh, V. Gerdt, H. Fenniri, B. Singh.** Western College of Veterinary Medicine, University of Saskatchewan, Canada and Northeastern University.
- 10:45 **406.10** Regulation of HMGB1 in Hepatocytes by MYD88 and Type-I Interferon (IFN-I) During *Ehrlichia*-Induced Acute Liver Injury. **M. Kader, M. Scott, C. Yates, N. Ismail.** University of Pittsburgh School of Medicine and University of Pittsburgh School of Nursing
- 11:00 **406.11** A Discovery Platform to Identify Novel Beneficial Bacteria. **T. Darby, J. Owens, B. Saeedi, L. Luo, B. Robinson, R. Jones.** Emory University.
- 11:15 **406.12** Describing the Molecular Mechanism by Which the A2 Protein Improves Survival in Mice with Endotoxemia. **M. Martinez, Q. Da, T.A. Fisipe, M.A. Cruz.** Baylor College of Medicine.

#### 407. CARCINOGENESIS: MODELS, MECHANISMS, AND MODULATORS

##### Symposium

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: S.A. OAKES

COCHAired: G. POST

##### Neoplasia

##### Cancer and Therapy

In Conjunction with the Molecular and Cellular Basis of Cancer Program

- 8:30 **407.1** Anti-Cancer Activity of Non-Pungent Capsaicin Analogs: A Structure-Activity Study. **J.R. Friedman, R.S. Gadapalli, A.T. Akers, N.A. Nolan, K.C. Brown, K.W. Colclough, S.L... Miles, J.M. Rimoldi, P. Dasgupta.** Joan C. Edwards School of Medicine, Marshall University and University of Mississippi.
- 8:45 **407.2** Prion Protein Is Required for Tumor Necrosis Factor Alpha (TNF $\alpha$ )-Triggered Nuclear Factor Kappa B (NF- $\kappa$ B) Signaling and Cytokine Production. **C. Li.** Wuhan Institute of Virology and Chinese Academy of Sciences, People's Republic of China.
- 9:00 **407.3** *Bifidobacterium* Genus in Colorectal Carcinoma Tissue in Relation to Tumor Characteristics and Patient Survival. **J. Borowsky, K. Kosumi, T. Hamada, H. Koh, S. Bullman, T.S. Twombly, Y. Masugi, L. Liu, A. da Silva, Y. Chen, C. Du, M. Gu, C. Li, W. Li, H. Liu, Y. Shi, M. Song, K. Nosh, J.A. Nowak, R. Nishihara, H. Baba, X. Zhang, K. Wu, C. Huttenhower, W.S. Garrett, M. Meyerson, J.K. Lennerz, M. Giannakis, A.T. Chan, J.A. Meyerhardt, C.S. Fuchs, S. Ogino.** Dana-Farber Cancer Institute and Harvard Medical School, Harvard T.H. Chan School of Public Health, Sapporo Medical University School of Medicine, Japan, Brigham and Women's Hospital and Harvard Medical School, Kumamoto University, Japan, Broad Institute of Massachusetts Institute of Technology and Harvard, Massachusetts General Hospital and Harvard Medical School and Yale Cancer Center.
- 9:15 **407.4** Search for Hidden Germline Mutations in Bilateral Retinoblastoma. **O. Okonkwo.** University of Pennsylvania.

- 9:30 **407.5** BZW1 Is an Independent Prognosis Marker for Non-Small-Cell Lung Cancer. **J. Chiou, M. Hsiao.** Academia Sinica, Taiwan.
- 9:45 **407.6** Peri-Arteriolar Glioblastoma Stem Cell Niches Express Bone Marrow Hematopoietic Stem Cell Niche Proteins. **V. Hira.** Cancer Center Amsterdam and VUmc, Netherlands.
- 10:00 **407.7** Identification and Characterization of TGF-Beta-Induced Long Noncoding RNAs in Lung Cancer. **T-C. Lai, M. Hsiao.** Academia Sinica, Taiwan.
- 10:15 **407.8** Patient-Derived and Cell Line Xenograft Growth in the B6;129-*Rag2*<sup>tm1Fwa</sup>*IL2rg*<sup>tm1Rsky</sup>/DwlHsd (R2g2) Mouse Model. **J. Naden.** Envigo.
- 10:30 **407.9** Transient Downregulation of Indoleamine 2,3-Dioxygenase (IDO) Is Critical for Bladder Cancer Cell Invasion. **H. J.S. P. Santos, S.V. Dalmazzo, L. H.G. Matheus, L.A. Pereira, M.B. Floriani, H. Dellé.** Universidade Nove de Julho, Brazil.
- 10:45 **407.10** From RNASeq to Immunohistochemistry: Keratin 17 Defines Pancreatic Cancer Subtypes. **L. Roa-Peña, E.A. Vanner, A. Akalin, J. Bandovic, R.A. Moffitt, C. Iacobuzio-Donahue, L.F. Escobar-Hoyos, K.R. Shroyer.** Stony Brook Medicine, University of Massachusetts Medical School Memorial Medical Center and Memorial Sloan Kettering Cancer Center.
- 11:00 **407.11** Identification of a Novel Phenotype of Myeloid Cells in Classical Hodgkin Lymphoma. **G.R. Post, Y. Yuan, S.R. Post.** University of Arkansas for Medical Sciences.
- 11:15 **407.12** Pancreatic Neuroendocrine Tumors Require Homeostatic Signaling from the Unfolded Protein Response. **S.A. Oakes, P.C. Moore, J.Y. Qi, R. Warren, M. Thamsen, R. Ghosh, M.J. Gliedt, A. Hiniker, G.E. Kim, D.J. Maly, B.J. Backes, F.R. Papa.** University of California, San Francisco and University of Washington.

#### 408. ASIP SCIENTIFIC SLEUTHING OF HUMAN DISEASE FOR UNDERGRADUATE STUDENTS AND HIGH SCHOOL TEACHERS AND STUDENTS

##### Workshop

(Sponsored by: the ASIP Education Committee)

TUES. 9:30 AM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARINA BALLROOM SALON G

CHAired: K. NEJAK-BOWEN

COCHAired: M. FURIE

##### Workshops & Events

##### Pulmonary Pathobiology

##### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

##### Bacteria, Parasitology, Microbiome, Antibiotics

- 10:00 Welcome and Introductions. **K. Nejak-Bowen.** Univ. of Pittsburgh.
- 10:25 Menacing Microbes: The Threat of Bioterrorism. **M. Furie.** Stony Brook Univ.
- 11:15 Break.
- 11:25 Smoking-Related Lung Disease in 3D: Not Your Standard Lecture. **D. Zander.** Univ. of Cincinnati Medical Ctr.
- 12:10 Specimen Viewing.

- 12:40 Stem Cells: A Case of Dr. Jekyll and Mr. Hyde. **S. Monga**. Univ. of Pittsburgh.  
 1:30 Visit the Exhibit Hall.

#### 409. LUNCH AND LEARN: SCIENCE, STATISTICS AND GETTING IT RIGHT

##### Society Events

(Sponsored by: the ASIP Education Committee)

TUES. 11:45 AM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARINA BALLROOM SALON F

##### Workshops & Events

##### Digital and Computational Pathology

Registration Required

- 11:45 An interactive lunch session will include an opportunity for participants to review case vignettes featuring common problems in scientific research statistics followed by a presentation and discussion with statistical faculty. **D. Milner**. American Society for Clinical Pathology.

#### 410. THE HISTOCHEMICAL SOCIETY (HCS) JOURNAL OF HISTOCHEMISTRY AND CYTOCHEMISTRY MEET THE EDITOR

##### Society Events

TUES. 12:00 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, BOOTH 320

##### Workshops & Events

##### Imaging, Immunohistochemistry and Microscopy

#### 411. ASIP OUTSTANDING INVESTIGATOR AWARD LECTURE

In Conjunction with the Symposium: What's the Big Deal About Big Data: Mining Molecular Epidemiology for Insights into Pathogenesis

##### Lecture

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 2

##### Award Lectures

##### Digital and Computational Pathology

##### Immunopathology

- 2:00 Integrative Immunology-MPE (Molecular Pathological Epidemiology): Frontier for Pathobiological Discovery from Big Data. **S. Ogino**. Brigham & Women's Hospital, Dana-Farber Cancer Inst., Harvard School of Public Health.

#### 412. WHAT'S THE BIG DEAL ABOUT BIG DATA: MINING MOLECULAR EPIDEMIOLOGY FOR INSIGHTS INTO PATHOGENESIS

##### Symposium

TUES. 3:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 2

CHAired: W.B. COLEMAN

COCHAired: M. SOBEL

##### Digital and Computational Pathology

##### Cancer and Therapy

- 3:00 Divining the 'Om' in 'Omics': Making Actionable Sense out of a Mountain of Data. **A. Chinnaiyan**. Univ. of Michigan.  
 4:00 Computational Biology and the Microbiome: Predicting Therapeutic Responses to Infectious Assaults. **G. Gerber**. Harvard Univ.

#### 413. SIPMET SYMPOSIUM: IMMUNOPATHOGENESIS OF CANCER—FROM BASIC KNOWLEDGE TO MARKERS FOR CANCER DIAGNOSIS AND THERAPEUTICS

##### Symposium

(Sponsored by the ASIP and the Società Italiana di Patologia e Medicina Traslazionale /Italian Society of Pathology and Translational Medicine )

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 3

CHAired: M. LOCATI

##### Neoplasia

##### Immunopathology

##### Cancer and Therapy

- 2:00 Leveraging the Immune System in the War on Cancer. **D. Hansel**. Univ. of California, San Diego.  
 3:00 Activation and Biological Properties of Tumor Associated Macrophages. **M. Locati**. Univ. of Milan.  
 4:00 Immune Editing and Surveillance in Breast Cancer. **J. Bui**. Univ. of California, San Diego.

#### 414. MATRIX, MUCOSA, AND INFLAMMATION: AN UNEASY ALLIANCE

##### Symposium

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 4

CHAired: A. NUSRAT

COCHAired: R. JONES

##### Inflammation/Immunity

##### Matrix Pathobiology

##### Epithelial and Mucosal Pathobiology

- 2:00 **414.1** Galectin-9 Is a Novel Modulator of Epithelial Restitution. **B.S. Robinson, B. Saeedi, C. Naudin, C. Arthur, T. Darby, R. Jones, S. Stowell, A. Neish**. Emory University.

- 2:15 **414.2** Bi-Directional Macrophage-Fibroblast Crosstalk Directs Wound Resolution Factors. **Z.I. Johnson, S. LoPresti, B. Lantonio, A. Wells, N. Ismail, B.N. Brown, C.C. Yates.** University of Pittsburgh.
- 2:30 **414.3** Elevated Thrombospondin-2 Contributes to Delayed Wound Healing in Diabetes. **B. Kunkemoeller, T.R. Kyriakides.** Yale University.
- 2:45 **414.4** Consecutive, but Not Concurrent, Cathepsin Incubation with Type I Collagen Results in Extended Proteolysis. **A.N. Parks, J.S. Temenoff, M.O. Platt.** Georgia Institute of Technology.
- 3:00 **414.5** Fibrokin™ Peptides: A Broad-Spectrum of Anti-Fibrotic Chemokine Peptides to Treat Organ Fibrosis. **C.C. Yates, Z.I. Johnson, M.S. Willis, J. Jayne.** University of Pittsburgh, University of North Carolina School of Medicine and Tuskegee University.
- 3:15 **414.6** TNF- $\alpha$  Mediated  $\beta$ 1 Integrin Inactivation Is a Novel Mechanism Mediating Left Ventricular Dilatation. **G.L. Brower, J.A. Stewart; Jr.** Texas Tech University Health Sciences Center and The University of Mississippi.
- 3:30 **414.7** Inflammatory Mediators and Fibroblasts. **L.T. James, T.A. Reaves.** Medical University of South Carolina.
- 3:45 **414.8** TRPV4 Channels Regulates Matrix Stiffness and TGF $\beta$ 1-Induced Epithelial-Mesenchymal Transition. **S.O. Rahaman, S. Sharma, R. Goswami.** University of Maryland.
- 4:00 **414.9** Mechanosensitive TRPV4 Channel Is Involved in Fibrotic Transdifferentiation of Retinal Pigment Epithelial Cells. **S. Tamiya, K. McDonald, S. Ueda.** University of Louisville.
- 4:15 **414.10** Personalized Gene Expression Profile Information Predicts Severity of Systemic Sclerosis Despite Heterogeneity of Disease. **Z.I. Johnson, T. Medsger, T. Li, C. Feghali-Bostwick, Y. Conley, C.C. Yates.** University of Pittsburgh, AccuraScience and Medical University of South Carolina.
- 2:45 **415.4** Non Parenchymal Wnts Regulate Beta-Catenin Signaling in Murine Liver Zonation and Regeneration. **M. Preziosi, H. Okabe, M. Poddar, S. Singh, S. Monga.** University of Pittsburgh.
- 3:00 **415.5** Upregulation of Stromal-Derived Factor-1 by Hypoxia Requires Hypoxia-Inducible Factor-1 $\alpha$  and Transforming Growth Factor-1. **J.D. Strickland, D. Garrison, B. Copple.** Michigan State University.
- 3:15 **415.6** Pde4 Inhibitor Rolipram Mitigates Liver Ischemia Reperfusion Injury in a Rat Model by Preventing Neutrophil Accumulation. **J. Frimodig, A. Matheson, C. McClain, P. Matheson.** University of Louisville.
- 3:30 **415.7** Hepatocyte Specific Ablation of  $\beta$ - and  $\gamma$ -Catenin Leads to Altered Hepatocyte Polarity and Microvillae Association. **T. Pradhan, A. Adebayo, L. Molina, S. Pal Monga.** University of Pittsburgh.
- 3:45 **415.8** Deletion of MicroRNA-34a Alleviates Endothelial Dysfunction and Inflammatory Response During Experimental Cholestasis. **F. Meng, T. Zhou, H. Francis, G. Alpini.** Baylor Scott & White Healthcare and Texas A&M College of Medicine.
- 4:00 **415.9** Treatment of a Mouse Model of Cholestasis with a Thyromimetic Improves Biliary Injury but Exacerbates Hepatocyte Injury. **K. Kosar, K. Nejak-Bowen.** University of Pittsburgh School of Medicine and University of Pittsburgh.
- 4:15 **415.10** Opposite Effects of Knocking Out MT1 and MT2 Melatonin Receptor on Senescence and Fibrosis of Cholangiocytes and Hepatic Stellate Cells During Cholestatic Liver Injury. **N. Wu, K. Kyritsi, J. Venter, F. Meng, P. Invernizzi, F. Francesca Bernuzzi, K. Sato, E. Gaudio, T. Zhou, H.L. Francis, P. Onori, A. Franchitto, G. Alpini, S.S. Glaser.** Texas A&M Health Science Center, Baylor Scott & White Health, Humanitas Clinical and Research Center, Italy, Histological, and Forensic Medicine and Orthopedic Sciences, Italy and Eleonora Lorillard Spencer Cenci Foundation, Italy.
- 4:30 **415.11** Loss of Histamine Signaling Reduces Biliary and Hepatic Damage, Mast Cell Migration and Tumor Formation in 52-Wk Old Multidrug Resistance-2 Knockout Mice. **L. Kennedy, J. Demieville, L. Hargrove, V. Meadows, H. Francis.** Texas A&M Health Science Center/College of Medicine and Central Texas Veterans Health Care System.
- 4:45 **415.12** Shp2/PTPN11 Deletion Suppresses Liver Tumorigenesis Driven by Met,  $\beta$ -Catenin and Pik3ca. **J. Liu.** University of California and San Diego.

## 415. LIVER REGENERATION, CHOLESTATIC INJURY, AND CANCER

### Symposium

TUES. 2:00 PM—SAN DIEGO CONVENTION CENTER, ROOM 5A

CHAired: S. GLASER

COCHAired: L. WANG

### Liver Pathobiology

#### Neoplasia

#### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

#### Cell and Tissue Injury

In Conjunction with the Molecular and Cellular Basis of Cancer Program

- 2:00 **415.1** Hepatocyte Specific Knockout of MicroRNA-21-5p Alleviates Acetaminophen-Induced Hepatotoxicity by Activation of Autophagy. **C. Xu, L. Wang.** Department of Physiology & Neurobiology and University of Connecticut.
- 2:15 **415.2** Acetaminophen-Induced Liver Injury in Mice Can Be Alleviated by Reducing Hepatic TGF $\beta$ 1 Signaling. **M. McMillin, S. Grant, G. Frampton, J. Kain, A. Petrescu, E. Williams, S. DeMorrow.** Central Texas Veterans Health Care System.
- 2:30 **415.3** Critical Role of Plasmin in Macrophage Activation During Liver Injury. **K. Roth, N. Joshi, R. Albee, J.P. Luyendyk, B. Copple.** Michigan State University.

## 416. CLUB HEPATOMANIA™ MEET THE EXPERTS

### Society Events

TUES. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 5A

### Liver Pathobiology

### Workshops & Events

## 417. SCIENTIFIC INTEREST GROUP (SIG) INTERACTIVE POSTER DISCUSSIONS

### Society Events

TUES. 5:30 PM—SAN DIEGO CONVENTION CENTER, BALLROOMS 20BC

### Workshops & Events

Interactive discussions of invited posters representing the SIGs of the ASIP

## Pharmacology

### 418. JULIUS AXELROD AWARD IN PHARMACOLOGY LECTURE

#### Lecture

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

#### Award Lectures

#### Cell Signaling, Signal Transduction

The Julius Axelrod Award was established in 1991 to honor the memory of the eminent American pharmacologist who shaped the fields of neuroscience, drug metabolism, and biochemistry and who served as a mentor for numerous eminent pharmacologists around the world. The Axelrod Award is presented for significant contributions to understanding the biochemical mechanisms underlying the pharmacological actions of drugs and for contributions to mentoring other pharmacologists.

- 8:30 Introduction.
- 8:35 Unraveling the Molecular and Structural Determinants of GPCR Functional Selectivity; Potential for Drug Discovery. **M. Bouvier.** Université de Montréal.

### 419. JULIUS AXELROD SYMPOSIUM: THE PLURIDIMENSIONALITY OF G PROTEIN-COUPLED RECEPTOR (GPCR) SIGNALING

#### Symposium

TUES. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAIRED: M. BOUVIER

COCHAIRED: A. SALAHPOUR

#### Cardiovascular

#### Drug Discovery and Development

#### Neuroscience

- 9:30 Introduction. **A. Salahpour.** Univ. of Toronto.
- 9:40 Intracellular Propagation of GPCR Signaling. **M. von Zastrow.** Univ. of California, San Francisco.
- 10:08 Study of the Biased Signaling and Trafficking of the Angiotensin II Type 1 Receptor. **S. Laporte.** McGill Univ.—MUHC.
- 10:36 A Pathogen Reveals Hidden Aspects of B2-Adrenergic Receptor Functioning. **S. Marullo.** Université Paris-Descartes-Institut Cochin.
- 11:04 Genome-Wide CRISPR Screens Reveal Wnt-Frizzled Functional Selectivity in Pancreatic Cancer. **S. Angers.** Univ. of Toronto.
- 11:32 GRKs and Arrestins-Based Bias in the Neuronal Function of GPCRs. **M. Caron.** Duke Univ.

### 420. 'BATH SALTS': THE EVER-CHANGING LANDSCAPE OF SYNTHETIC CATHINONES

(Sponsored by: La Jolla Alcohol Research, Inc.)

#### Symposium

(Co-Sponsored by: ASPET Division for Behavioral Pharmacology (BEH))

TUES. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAIRED: S. KOHUT

COCHAIRED: M.A. TAFFE

#### Behavioral Pharmacology

#### Neuroscience

#### Toxicology

- 9:30 Introduction. **S. Kohut.** Harvard Med. Sch.
- 9:35 Structure-Activity Relationships of 'Bath Salt' Constituents. **R. Glennon.** Virginia Commonwealth Univ.
- 10:05 In Vivo Pharmacology of Novel Synthetic Cathinones. **M. Gatch.** Univ. of North Texas Health Science Ctr.
- 10:35 Locomotor Stimulant and Rewarding Effects of Inhaled 'Bath Salts'. **J. Nguyen.** Scripps Research Inst.
- 10:50 Neurochemical Deficits Induced by Synthetic Cathinones. **A. Fleckenstein.** Univ. of Utah.
- 11:20 Reinforcing Effects of Novel Synthetic Cathinones and Their Mixtures. **G. Collins.** Univ. of Texas Health Science Ctr. at San Antonio.
- 11:50 Development and Preclinical Testing of a Vaccine for 3,4-Methylenedioxypyrovalerone (*R,S*)-MDPV) Substance Use Disorders. **S.J. McClenahan, C. Kormos, M. Gunnell, M. Hambuchen, P. Lamb, I. Carroll, A. Lewin, S.M. Owens.** University of Arkansas for Medical Sciences and Research Triangle Institute. (550.7)

### 421. CAN METABOLIC VULNERABILITIES IN TUMORS BE THERAPEUTICALLY EXPLOITED?

#### Symposium

(Sponsored by: ASPET Division for Cancer Pharmacology (DCP))

TUES. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAIRED: S. COLE

COCHAIRED: K. VAN DE WETERING

#### Cancer and Therapy

#### Metabolism and Metabolic Disease

#### Molecular Pharmacology

#### Translational and Clinical Pharmacology

- 9:30 Modulating the Oncogenic Phenotype with Metabolites. **G. Siuzdak.** The Scripps Research Inst.

- 10:01 Metabolic Transitions in Cancer: Lessons from Viral Infection. **H. Christofk**. Univ. of California, Los Angeles.
- 10:32 The Glutamate/Cystine Antiporter SLC7A11/xCT Regulates Glucose Dependency in Cancer Cells: Mechanism and Therapeutic Implications. **B. Gan**. The Univ. of Texas MD Anderson Cancer Ctr.
- 11:03 ABC5: A Multidrug Efflux Transporter with an Unusual Substrate Spectrum. **K. van de Wetering**. Thomas Jefferson Univ.
- 11:34 Raloxifene Compromises Mitochondria, Induces ROS Stress and the Unfolded Protein Response, and Synergizes Gemcitabine's Cytotoxicity in Pancreatic Cancer Cells. **H. True, J. Trinh, Q. Love, A. Badejo, D. Rao, A. Malhotra**. School of Pharmacy, Pacific University, College of Arts and Sciences and Pacific University. (835.6)
- 11:47 Molecular Targeting and Inactivation of Glutaminase and CDK4/6 in Mantle Cell Lymphoma. **B.E. Gibbs, C.P. Masamha**. Butler University. (566.11)

#### 422. CHALLENGES AND PROMISES OF CNS ORPHAN DRUG DEVELOPMENT: STORIES FROM BENCH TO CLINIC

##### Symposium

(Sponsored by: ASPET Division for Translational and Clinical Pharmacology (TCP))

TUES. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: D. DAVIES

COCHAired: J. PAUL

##### Translational and Clinical Pharmacology

##### Neuroscience

##### Drug Discovery and Development

- 9:30 Regulatory Considerations in Orphan Drug Development. **E. Pacifici**. Univ. of Southern California Sch. of Pharmacy.
- 9:55 Spinal Muscular Atrophy: An Overview from Genetics to Therapeutics. **K. Chen**. Spinal Muscular Atrophy Foundation.
- 10:20 Getting Rid of the Bad: HTT Lowering Therapeutics Development. **D. Macdonald**. CHDI Management / CHDI Foundation.
- 10:45 Translating Breakthrough Science Discoveries into Novel Therapeutics for Rett Syndrome (RTT) **R. Carpenter**. RETT Syndrome Research Trust.
- 11:10 Opportunities for Drug Development in Amyotrophic Lateral Sclerosis (ALS). **L. Bruijn**. The ALS Association.
- 11:35 AAV9 Based Gene Therapy for Neurological Disorders. **K. Meyer**. Nationwide Children's Hosp.

#### 423. THERE'S ALWAYS ROOM FOR DESSERT: EXAMINING THE EFFECT OF INSULIN AND HIGH FAT DIET ON NEUROTRANSMISSION, MOTIVATION AND COGNITION

##### Symposium

(Sponsored by: ASPET Division for Neuropharmacology (NEU))

TUES. 9:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: C. FERRARIO

COCHAired: L. REAGAN

##### Neuroscience

##### Nutrition/Obesity

##### Metabolism and Metabolic Disease

##### Inflammation/Immunity

- 9:30 How Sweet It Is: Diet, Insulin, Dopamine, and Reward. **M. Rice**. New York Univ. Sch. of Med.
- 10:05 Fighting Fat with Fat: Dietary Supplementation with Omega-3 Fatty Acids Prevents and Reverses High Fat Diet-Induced Enhanced Sensitivity to the Behavioral Effects of Dopaminergic Drugs. **K. Serafine**. Univ. of Texas at El Paso.
- 10:40 Why Did I Eat That? Effects of Insulin on Striatal Glutamatergic Transmission and Food-Seeking. **C. Ferrario**. Univ. of Michigan.
- 11:15 Do You Remember What You Had for Lunch? Novel Roles for Insulin in Cognition and Hippocampal Plasticity. **L. Reagan**. Univ. of South Carolina Sch. of Med.
- 11:50 Effects of Chronic, Intermittent Sucrose Consumption on the Discriminative Stimulus Effects of Dopamine or Opioid Antagonists. **M.A. Marek, D.R. Rothbauer, E.N. Schulz, A.C. Barton, A.M. Tryhus, D.J. Hardorn-Papke, L.J. Brandt, D.C. Jewett**. University of Wisconsin—Eau Claire. (822.7)

#### 424. ASPET DAILY DATABLITZ

##### Poster Discussion

TUES. 1:00 PM—SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

ASPET POSTER DISCUSSION AREA BOOTH #820

CHAired: A. MUGHAL

Experience the daily ASPET datablitz, a rapid-fire oral presentation of research in the ASPET poster discussion lounge in the poster hall. These brief snippets of research are an introduction to their full presentations that will take place at their poster boards afterwards. You won't want to miss this fast-paced overview of the most exciting science of the day.

- 1:00 Pharmacokinetic Modeling of Acetylcholine-Induced Contraction of Mouse Trachea. **C.M. Kieffer**. Creighton University School of Medicine. (834.1)

- 1:05 Identification of Human Antigen R (HuR) as a Central Mediator of Cardiac Fibrosis. **L.C. Green, S.R. Anthony, L. Lanzillotta, S. Jones, M. Nieman, J. Lorenz, X. Wu, L. Xu, M. Tranter.** University of Cincinnati and Kansas University. (839.5)
- 1:10 Endothelial TRPV4 Channel Function Is Impaired in Pulmonary Arterial Hypertension. **C. Marziano, K. Hong, E.L. Cope, S.K. Sonkusare.** University of Virginia. (837.10)
- 1:15 Structure-Activity Relationship of Novel Compounds Based on Tamoxifen with Proposed Sigma-2 Receptor Activity. **C.R. T. Stang, L.R. Inbody, C.B. Orahod, M.J. Dick, A.M. Eichel, A.H. Mohamed, A.D. Faler, A.E. Zaibek, D.H. Kinder, R.A. Schneider.** University of Findlay College of Pharmacy and Ohio Northern University College of Pharmacy. (836.5)
- 1:20 Synergistic Effect of Combined Inhibition of the Checkpoint Kinase 1 and G9a Methyltransferase Pathways in Pancreatic Cancer. **G. Urrutia, A. Salmonson, G. Lomberk.** Medical College of Wisconsin. (835.1)
- 1:25 Break.
- 1:30 Influence of Liver-Specific Ablation of gp78 E3-Ligase on Hepatic Cytochrome P450-Dependent Drug Metabolism: Clinical Implications. **D. Kwon, S-M. Kim, M.A. Correia.** University of California, San Francisco. (833.1)
- 1:35 Sphingosine Kinase 2 Expression in CD11b<sup>+</sup> Macrophages Negatively Regulates cGAS-STING Activity and Resolves Lung Injury. **J. C. Joshi, I. Rochford, S. Baweja, B. Joshi, M. Z. Akhter, M. Tauseef, K. R. Chava, V. Natarajan, D. Mehta.** University of Illinois at Chicago and Chicago State University. (832.18)
- 1:40 Relaxation of Porcine Isolated Irides by Novel Hydrogen Sulfide-Releasing Compounds. **J. Robinson, L. Mitchell-Bush, M. Whiteman, C. Opere, S. Ohia, Y. F. Njie-Mbye.** Texas Southern University, University of Exeter Medical School, United Kingdom and Creighton University. (829.1)
- 1:45 Discovery and Characterization of a Novel Series of D2 Dopamine Receptor-Selective Antagonists Through Iterative Chemistry of a BET Bromodomain Inhibitor. **C.T. Fearce, M.C. Donegan, M.M. Day, M. Yoshioka, J.W. Strovel, R.B. Free, D.R. Sibley.** Molecular Neuropharmacology Section, National Institute of Neurological Disorders and Stroke, National Institutes of Health, ConverGene and LLC. (827.1)
- 1:50 Protein Kinase C $\beta$  Inhibitors Attenuate Amphetamine-Stimulated Behaviors Through Direct and Indirect Mechanisms in Different Brain Regions. **R. Altshuler, M. Gnegy, E. Jutkiewicz.** University of Michigan. (820.2)
- 1:55 Discussion.

#### 425. BERNARD B. BRODIE AWARD IN DRUG METABOLISM LECTURE

##### Lecture

(Sponsored by: ASPET Division for Drug Metabolism and Disposition (DMDD))

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16B

##### Drug Metabolism and Disposition

The Bernard B. Brodie Award in Drug Metabolism was established to honor the fundamental contributions of Bernard B. Brodie in the field of drug metabolism and disposition. The Award recognizes outstanding original research contributions in drug metabolism and disposition, particularly those having a major impact on future research in the field.

2:30 Introduction.

2:35 Sex Differences in Drug Metabolism: From Steroids and P450s to Transcription Factors and Chromatin States. **D. Waxman.** Boston Univ. Sch. of Med.

#### 426. DIVISION FOR CARDIOVASCULAR PHARMACOLOGY TRAINEE SHOWCASE

##### Symposium

(Sponsored by: ASPET Division for Cardiovascular Pharmacology (CVP))

TUES. 2:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAired: C. MARZIANO

COCHAired: S. SCHUMACHER

##### Cardiovascular

2:30 Introduction.

2:35 Hypoxic Stimulation of Vasoreparative Functions in Human CD34<sup>+</sup> Cells Is Mediated by Angiotensin Converting Enzyme-2 and Mas Receptor. **S. Joshi, E. Leclerc, Y. Jarajapu.** North Dakota State University. (699.5)

2:50 Anchored G<sub>s</sub>-Coupled Purinergic Receptor Regulation of L-Type Ca<sub>v</sub>1.2 and Vascular Tone in Diabetic Hyperglycemia. **M. P. Prada, A.U. Syed, O.R. Buonarati, D. Ghosh, M.A. Nystoriak, G.R. Reddy, K.C. Sasse, S.M. Ward, Y.K. Xiang, L.F. Santana, M. Nieves-Cintrón, J.W. Hell, M.F. Navedo.** University of California, Davis, University of Louisville, University of Nevada, University of Nevada, Reno. (569.10)

3:05 Apelin and Acetylcholine Activate Distinct Nitric Oxide Signaling Pathways to Cause Endothelium-Dependent Relaxation of Isolated Coronary Arteries. **A. Mughal, C. Sun, S.T. O'Rourke.** North Dakota State University. (699.4)

3:20 Calcium/calmodulin-Dependent Protein Kinase II (CaMKII) Signaling in Cardiomyocytes Initiates Inflammatory Responses Required for Adverse Cardiac Remodeling in Response to Pressure Overload. **T. Suetomi, A. Willeford, M. Li, S. Miyamoto, J. Heller Brown.** University of California and San Diego. (698.4)

- 3:35 Protective RhoA Signaling Regulates DRP1 and Mitochondrial Fission in Cardiomyocytes. **C.S. Brand, V.P. Tan, J. Heller Brown, S. Miyamoto.** University of California and San Diego. (839.3)
- 3:50 GPER Attenuates Angiotensin II-Induced Oxidative Stress via cAMP-Mediated Regulation of NOX4. **B.O. Ogola, M.A. Zimmerman, V.N. Sure, P.V. G. Katakam, S.H. Lindsey.** Tulane University. (700.1)
- 4:05 Conclusion.

#### 427. COMPUTATIONAL APPROACHES TO G PROTEIN-COUPLED RECEPTOR STRUCTURE AND FUNCTION

##### Symposium

(Sponsored by: British Pharmacological Society (BPS))

(Cosponsored by: ASPET Division for Drug Discovery and Development (DDD))

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 17A

CHAired: E. KELLY

COCHAired: A. CONIBEAR

##### Drug Discovery and Development

##### Emerging Technologies

##### Metabolism and Metabolic Disease

- 3:30 Introduction.
- 3:35 X-Ray Structures of GPCRs Provide Insights into New Binding Sites for Drug Discovery. **J. Mason.** Heptares Therapeutics Ltd.
- 4:00 Molecular Simulation and Machine Learning for the Design of Finely Tuned Drugs. **R. Dror.** Stanford Univ.
- 4:25 The Role of Dynamic Conformational Ensembles in GPCR Function. **I. Tikhonova.** Queen's Univ. Belfast.
- 4:50 Computational Medicinal Chemistry Approaches to GPCR Drug Discovery. **C. de Graaf.** VU Univ. Amsterdam.
- 5:15 Probing GPCR Cell Biology by Quantitative Proteomics. **M. von Zastrow.** Univ. of California, San Francisco.
- 5:40 Panel discussion.

#### 428. DIVISION FOR DRUG METABOLISM AND DISPOSITION GILLETTE AWARDS AND JUNIOR INVESTIGATOR PLATFORM SESSION

##### Symposium

(Sponsored by: ASPET Division for Drug Metabolism and Disposition (DMDD))

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16B

CHAired: N. ISOHERRANEN

COCHAired: X. DING

##### Drug Metabolism and Disposition

- 3:30 Cell-Specific Role of Aryl Hydrocarbon Receptor in Liver Fibrosis. **J. Yan, W. Xie.** University of Pittsburgh. (563.7)

- 3:43 Detoxification of Polycyclic Aromatic Hydrocarbons (PAHs) by UDP-Glycosyltransferase 3A2 (UGT3A2) Variants Using Alternative Sugars. **A.G. Vergara, C.J. W. Watson, G. Chen, P. Lazarus.** Washington State University. (564.15)
- 3:56 Belinostat Inhibits Rifampicin Induced CYP3A4 and MDR1 Gene Expression. **K.L. Abbott, C.S. Chaudhury, N. Narayanan, S.R. Pondugula.** Auburn University. (694.2)
- 4:09 In Vitro Evaluation of the Hepatic Disposition of Colistin. **B. Qi, I. Spriet, J. Wauters, P. Annaert.** Katholieke Universiteit Leuven, Belgium. (693.10)
- 4:22 Utilizing SULT4A1 Mutant Mouse Models to Characterize SULT4A1. **P.L. Garcia, M.I. Hossain, S.A. Andrabi, C.N. Falany.** University of Alabama at Birmingham. (833.12)
- 4:35 Multidrug Resistance Protein 4 (MRP4), a Drug Transporter Is a Novel Genetic Determinant for Adipogenesis. **A.C. Donepudi, J.E. Manautou.** University of Connecticut. (693.3)
- 4:48 Differential Inactivation Mechanism and Covalent Adduct Formation of ALDH1A1 and ALDH1A2 by WIN18,446. **G. Zhong, A. Zelter, T.N. Davis, M.R. Hoopmann, R.L. Mortiz, M. MacCoss, W.L. Nelson, N. Isoherranen.** University of Washington. (833.10)
- 5:01 CRISPR/Cas9 Genetic Modification of CYP3A5 \*3 in HuH-7 Human Hepatocyte Cell Line Leads to Cell Lines with Increased Midazolam and Tacrolimus Metabolism. **C. Dorr.** Minneapolis Medical Research Foundation at Hennepin County Medical Ctr.
- 5:30 Interaction of 2,4-Diaminopyrimidine Containing Drugs Including Fedratinib and Trimethoprim with Thiamine Transporters. **M. Giacomini.** Gilead Sciences.

#### 429. DIVISION FOR MOLECULAR PHARMACOLOGY POSTDOCTORAL AWARD COMPETITION AND KEYNOTE ADDRESS

##### Symposium

(Sponsored by: ASPET Division for Molecular Pharmacology (MP))

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 15B

CHAired: L. HAZELWOOD

COCHAired: H. DOHLMAN

##### Molecular Pharmacology

- 3:30 Introduction.
- 3:35 Drugging Undruggable Targets with Macrocyclic Peptides. **D. Pei.** The Ohio State Univ.
- 4:25 CRISPR/Cas9-Mediated Knockout of G Proteins and  $\beta$ -Arrestins Determines Transducer Specific Contributions to Dopamine D1 Receptor Signaling. **M.K. Jain, A.N. Nilson, D.E. Felsing, A. Inoue, J.A. Allen.** The University of Texas Medical Branch and Tohoku University, Japan. (827.7)
- 4:55 An Automated Live-Cell Microscopy System for Drug Profiling and Screening. **E.C. Greenwald, R. Wollman, J. Zhang.** University of California, San Diego, University of California, Los Angeles. (690.3)

- 5:25 Modulation of Synaptic Transmission: Quantitative Analysis of G $\beta\gamma$  Specificity to Adrenergic  $\alpha_{2a}$  Receptor and SNARE. **Y. Y. Yim, K. Betke, W.H. McDonald, R. Gilsbach, Y. Chen, K. Hyde, Q. Wang, L. Hein, K. Schey, H. Hamm.** Vanderbilt University, University of Freiburg, Germany and University of Alabama at Birmingham School of Medicine. (557.6)
- 5:55 Conclusion.

#### 430. NOVEL GENETIC-BASED TOOLS FOR TOXICITY SCREENING, PRECISION MEDICINE, AND MODE OF ACTION ANALYSIS

##### Symposium

(Sponsored by: ASPET Division for Toxicology (TOX))

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 15A

CHAIRED: A. HARRILL

COCHAIRED: B. CUMMINGS

##### Toxicology

- 3:30 Novel Methods for Rapid Assessment of Toxicant-Induced Changes in DNA Methylation: Alternatives to Pyrosequencing and Methylome Analysis. **B. Cummings.** Univ. of Georgia.
- 3:55 High-Throughput Transcriptomics in in vitro Chemical Screens, a Sensitive Tool for Benchmark Dose Assessment. **J. Harrill.** U.S. Environmental Protection Agency.
- 4:20 Weighted Gene Co-Expression Network Analysis (WGCNA): Systems Biology Approaches to Understanding Adverse Outcomes. **Y. Wang Webster.** Lilly Research Laboratories.
- 4:45 Diversity Outbred Mice—A Genetic Reference Population That Enabling Risk Predictions for Sensitive Subpopulations. **A. Harrill.** National Inst. of Environmental Health Sciences/NIH.
- 5:10 Pharmacogenetic Assessment of Drug Toxicity Using Diversity Outbred Mice. **D. Gatti.** The Jackson Laboratory.
- 5:35 Genome Wide and Targeted CRISPR Functional Approaches in Toxicology. **C. Vulpe.** Univ. of Florida.

#### 431. HOT TOPICS IN CARDIOVASCULAR PHARMACOLOGY

##### Symposium

(Sponsored by: ASPET Division for Cardiovascular Pharmacology (CVP))

TUES. 4:10 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

CHAIRED: W.J. KOCH

COCHAIRED: S. LINDSEY

##### Cardiovascular

- 4:10 PAR1 and p38 MAPK Regulation of Endothelial Pro-Inflammatory Responses. **C. Rada, N. Grimsey, I. Canto, H. Mejia-pena, J. Trejo.** University of California and San Diego. (837.1)
- 4:23 Deletion of Rap1 Increases Atherosclerosis Development in ApoE Mice by Increasing Macrophage Infiltration and Foam Cell Formation. **X. Chen, A. Xu, E. H. C. Tang.** The University of Hong Kong, People's Republic of China. (568.4)
- 4:36 Carvedilol Uniquely Stimulates  $\beta$ arrestin2-Dependent SERCA2a Activity via the  $\beta_1$ -Adrenergic Receptor to Exert Positive Inotropy in Cardiac Myocytes. **B.M. Parker, K.A. McCrink, A. Brill, J. Maning, V.L. Desimine, Y. Duarte, S.L. Wertz, A. Lympelopoulos.** Nova Southeastern University. (839.12)
- 4:49 Sirtuin 3 Attenuates Diabetic Cardiomyopathy via Suppression of p53 Acetylation and Regulating Cardiomyocyte Metabolism. **J-X. Chen, H. Zeng, L. Li.** University of Mississippi Medical Center. (838.1)

#### 432. PAUL M. VANHOUTTE DISTINGUISHED LECTURESHIP IN VASCULAR PHARMACOLOGY

##### Lecture

(Sponsored by: ASPET Division for Cardiovascular Pharmacology (CVP))

TUES. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 16A

##### Cardiovascular

##### Award Lectures

The Paul M. Vanhoutte Distinguished Lectureship in Vascular Pharmacology was established to honor Dr. Vanhoutte's lifelong scientific contributions to our better understanding and appreciation of the importance of endothelial cells and vascular smooth muscle function in health and disease and for his mentoring of countless prominent endothelial and vascular biologists and pharmacologists.

- 5:30 Presentation of Awards.
- 5:34 Introduction of Dr. Miller.
- 5:37 Estrogen and Vascular Function: The Clash between Basic Pharmacology and Clinical Practice. **V. Miller.** Mayo Clinic.
- 6:02 Introduction of Dr. Michel.
- 6:05 Life History of eNOS. **T. Michel.** Brigham and Women's Hosp., Harvard Medical Sch.

## Physiology

### 433. HALLMARKS OF GROUND RULES FOR PRODUCTIVE COLLABORATIONS IN SCIENCE. PREVENTING AND MANAGING CONFLICT.

#### Symposium

(Sponsored by: APS Careers in Physiology Committee)

TUES. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: J. BRANDAUER

COCHAired: B. BECKER

#### Career and Professional Development

- 7:00 Preventing and managing conflict. **I. Zucker.** Univ. of Nebraska Med. Ctr.
- 7:20 Preventing and managing conflict. **C. Moreno Quinn.** MedImmune, Cambridge, UK.
- 7:40 Panel discussion.

### 434. 2018 MENTORING SYMPOSIUM: RECOGNIZING AND RESPONDING TO IMPLICIT BIAS IN SCIENCE II

#### Symposium

(Sponsored by: APS Women in Physiology Committee)

TUES. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: D. AL ALAM

COCHAired: K. WALLACE AND D.H. HO

#### Diversity in Science

#### Career and Professional Development

- 7:00 Surviving and thriving in the post-Weinstein world. **Gretchen Dahlinger Means.** Univ. of Southern California.
- 7:30 General discussion.

### 435. DO IT AGAIN: HOW TO ACHIEVE RIGOROUSLY REPRODUCIBLE RESEARCH III

#### Symposium

(Sponsored by: APS Trainee Advisory Committee)

TUES. 7:00 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: R. DOWNEY

COCHAired: I. OBI

#### Career and Professional Development

- 7:00 Publishing reproducible research: ensuring that editors, reviewers, and readers have confidence in your findings. **Kim Barrett.** UCSD Sch. of Med.

### 436. MOLECULAR MECHANISMS FOR SALT-INDUCED CARDIOVASCULAR DISEASE

#### Symposium

(Sponsored by: Cell and Molecular Physiology Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

CHAired: A. KIRABO

COCHAired: N. RUGGERI BARBARO

#### Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)

#### Cardiovascular

#### Metabolism and Metabolic Disease

- 8:30 Salt, inflammation, and NKCC2. **Steven Crowley.** Duke University School of Medicine.
- 9:00 Renal nerves and renal inflammation in salt-induced hypertension: Afferent or efferent? **John Osborn.** University of Minnesota.
- 9:30 The brain and Salt Sensing in Cardiovascular Disease. **Sean Stocker.** University of Pittsburgh.

### 437. NEUROPLASTICITY OF AIRWAY REFLEXES

#### Symposium

(Sponsored by: Respiration Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

#### Neuroscience

- 8:30 Plasticity of nociceptive signaling from the airways. **Thomas Taylor-Clark.** University of South Florida.
- 8:52 Neural mechanisms of airway hyperreactivity. **Leah Reznikov.** University of Florida.
- 9:14 Effect of cervical spinal contusion on pulmonary C-fiber induced laryngeal closure. **Kun-Ze Lee.** National Sun Yat-Sen University.
- 9:36 The importance of spinal pathways in the regulation of swallow. **Teresa Pitts.** University of Louisville.

**438. MECHANISMS UNDERLYING SKELETAL MUSCLE ADAPTATION IN HEALTH AND DISEASE**

**Symposium**

(Sponsored by: Endocrinology and Metabolism Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: C. LANG

COCHAired: P. MOLINA

**Metabolism and Metabolic Disease**

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

**Nutrition/Obesity**

- 8:30 Impact of impaired stem cell differentiation on alcohol-induced muscle wasting. **Liz Simon.** LSU Health Science Ctr.
- 9:00 Proteasomal activation in remodeling muscle during aging and disuse. **Sue Bodine.** University of Iowa.
- 9:30 Changes in muscle protein synthesis: role in catabolic muscle loss in humans. **Stuart Phillips.** McMaster University.

**439. NEURO-IMMUNE INTERACTIONS IN INFLAMMATORY HOMEOSTASIS**

**Symposium**

(Sponsored by: Neural Control and Autonomic Regulation Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

CHAired: P. MARVAR

**Inflammation/Immunity**

**Neuroscience**

- 8:30 Inflammatory homeostasis: A role for MAMPs, DAMPs and microRNA. **Monika Fleshner.** University of Colorado Boulder.
- 9:00 CNS immune activation and effects on mesolimbic dopamine in a non-human primate model of peripheral cytokine-induced depression. **Jennifer Felger.** Emory.
- 9:30 CNS immune interactions in multiple sclerosis. **Robert Miller.** George Washington University.

**440. TISSUE-DISTRIBUTED CONTROL OF SEX DIFFERENCES IN DIABETES AND CARDIOVASCULAR DISEASE**

**Symposium**

(Sponsored by: Integrative Physiology Symposium Series)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: J.M. STAFFORD

**Cardiovascular**

**Nutrition/Obesity**

- 8:30 Sex differences in adipose tissue growth and remodeling contribute to metabolic risk. **Susan Fried.** Ichan Sch. of Med. at Mount Sinai.
- 8:52 Estrogen mediated cardioprotection. **Elizabeth Murphy.** NHLBI, NIH.
- 9:14 Gender risk of autoimmunity: Estrogen and aire. **Nadine Dragin.** Sorbonne Univ., UPMC-INSERM UMRS 974
- 9:36 Hepatic actions of estrogens and androgens in control glucose and lipid metabolism with obesity. **John Stafford.** Vanderbilt Univ. Sch. of Med.

**441. THE EFFECTS OF ENVIRONMENTAL CHALLENGES ON PERFORMANCE AND METABOLISM**

**Featured Topic**

(Sponsored by: Comparative & Evolutionary Physiology Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAired: C. WILLIAMS

COCHAired: A. HINDLE

**Metabolism and Metabolic Disease**

- 8:30 From lab to field and into the future, gaining insights into environmental and physiological drivers of crocodilian performance. **Craig Franklin.** The University of Queensland.
- 9:00 Environmental Chemicals Can Disrupt Neonatal Cardiomyocyte Physiology. **M. Ramadan, M. Sherman, R. Jaimes, L. Swift, N. Posnack.** Children's National Health System. (859.11)
- 9:15 Behavioral Thermoregulation of Antarctic Teleosts with and Without Hemoglobin in Response to Acute Thermal Challenge. **I.I. Ismailov, J.B. Scharping, I.E. Andreeva, M.J. Friedlander.** Virginia Tech Carilion Research Institute and Virginia Tech Carilion School of Medicine and Research Institute. (859.2)

- 9:30 Glucose Metabolism After Sleep Restriction, Total Sleep Deprivation, and Recovery. **E-M. Elmenhorst, E. Hennecke, D. Lange, J. Fronczek, A. Bauer, D. Elmenhorst, D. Aeschbach.** German Aerospace Center (DLR), Germany and Research Center Jülich, Germany. (859.12)
- 9:45 Development of Thermoregulatory Capability in Weddell Seal Pups. **L.E. Pearson, E. Weitzner, S. Whoriskey, L. Tomanek, H.E. M. Liwanag.** California Polytechnic State University and The Marine Mammal Center. (859.1)

#### 442. GETTING BLOOD TO WHERE IT NEEDS TO GO: EMERGING MECHANISMS REGULATING SKELETAL MUSCLE BLOOD FLOW IN HEALTH AND DISEASE

##### Featured Topic

(Sponsored by: Environmental and Exercise Physiology Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: S. ROMERO

COCHAired: C. HEARON

##### Cardiovascular

##### Metabolism and Metabolic Disease

- 8:30 Mechanisms of Age-Related Compensatory Vasodilation: Insight from Passive Leg Movement. **J.D. Trinity, R.M. Broxterman, J.R. Gifford, O. S. Kwon, J.R. Hydren, A.C. Kithas, A.D. Nelson, D.E. Morgan, J.E. Jessop, A. Bledsoe, R.S. Richardson.** Salt Lake City VA Medical Center and University of Utah. (726.7)
- 8:45 Augmented Skeletal Muscle Vasodilation to Intravascular ATP During Exercise and Systemic Hypoxia in Humans. **J.D. Terwoord, M.L. Racine, C.M. Hearon, Jr., J.C. Richards, G.J. Luckasen, M.J. Joyner, F.A. Dinunno.** Colorado State University, University of Colorado Health and Mayo Clinic and Foundation. (726.3)
- 9:00 Endothelium Mediated Dilation Does Not Blunt  $\alpha_1$ -adrenergic Vasoconstriction in First Order Arterioles. **B.S. Ferguson, E. Kozina, M.A. Hill, P.S. Clifford.** University of Illinois at Chicago and University of Missouri. (726.5)
- 9:15 Effect of Increased Skeletal Muscle Temperature on Intramuscular Histamine Concentrations. **J. Mangum, D. Sieck, M. Ely, E. Larson, C. Minson, J. Halliwill.** University of Oregon. (726.2)
- 9:30 Limiting the constrictor influence: a parallel tale on scientific mindset and vascular control in humans. **Frank Dinunno.** Colorado State University.

#### 443. INTERROGATING NEURONAL CIRCUITS MEDIATING BODY FLUID HOMEOSTASIS

##### Featured Topic

(Sponsored by: CNS Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: E. KRAUSE

COCHAired: L.A. WANG

##### Neuroscience

- 8:30 Salt and the NTS. **Brad Lowell.** Harvard.
- 9:00 Differential Effects of Osmotic Stress on Synaptic vs. Paracrine Signaling Mechanisms in Oxytocinergic Magnocellular Neurons. **C.J. Frazier, W. Sheng, S.W. Harden.** University of Florida. (598.10)
- 9:15 Chronic Chemogenetic Activation of OVLT Neurons Alters Body Fluid Homeostasis and Sympathetically-Mediated Hypertension. **S.D. Stocker, W.B. Farquhar, M.M. Wenner.** University of Pittsburgh and University of Delaware. (598.12)
- 9:30 Prefrontal Cortical Regulation of Chronic Stress-Induced Cardiovascular Susceptibility. **B. Myers, D. Schaeuble, A.E. B. Packard, J.M. McKlveen, R.L. Morano, S. Fourman, B.L. Smith, J.R. Scheimann, B.A. Packard, S.P. Wilson, J. James, D.Y. Hui, Y.M. Ulrich-Lai, J.P. Herman.** Colorado State University, University of Cincinnati, University of South Carolina and Cincinnati Children's Hospital Medical Center. (598.11)
- 9:45 Identifying 'Angiotensin Sensitive' Neurons in the Lamina Terminalis That Coordinate Endocrine, Cardiovascular and Behavioral Responses Mediating Body Fluid Homeostasis. **E.G. Krause, A.R. Alleyne, K.M. Cahill, M.D. Smeltzer, E.B. Bruce, Y. Tan, S.W. Harden, C.J. Frazier, A.D. de Kloet.** University of Florida. (598.7)

#### 444. ADVANCES IN RENAL PHYSIOLOGY II

##### Featured Topic

(Sponsored by: Renal Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: E. INSCHO

COCHAired: J. NESPOUX

- 8:30 Absence of the Na-Glucose Cotransporter SGLT1 Ameliorates Kidney Recovery in a Murine Model of Acute Kidney Injury. **J. Nespoux, R. Patel, W. Huang, H. Koepsell, B. Freeman, V. Vallon.** University of California, San Diego and VA San Diego Healthcare System and University of Würzburg, Germany. (849.5)

- 8:45 Bowman's Capsule Corrected: Undiscovered Vascular Chambers in the Renal Glomerulus. **D.O. Bates, K.P. Arkill, J.S. Bell, C.P. Winlove, S.J. Harper, C.R. Neal.** University of Nottingham, United Kingdom, University of Exeter, United Kingdom and University of Bristol, United Kingdom. (721.22)
- 9:00 The Role of Renal Vascular Reactivity in the Development of Renal Dysfunction During the Phase of Compensated and Decompensated Congestive Heart Failure. **V. Kratky, L. Kopkan, J. Sadowski, L. Cervenka.** Institute for Clinical and Experimental Medicine, Czech Republic, Mossakowski Medical Research Centre and Polish Academy of Science, Poland. (721.4)
- 9:15 Renal Mechanism for Regulation of Blood Pressure by the Circadian Clock Protein Per1. **L.G. Douma, M. Holzworth, K. Solocinski, K-Y. Cheng, S. Masten, I.J. Lynch, B.D. Cain, C.S. Wingo, M.L. Gumz.** University of Florida. (716.13)
- 9:30 The Protective Effects of Atrial Natriuretic Peptide Infusion in Salt-Sensitive Hypertension. **D. Ilatovskaya, V. Levchenko, A. Zietara, K. Winsor, D.R. Spires, A. Staruschenko.** Medical College of Wisconsin. (619.2)
- 9:45 Enhanced Hydrogen Peroxide and Renin Release in Primary Cultures of Juxtaglomerular (JG) Cells from Diabetic Mice. **M. Mendez.** Henry Ford Hospital. (721.15)

#### 445. ENDOTHELIAL CELL CONTRACTION OR RETRACTION (INSIGHTS INTO BARRIER FUNCTION AND PERMEABILITY)

##### Featured Topic

(Sponsored by: Cardiovascular Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: C. WEBB

COCHAired: C.F. WENCESLAU

##### Cardiovascular

- 8:30 Endothelial contractile cytoskeleton and barrier dysfunction. **Sarah Yuan.** University of South Florida.
- 9:00 N-Cadherin Signaling via RhoGEF Trio Stabilizes Ve-Cadherin Junctions and Regulates Vascular Permeability. **K.J. Kruse, Q. Lee, Y. Sun, X. Yang, J. Klomp, F. Huang, S. Vogel, L.M. Tai, A.B. Malik, J. W. Shin, Y.A. Komarova.** University of Illinois at Chicago. (846.5)
- 9:15 Mitochondria N-Formyl Peptides in Plasma of Polytrauma Patients Cause Vascular Endothelial Barrier Dysfunction Through Formyl Peptide Receptor-1 Activation. **P. Martinez Quinones, C. White, C.G. McCarthy, S. Ogbi, K. O'Malley, R. C. Webb, C. Ferreira Wenceslau.** Medical College of Georgia at Augusta University. (846.2)

- 9:30 A Disintegrin and Metalloproteinase 15-Mediated Glycocalyx Disruption Contributes to Vascular Leakage During Septic Injury. **X. (. Yang, J.E. Meegan, M. Jannaway, D.C. Coleman, S. Rodriguez Ospina, S.Y. Yuan.** University of South Florida. (846.1)
- 9:45 Estrogen Receptor Alpha Mediated Activation of the Endothelial Epithelial Sodium Channel: Role in the Genesis of Arterial Stiffness. **C. Manrique, Y. Yang, A. Lising, D. Chen, A. Aroor, J.R. Sowers, M. Hill.** University of Missouri. (846.7)

#### 446. NOVEL DISCOVERIES IN VASCULAR PHYSIOLOGY

##### Featured Topic

(Sponsored by: Cardiovascular Section)

TUES. 8:30 AM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: S. EARLEY

##### Cardiovascular

- 8:30 Introduction.
- 8:35 Parallel Processing of Multiple Stimuli in the Vascular Endothelium. **M.D. Lee, C. Wilson, C.D. Saunter, J.M. Girkin, J.G. McCarron.** University of Strathclyde, United Kingdom and Durham University, United Kingdom. (843.2)
- 8:50 Peroxynitrite-Induced Reversible Impairment of Endothelial TRPV4 Channel Function in Obesity. **K. Hong, E. Cope, C. Marziano, L. DeLalio, B. Isakson, S. Sonkusare.** University of Virginia. (843.21)
- 9:05 Dynamic Blood Flow Control by ATP-Sensitive K<sup>+</sup> Channel in Heart. **G. Zhao, H.C. Joca, W.J. Lederer.** University of Maryland School of Medicine. (843.24)
- 9:20 Junctional Pericytes Serve as Directional Control Elements in K<sup>+</sup>-Mediated Functional Hyperemia. **A.L. Gonzales, M. Nelson.** University of Vermont. (843.23)
- 9:35 Functional hyperemia in the brain regulated by retrograde C<sup>2+</sup> signals. **Scott Earley.** University of Nevada, Reno School of Medicine.

#### 447. HISTORY OF PHYSIOLOGY GROUP LECTURE

##### Lecture

(Sponsored by: History of Physiology Group)

TUES. 1:00 PM—SAN DIEGO MARRIOTT MARQUIS & MARINA, MARRIOTT GRAND BALLROOM 3-4

- 1:00 Bengt Saltin, M.D., D.Sci. (1935–2014): Exercise is medicine. **Peter Raven.** Univ. of North Texas Hlth. Sci. Ctr.

**448. APS PRESIDENT'S SYMPOSIUM SERIES III. EXOSOMES: THE NEW FRONTIER. EXOSOMES IN DIAGNOSTICS AND THERAPEUTICS**

**Symposium**

President's Symposium Series

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

CHAired: J.C. JONES

**Cancer and Therapy**

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

**Emerging Technologies**

- 1:30 Exosomes as drug delivery vehicles. **Samir El-Andaloussi**. Univ. of Oxford.
- 2:00 Exosomes as liquid biopsies for disease diagnosis. **Jhan Skog**. Exosome Diagnostics Inc.
- 2:30 Stem cell derived exosomes for tissue regeneration. **Johnathon Anderson**. Univ. of California—Davis Medical Center.

**449. STEROID RECEPTOR SIGNALING IN CARDIOVASCULAR HEALTH AND DISEASE**

**Symposium**

(Sponsored by: Cardiovascular Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: M. HAMBLIN

COCHAired: J. CLAYTON

**Cardiovascular**

- 1:30 Estrogen-dendrimer conjugate protection against cardiac ischemic-reperfusion injury is ablated in mice with endothelial-specific loss of ER-alpha. **Elizabeth Murphy**. National Heart Lung and Blood Institute.
- 1:52 Crucial role of mitofilin and cyclophilin D interaction in post-ischemic GPER1-induced cardioprotection against ischemia-reperfusion injury. **Jean Bopassa**. University of Texas Health Science Center at San Antonio.
- 2:14 The role of aldosterone-mineralocorticoid receptor activation in pulmonary vascular remodeling and right ventricular dysfunction in pulmonary hypertension. **Jane Leopold**. Brigham and Women's Hospital.
- 2:36 Mineralocorticoid receptors in vascular function and CVD. **Iris Jaffe**. Tufts University Medical Center.

**450. STRUCTURE AND FUNCTION OF RENAL EPITHELIAL CILIA**

**Symposium**

(Sponsored by: Renal Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28DE

CHAired: P.D. BELL

COCHAired: D. ILATOVSKAYA

**Metabolism and Metabolic Disease**

- 1:30 Mechanosensitive differentiation of proximal tubule cells. **Ora Weisz**. Univ. of Pittsburgh.
- 2:00 Dietary interventions in polycystic kidney disease: taking advantage of metabolic defects for therapy. **Thomas Weimbs**. Univ. of California, Santa Barbara.
- 2:30 Unilateral nephrectomy activates kidney immune cells and accelerates cyst growth in polycystic kidney disease. **Takamitsu Saigusa**. Univ. of Alabama at Birmingham.

**451. SYMPATHETIC NEUROVASCULAR TRANSDUCTION IN HUMANS: ARE WE THERE YET?**

**Symposium**

(Sponsored by: Neural Control and Autonomic Regulation Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: J.K. SHOEMAKER

**Neuroscience**

- 1:30 Neurovascular transduction in humans: New approaches to old questions. **Can Tan**. Harvard Medical School.
- 2:00 Sympathetic transduction: Implications for health and disease. **Paul Fadel**. University of Texas at Arlington.
- 2:30 From one generation to the next: differential distribution of sympathetic receptors in skeletal muscle microvasculature. **Baraa Al-Khazraji**. Western University.

#### 452. MOLECULAR TRANSDUCERS OF THE PHYSIOLOGICAL ADAPTATIONS TO EXERCISE AND AGING

##### Symposium

(Sponsored by: Environmental and Exercise Physiology Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

CHAIRED: D.R. SEALS

COCHAIRED: C.R. MARTENS

##### Cardiovascular

##### Inflammation/Immunity

##### Metabolism and Metabolic Disease

- 1:30 Symposium introduction. **Douglas Seals**. University of Colorado Boulder.
- 1:40 Molecular mechanism of reversal of age-related decline of muscle mitochondria in humans. **Sreekumaran (Sree) Nair**. Mayo Clinic.
- 2:00 Inter-individual response heterogeneity: a window into molecular transducers of exercise adaptation. **Marcas Bamman**. University of Alabama Birmingham.
- 2:20 Metabolites as key molecular transducers of exercise and metabolic capacity. **Jane Shearer**. University of Calgary.
- 2:40 Epigenetic patterns with aging and exercise are associated with indicators of healthspan in humans. **Christopher Martens**. University of Delaware.

#### 453. THE VASCULOME: AN INTEGRATED EXPLORATION OF VASCULAR REACTIVITY, LINEAGE, AND SPECIALIZATION

##### Symposium

(Sponsored by: Cardiovascular Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAIRED: Z. GALIS

COCHAIRED: L. YIN

##### Cardiovascular

- 1:30 The *what* and *why* of the vasculome. **Zorina Galis**. National Heart Lung and Blood Institute.
- 1:40 Why we need the vasculome: Lessons from the coronary circulation. **William Chilian**. Northeast Ohio Medical University.
- 2:00 Mapping vascular smooth muscle development, diversity and reprogramming. **Mark Majesky**. University of Washington.
- 2:20 Tracing the origin of vascular lineage in development and diseases. **Bin Zhou**. Shanghai Institutes for Biological Sciences.
- 2:40 Panel discussion.

#### 454. PHYSIOLOGICAL ADAPTATIONS TO HYPOXIA: FROM MOUNTAIN TOP TO OCEAN BOTTOM

##### Featured Topic

(Sponsored by: Hypoxia Group)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

CHAIRED: M.B. HARRIS

COCHAIRED: E.A. MOYA

##### Inflammation/Immunity

##### Metabolism and Metabolic Disease

##### Cardiovascular

- 1:30 Lahiri-Cherniak Lecture of the APS Hypoxia Interest Group. **William Milsom**. Univ. of British Columbia.
- 2:15 Mechanisms of Neuroprotection Against Oxidative Stress in the Anoxia Tolerant Turtle *Trachemys scripta*. **M. Reiterer, S.L. Milton**. Florida Atlantic University. (858.6)
- 2:30 High Altitude Hypoxia Impacts Omega-3 Fatty Acid Metabolites in Plasma of Fetal and Newborn Sheep. **V. Lopez, M. La Frano, R. Bosviel, J. Newman, R. Thorpe, O. Feihn, L. Zhang, S.M. Wilson**. Occidental College Los Angeles, California Polytechnic State University, University of California, Davis, Loma Linda University School of Allied Health Professions and Loma Linda University School of Medicine. (858.5)
- 2:45 Sweet Success: Metabolic Substrate Adaptations to Acute Hypoxia in the Naked Mole Rat (*Heterocephalus glaber*). **M.E. Pamenter, A.M. Kirby, A.J. Shuhendler**. University of Ottawa, Canada. (858.8)

#### 455. EPITHELIAL MECHANO-SENSITIVITY IN HEALTH AND DISEASE

##### Featured Topic

(Sponsored by: Cell and Molecular Physiology Section)

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAIRED: A. BEYDER

COCHAIRED: F. CHEBIB

##### Neuroscience

- 1:30 Mechanical forces controlling epithelial cell numbers. **Jody Rosenblatt**. University of Utah.
- 2:15 Role of the Mechanosensitive Ion Channel Piezo1 in Autosomal Dominant Polycystic Kidney Disease (ADPKD). **F. Chebib, A. Beyder, X. Wang, C. Alcaino, B. Ehrlich, V. Torres**. Mayo Clinic and Yale University. (868.2)
- 2:30 Piezo2 Mechanosensitive Ion Channel Role in Primary Enterochromaffin (Ec) Cell Mechanosensitivity. **C. Alcaino, K. Knutson, G. Yildiz, D. Linden, J.H. Li, A. Leiter, G. Farrugia, A. Beyder**. Mayo Clinic and University of Massachusetts Medical School. (868.3)
- 2:45 N-Glycan and Heparan Sulphate Components of the Extracellular Matrix Are Essential for Laminar Shear Stress Response of the Epithelial Sodium Channel (ENaC). **Z. Ashley, D. Barth, J.P. Baldin, M. Fronius**. University of Otago, New Zealand. (868.1)

**456. GI AND LIVER PHYSIOLOGY AND DISEASE****Featured Topic***(Sponsored by: GI and Liver Physiology Section)*TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER,  
ROOM 23ABC

CHAired: M. FREY

**Nutrition/Obesity****Inflammation/Immunity****Emerging Technologies**

- 1:30 Colonic Bile Acids Regulate Epithelial Wound Healing. **N.K. Lajczak, M.S. Mroz, B. Goggins, S. Keely, S.J. Keely.** Royal College of Surgeons in Ireland, Ireland, School of Biomedical Sciences and Pharmacy and University of Newcastle, Australia. **(873.15)**
- 1:45 The Impact of Antibiotics on the Intestinal Microbiome and the Gut-Brain Axis in Zebrafish. **E.A. Bell, A.G. Ball, K.L. Deprey, J.K. Uno.** Elon University. **(765.1)**
- 2:00 Tofacitinib Inhibits Intestinal Epithelial Jak-Stat Signaling and Prevents Barrier Dysfunction Induced by Interferon-Gamma (IFN- $\gamma$ ). **A. Sayoc, R. Preciado, M. Krishnan, D.F. McCole.** University of California, Riverside. **(873.20)**
- 2:15 *Helicobacter pylori* Alters the Expression of Circadian Clock Components Per2 and Bmal1 During Infection. **E.L. Teal, J. Li, J.L. Chakrabarti, N. Steele, D. Rosselot, N. Sundaram, J. Hawkins, C. Hong, M.A. Helmraath, T.L. Diwan, Y.L. Zavros.** University of Cincinnati, University of Michigan and Cincinnati Children's Hospital Medical Center. **(873.21)**
- 2:30 Enteric Neuroinflammation Driven by Exposure to Pyridostigmine Bromide Is a Possible Contributing Factor to Gulf War Illness. **S. Hernandez-Rivera, V. Grubišić, D. Fried, B.D. Gulbransen.** Michigan State University. **(871.1)**
- 2:45 C-SRC Mediates Intestinal Stem Cell Response to High Fat Diet. **A.L. Theiss, J. Han, D.L. Jackson, J. Park, K. H. Jung, B.A. Kaiparettu.** Baylor Scott & White Research Institute and Baylor College of Medicine. **(759.2)**

**457. CELL PLASTICITY: CALCIUM, cAMP AND BEYOND****Featured Topic***(Sponsored by: Respiration Section)*

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: D. MEHTA

**Inflammation/Immunity****Metabolism and Metabolic Disease**

- 1:30 New insights into STIM-ORAI-dependent calcium signalling. **Patrick Hogan.** La Jolla Inst. for Allergy and Immunol.

- 1:45 Role of Mitochondrial Reactive Oxygen Species (ROS) and TRPV4 Activation in Microvascular Endothelial Cell Dysfunction in PAH. **K. Suresh, L. Servinsky, H. Jiang, Z. Bigham, J. Zaldumbide, J. Huetsch, C. Kliment, M. Damarla, L. Shimoda.** Johns Hopkins University. **(746.6)**
- 2:00 Extracellular Vesicles: An Additional Compartment for the Second Messenger, Cyclic Adenosine Monophosphate (cAMP). **S.L. Sayner, M. Maulucci, A. Scruggs, C. Zhou, N. Bauer.** University of South Alabama. **(746.1)**
- 2:15 Ceramide Containing Microparticles from Aged Stored Platelets Recapitulate Aspects of Murine Transfusion Related Acute Lung Injury. **M.J. McVey, M. Maishan, W.L. Lee, C. Spring, J.W. Semple, W.M. Kuebler.** University of Toronto, Canada, Keenan Research Centre for Biomedical Science, St. Michael's Hospital, Canada and Charité-Universitätsmedizin Berlin, Germany. **(746.2)**
- 2:30 Protease Activated Receptor 2 Deficiency in Alveolar Macrophages Impairs cAMP Generation Leading to Nfat-Dependent Pro-Inflammatory Signalling and Lung Injury. **R. R. Sheikh, J. C. Joshi, T. Mohammad, I. Rochford, S. Baweja, M. Koichiro, M. Hollenberg, D. Mehta.** University of Illinois at Chicago, Chicago State University and University of Calgary, Canada. **(746.5)**
- 2:45 Pannexin 1 and a Venous-Specific Purinergic Cascade Induces Endothelial Leak in Response to TNF $\alpha$ . **H.S. Comstra, D. Begandt, S. Molina, N. Krüger, L. Biber, S.R. Johnstone, A. Lohman, M.E. Good, L.J. DeLalio, H. Bacon, B.E. Isakson, M. Koval.** Emory University, Walter and Eliza Hall Institute of Medical Research, Germany and University of Virginia School of Medicine. **(746.8)**

**458. ORIGINS OF CARDIOVASCULAR DISEASE: DOES METABOLIC DISEASE ALWAYS COME FIRST?****Featured Topic***(Sponsored by: Water and Electrolyte Homeostasis Section)*

TUES. 1:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

CHAired: F.T. SPRADLEY

COCHAired: A. SOUZA

**Nutrition/Obesity****Metabolism and Metabolic Disease**

- 1:30 Obesity, cardiometabolic and kidney dysfunction: mechanistic links. **John Hall.** Univ. of Mississippi Med. Ctr.
- 2:00 Early Life Stress Induces Endothelial-Derived HDAC9 and ET-1 Expression. **K.C. McPherson, D.H. Ho, Y.D. Pettway, X. Liu, K.A. Hyndman, J.S. Pollock.** University of Alabama at Birmingham. **(905.2)**

- 2:15 Sex Differences in the Development of Renal Injury in Obese Dahl Salt-Sensitive Leptin Receptor Mutant Rats During Prepubertal Obesity. **B. Poudel, C.A. Shields, D.C. Cornelius, J.M. Williams.** University of Mississippi Medical Center. (906.5)
- 2:30 Nighttime Sodium Intake Is Associated with Cardiometabolic Risk and Insulin Resistance in Night Shift Nurses. **J.S. Speed, H.E. Molzov, R.L. Johnson, B.K. Becker, D.M. Pollock, K.L. Gamble.** University of Alabama at Birmingham. (906.11)
- 2:45 AMPK as a Metabolic Sensor Regulates Inflammatory Response During Ischemic Insults. **J. Li, X. Chen, C. Cates, T. Rousselle, X. Li.** University of Mississippi Medical Center. (906.9)
- 4:15 Collecting-Duct-Principal-Cell-Select Knockout (KO) of the Mechanistic-Target-of-Rapamycin (mTOR) Alters Sodium and Acid/base Homeostasis. **M.B. Fluitt, A.L. Brown, S. Tiwari, L. Li, C.M. Ecelbarger.** Georgetown University and Sanjay Gandhi Post-Graduate Institute of Medical Sciences, India. (624.26)
- 4:30 Characterization of P2RX7 Knockout in PCK (Polycystic Kidney) Rats. **S.N. Arkhipov, D. Potter, A.M. Geurts, T.S. Pavlov.** Henry Ford Health System and Medical College of Wisconsin. (624.5)
- 4:45 WNK3 and WNK4 Exhibit Opposite Sensibility for Cell Volume and Intracellular Chloride Concentration. **D. Pacheco-Alvarez, D.L. Carrillo-Pérez, A. Mercado, K. Leyva-Ríos, E. Moreno, N. Vazquez, G. Gamba.** Universidad Panamericana, Mexico, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico, Instituto Nacional de Cardiología Ignacio Chávez, Mexico and Instituto de Investigaciones Biomédicas—UNAM, Mexico. (624.17)

#### 459. RESPIRATORY AND LIMB SKELETAL MUSCLE WEAKNESS IN DISEASE AND AGING: MECHANISMS AND TREATMENTS

##### Symposium

(Sponsored by: Environmental and Exercise Physiology Section)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25C

- Reactive oxygen species and diaphragm contractile dysfunction in heart failure and aging. **Leo Ferreira.** University of Florida.
- 3:50 Mechanisms of diaphragm dysfunction in the critically ill. **Coen Ottenheijm.** VU University Medical Center Amsterdam.
- 4:15 Intracellular calcium leak as a mediator of muscle weakness in disease and aging. **Andrew Marks.** Columbia University.
- 4:40 Exercise training as a therapeutic treatment for muscle weakness in chronic disease. **Scott Bowen.** University of Leeds.

#### 460. HEBERT LECTURE OF THE EPITHELIAL TRANSPORT GROUP

##### Featured Topic

(Sponsored by: Epithelial Transport Group)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25A

CHAired: A.R. SUBRAMANYA

##### Metabolism and Metabolic Disease

##### Emerging Technologies

- 3:30 Potassium diet and blood pressure. **Alicia McDonough.** USC.
- 4:00 The  $\beta$ -Adrenergic Stimulation of the Renal NaCl Cotransporter Is Mediated via a cAMP-Dependent Activation of Protein Phosphatase 1 Inhibitor 1. **D. Penton Ribas, S. Moser, A. Wengi, J. Czogalla, L.L. Rosenbaek, N. Faresse, R. Fenton, D. Loffing-Cueni, J. Loffing.** University of Zurich, Switzerland and Aarhus University, Denmark. (624.23)

#### 461. EXERCISE AND SKELETAL MUSCLE AS KEY REGULATORS OF WHOLE BODY AGING

##### Featured Topic

(Sponsored by: Muscle Biology Group)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 22

CHAired: M. JACKSON

COCHAired: S. BROOKS

##### Metabolism and Metabolic Disease

##### Nutrition/Obesity

- 3:30 Muscle mitochondrial signaling as a regulator of whole body proteostasis. **Anne McArdle.** University of Liverpool.
- 4:00 Senescent Skeletal Muscle Produces a Distinct Cytokine Secretory Profile in Response to Endotoxin Exposure *in Vitro*. **A.J. Mattingly, O.J. Laitano, T.L. Clanton.** University of Florida. (907.12)
- 4:15 Metformin Blunts Exercise-Induced Improvements in Skeletal Muscle Mitochondrial Respiration Independent of Changes in Mitochondrial Biogenesis. **A.R. Konopka, W.M. Castor, J. Reid, H. Schoenberg, J. Laurin, C. Wolff, K. Hamilton, B. Miller.** University of Illinois at Urbana-Champaign and Colorado State University. (907.10)
- 4:30 Aerobic Exercise Training Reduces Regulators of Denervation in Exercise Resistant and Exercise Sensitive Old Rats. **L.A. Brown, P.C. MacPherson, L.G. Koch, N.R. Qi, S.L. Britton, S.V. Brooks.** University of Michigan and University of Toledo. (907.9)
- 4:45 Reduced Training Frequency Improves Muscle Adaptation and PI3K-Akt Signaling Following Resistance-Type Training in an Aging Model. **M. Naimo, J. Ensey, E. Rader, B. Baker.** National Institute for Occupational Safety and Health and Centers for Disease Control and Prevention. (907.8)

**462. CELL SIGNALING: PROTEINS, PATHWAYS, AND MECHANISMS****Featured Topic***(Sponsored by: Cell and Molecular Physiology Section)*

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28A

CHAired: K.L. HAMILTON

COCHAired: M. HELMS

**Regenerative Medicine (Stem Cells, Tissue Regeneration, Biomaterials)**

- 3:30 Functional selectivity of GPCR-directed drug action through location bias. **Roshanak Irannejad**. UC—San Francisco.
- 4:00 MSP-Dependent Activation of CNS RON Receptor Tyrosine Kinase Signaling Attenuates Neuroinflammation Through the Physiological Regulation of IL1B and NLRP3 Inflammasome Pathway. **A. Dey, S.K. Nettleford, J.W. Fraser, A.J. Hare, D.M. Alnemri, R.F. Paulson, K.S. Prabhu, P.A. Hankey-Giblin**. Pennsylvania State University. (864.18)
- 4:15 Matrix Metalloproteinase Inhibitors Attenuate Doxorubicin-Induced Heart Failure by Preventing Cardiac Titin Proteolysis. **B. Chan, A. Roczkowsky, M. Poirier, N. Moser, R. Ilaraza, H. Granzier, R. Schulz**. University of Alberta, Canada and University of Arizona. (864.10)
- 4:30 SIRT2 Is Required for in Vivo Tissue-Specific and Whole Body Insulin Action in Mice. **L. Lantier, A.S. Williams, C.C. Hughey, D. Bracy, D. Gius, D.H. Wasserman**. Vanderbilt University, Duke University and Northwestern University Feinberg School of Medicine. (864.6)
- 4:45 Mechanisms of CO<sub>2</sub>-Dependent Regulation of NFκB Signaling. **C.E. Keogh, C.C. Scholz, J. Rodriguez, A.C. Selfridge, A. von Kreigsheim, E.P. Cummins**. School of Medicine and Medical Science at University College Dublin, Ireland, Institute of Physiology, University of Zürich, Switzerland and Edinburgh Cancer Research Centre, United Kingdom. (864.4)

**463. AUGUST KROGH DISTINGUISHED LECTURESHIP OF THE APS COMPARATIVE AND EVOLUTIONARY PHYSIOLOGY SECTION (SUPPORTED BY NOVO NORDISK FONDEN)****Lecture***(Sponsored by: Comparative & Evolutionary Physiology Section)*

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 26AB

**Cardiovascular**

- 3:30 Anuran amphibians as models for understanding extreme dehydration tolerance. **Stanley Hillman**. Portland State Univ.

**464. BATTLE OF THE REFLEXES: CHEMOVERSUS BAROREFLEXES DURING PHYSIOLOGICAL STRESSORS, AGING AND CARDIOVASCULAR DISEASE****Featured Topic***(Sponsored by: Neural Control and Autonomic Regulation Section)*

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 28B

CHAired: M. KELLAWAN

COCHAired: M. NELSON

**Cardiovascular****Neuroscience**

- 3:30 Effects of diabetes on the exercise pressor reflex. **Audrey Stone**. University of Texas Austin.
- 4:00 Neural Responses to Mechanical Stimulation in Thin Muscle Afferents and Dorsal Root Ganglia Are Sensitized by Insulin. **N. Hotta, K. Katanosaka, K. Mizumura, J.H. Mitchell, S.A. Smith, M. Mizuno**. Chubu University, Japan and The University of Texas Southwestern Medical Center. (884.1)
- 4:15 How Do the Carotid Chemoreceptors Modulate Ventilatory Control and Cardiovascular Regulation at Rest and During Exercise in COPD? **D. Phillips, S. Collins, C. Steinback, T. Bryan, E. Wong, M.S. McMurtry, M. Bhutani, M. Stickland**. University of Alberta, Canada. (884.2)
- 4:30 High Intensity Muscle Metaboreflex Activation Blunts Cardiopulmonary Baroreflex Control of Sympathetic Vasomotor Outflow. **K. Katayama, J. Kaur, B.E. Young, T.C. Barbosa, S. Ogoh, P.J. Fadel**. Nagoya University, Japan, The University of Texas at Arlington and Toyo University, Japan. (884.3)
- 4:45 Effect of Acute Intermittent Hypoxia on Baroreflex Sensitivity to Decreasing and Increasing Blood Pressures. **Z.M. Scruggs, S.E. Baker, M.J. Joyner, J.K. Limberg**. Mayo Clinic and University of Missouri. (884.4)

**465. ADAPTATIONS IN FLUID BALANCE AND BLOOD PRESSURE REGULATION DURING PREGNANCY**

**Featured Topic**

(Sponsored by: Water and Electrolyte Homeostasis Section)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 25B

CHAired: K. DENTON

COCHAired: L. VEIRAS

**Cardiovascular**

**Salt**

**Ion Channels and Transporters**

- 3:30 Womens health: adaptations to pregnancy. **Vesna Garovic**. Mayo Clinic.
- 4:00 Time Course of Changes in Arterial and Venous Function During Normal and Hypertensive Pregnancies in Humans **J-K. Yoo, M.B. Badrov, O. Syed, R.S. Parker, A.S. Stickford, Y. Okada, S.A. Best, B.D. Levine, Q. Fu**. The University of Texas Southwestern Medical Center, Institute for Exercise and Environmental Medicine and Texas Health Presbyterian Hospital Dallas. (911.11)
- 4:15 T Lymphocytes Contribute to the Development of Maternal Syndrome in Dahl SS Rats Maintained on a Low Salt Diet. **J. H. Dasinger, J.M. Abais-Battad, H. Lund, D.J. Fehrenbach, A. Alsheikh, D.L. Mattson**. Medical College of Wisconsin. (911.2)
- 4:30 A Novel Anti-Inflammatory Agent for the Management of Preeclampsia. **A.C. Eddy, H. Chapman, F. Mahdi, E.M. George, G.L. Bidwell III**. University of Mississippi Medical Center. (911.3)
- 4:45 Cardiovascular Effects of Endothelial-Specific Interference with PPAR $\gamma$  Activity in Offspring Born from AVP-Induced Preeclamptic Pregnancies. **A.R. Nair, M. Mukohda, L.N. Agbor, K-T. Lu, J. Wu, J.A. Sandgren, J.L. Grobe, C.D. Sigmund**. University of Iowa. (911.5)

**466. HORACE W. DAVENPORT DISTINGUISHED LECTURESHIP OF THE APS GASTROINTESTINAL AND LIVER PHYSIOLOGY SECTION**

**Lecture**

(Sponsored by: GI and Liver Physiology Section)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 23ABC

**Career and Professional Development**

**Emerging Technologies**

**Inflammation/Immunity**

- 3:30 Mucosal barriers: pathways and pathologies. **Jerrold Turner**. Brigham and Women's Hosp.

**467. JULIUS H. COMROE, JR. DISTINGUISHED LECTURESHIP OF THE APS RESPIRATION SECTION**

**Lecture**

(Sponsored by: Respiration Section)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 24AB

- 3:30 Interdependence of neuromodulators in the control of breathing. **Hubert Forster**. Med. Col. of Wisconsin.

**468. ROBERT M. BERNE DISTINGUISHED LECTURESHIP OF THE APS CARDIOVASCULAR SECTION**

**Lecture**

(Sponsored by: Cardiovascular Section)

TUES. 3:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 27AB

**Cardiovascular**

- 3:30 Mechanisms of pulmonary vascular disease: Pathogenic role of ion channels. **Jason Yuan**. University of Arizona Health Sciences.

**469. APS BUSINESS MEETING**

**Business Meeting**

APS

TUES. 5:30 PM—SAN DIEGO CONVENTION CENTER, ROOM 20A

## WEDNESDAY, APRIL 25

## Across Societies

**470. ONE-ON-ONE RESUME CRITIQUE/CV,  
CAREER COUNSELING, ESSAY PERSONAL  
STATEMENT ASSESSMENTS****Workshop**

WED. 9:00 AM—SAN DIEGO CONVENTION CENTER, SAILS PAVILION

**Career and Professional Development**

One-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. Sign-up by using the following link, <http://bit.ly/EB18SignUp1on1Session>.

9:00 One-on-One Sessions. **J. Blumenthal, D. Behrens.**  
Montgomery Col., Rockville, MD and Univ. of Maryland  
Univ. Col., Adelphi, MD, Univ. of California, Berkeley.