

# EXPERIMENTAL BIOLOGY 2010

April 24-28, 2010

Anaheim, CA

## ASPET Preliminary Program

### **Friday & Saturday, April 23-24**

**The Behavioral Pharmacology Society Meeting**

### **Saturday, April 24 Afternoon Sessions**

#### **2010 Teaching Institute: Simulation in Pharmacology Education: Going Beyond Mannequins**

Chair: L.M. Crespo, University of Central Florida

**Anaheim Convention Center, Room 208**

12:30 PM – 3:00 PM

Many emerging technologies are available for the teaching of pharmacology in an applied format through simulation. These applications are adaptable to a large classroom, small groups or web-based self-learning. The interactive teaching institute will provide participants the opportunity to engage in these technologies from the students' perspective, and learn the nuts and bolts to implementing these simulations in their own programs.

Speakers: Lynn Crespo, Asst Dean, University of Central Florida College of Medicine  
Moshe Feldman, Ph.D., University of Central Florida College of Medicine

#### **Diversity Committee Workshop: Traditional and Alternative Career Paths in Rough Economic Times**

Chairs: M. Davila-Garcia, Howard University and Marcus Delatte, FDA

**Anaheim Convention Center, Room 210AB**

12:30 PM – 3:00 PM

##### *Welcome*

M. Davila-Garcia, Howard University

##### *Introduction*

M.S. Delatte, FDA

##### *The Balancing Act: Being a Principle Investigator and Administrator in Academia.*

P. Molina, LSU Hlth Sci Ctr., New Orleans

##### *Career Paths for Minorities to Help Others Through Diversity Promotion and Community Outreach.*

K.A. Albert, Louisiana State University

##### *Going from the Bench to the Clinic.*

P.A. Ardayfio, Eli Lilly & Co.

##### *Intellectual Property Law As a Rewarding Career Alternative for Researchers, Scientists, and Other Technical Professionals*

L. Stewart, Caterpillar, Inc

**AAA/ASPET Master Class: The Problem with Pain**

Anaheim Convention Center, Room 212AB

Chairs: D. Bolender, Medical College of Wisconsin and R. DePhillip, Ohio State University  
College of Medicine

1:30 pm – 4:00 pm

*Ouch! Neuronal Pathways Responsible for Conduction of Somatosensory & Visceral Pain*

J. McBride, Cleveland Clinic Lerner College of Medicine}}

*Biology of Transmission in the Pain Pathway*

T. Yaksh, UCSD

*Basic Mechanisms Underlying Pain After Nerve Injury*

Allan Basbaum, UCSF

*Current Treatment for Chronic Pain*

Quynh Pham, David Geffen School of Medicine at UCLA

**Graduate Student/Postdoc Colloquium: Leadership: Skills, Styles and Self Awareness**

Anaheim Convention Center, Room 208

Chairs: S.B. Bausch, USUHS and M. Sridharan, St. Louis University School of Medicine

3:15 pm – 5:45 pm

Speakers: M.J. Zigmond, University of Pittsburgh

K.A. Petrie, Vanderbilt University

**ASPET Business Meeting**

Anaheim Hilton, Pacific Ballroom A

6:00 pm – 7:30 PM

**Sunday, April 25 Morning Sessions**

**9:30 – 12:00 noon (unless otherwise noted)**

**WIP Into Shape Networking Walk**

Meet at the Anaheim Hilton Concierge Desk at 7:15 am

7:00 am – 8:30 am

**Diversity Mentoring Breakfast**

Anaheim Hilton, Monterey Room

7:30 am – 9:30 am

**Spatial and Temporal Organization of Cell Signaling**

Anaheim Convention Center, Room 208

Sponsored by the Division for Molecular Pharmacology and the American Society for Biochemistry & Molecular Biology

Chair: J.D. Scott, University of Washington School of Medicine Howard Hughes Medical Institute

*Cell Signaling in Space and Time*

J.D. Scott, University of Washington School of Medicine Howard Hughes Medical Institute

*AKAP-dependent Calcium Signaling in Muscle*

L. F. Santana, University of Washington School of Medicine

*Anchored PKA and Immune Function*

K. Taske'n, University of Oslo

*AKAPs and Adenylyl Cyclases*

C.W. Dessauer, University of Texas Medical School

**Regenerative Pharmacology and Stem Cell Research for Tissue and Organ Repair: State-of-the-Art**

Anaheim Convention Center, Room 209

Sponsored by the Divisions for Integrative Systems, Translational & Clinical Pharmacology; Cardiovascular Pharmacology; Drug Discovery, Development & Regulatory Affairs; and Neuropharmacology

Chairs: D.C. Marshall, Ferring Pharmaceuticals, Inc. and G.J. Christ, Wake Forest Institute for Regenerative Medicine

*Overview of the Pharmacology, Differentiation and Model Systems Used in Stem Cell Research*

S. Ding, Scripps Research Institute

*Regenerative Pharmacology for Cardiac Repair*

A. Terzic, Mayo Clinic

*Regenerative Pharmacology and Stem Cell Research for Tissue and Organ Repair: State-of-the-Art*

K. K. Hirschi, Baylor College of Medicine

*Stem and Progenitor Cells for Vascular and Muscle Tissue Engineering: Regenerative Pharmacology and Enabling Technologies Required for Clinical Translation*

G.J. Christ, Wake Forest Institute for Regenerative Medicine

*Pharmacological Modification of the hematopoietic Stem Cell Interaction with its Niche*

G. Adams, University of Southern California Keck School of Medicine

*Maturation and Growth of the Bladder Wall in a Rodent Model of Organ Regeneration (Abstract 754.1)*

D.M. Burmeister, Wake Forest University School of Medicine

## **New Therapeutic Approaches to Combat Arterial Thrombosis**

**Anaheim Convention Center, Room 210AB**

Sponsored by the Divisions for Cardiovascular Pharmacology; Drug Discovery, Development & Regulatory Affairs; and Integrative Systems, Translational & Clinical Pharmacology

Chairs: J. Kermode, Philadelphia College of Osteopathic Medicine (Georgia Campus) and Z.M. Ruggeri, The Scripps Research Institute

*Arterial Thrombosis: How it Occurs and How to Combat It*

Z. M. Ruggeri, Scripps Research Institute

*Metabolism as a Determinant of the Activation of Clopidogrel and Prasugrel and their Subsequent Inhibitory Effects on P2Y12 and Platelet Function*

J.A. Jakubowski, Eli Lilly & Company

*Protease-Activated Receptor-1 (PAR-1) on the Platelet as a Novel Target for Antithrombotic Drugs*

L.K. Jennings, University of Tennessee Health Science Center

*"Thrombin Sponge": A Potent Nanoparticle Approach to Inhibiting Coagulation in Acute Thrombosis (Abstract 574.2)*

J.W. Myerson, Washington University

*Upcoming and Future Targets on the Platelet for Antithrombotic Drugs*

J. Kermode, Philadelphia College of Osteopathic Medicine, Georgia Campus

## **Orphan Cytochrome P450 and Other Drug Metabolizing Enzymes**

**Anaheim Convention Center, Room 210C**

Sponsored by the Divisions for Drug Metabolism; Integrative Systems, Translational & Clinical Pharmacology; and Toxicology

Chair: F.P. Guengerich, Vanderbilt University School of Medicine

*Overview: The General Problem of Characterizing Proteins of Unknown*

F.P. Guengerich, Vanderbilt University School of Medicine

*Transgenic Mouse Approaches to P450 Function*

F. J. Gonzalez, NIH, National Cancer Institute

*Use of Humanized Mice in the Study of the Function of Human UGT Enzymes*

J.C. Stevens, Pfizer, Inc.

*Determinants of Variability in Divalproex Sodium (VPA) Glucuronidation in Children (Abstract 967.15)*

J.S. Leeder, Children's Mercy Hospital and Clinics

*In Vitro LC-MS Approaches to Deorphanization of Cytochrome P450 Enzymes*

Z. Tang, Vanderbilt University School of Medicine

## **When the Smoke Clears, There's More to Neuronal Nicotinic Acetylcholine Receptors**

Anaheim Convention Center, Room 210D

Sponsored by the Divisions for Behavioral Pharmacology; Drug Discovery, Development & Regulatory Affairs; Molecular Pharmacology; and Neuropharmacology

Chairs: M. Picciotto, Yale University School of Medicine and L. McMahon, University of Texas Health Science Center at San Antonio

### *Electrophysiological perspectives on the therapeutic use of nicotinic partial agonists*

R. Papke, University of Florida

### *Nicotine Addiction and Depression: Rodent Studies*

M. Picciotto, Yale University School of Medicine

### *Nicotinic Chemistry and Drug Discovery*

H. Rollema, Pfizer, Inc.

### *Nicotine Addiction and Depression: Human Studies*

T. George, University of Toronto

### *Behavioral and Physiological Effects of Novel nAChR Ligands in Rodents.*

E. Jutkiewicz, University of Michigan

### *Behavioral Effects of Novel nAChR Ligands: Pre-clinical Studies*

L. McMahon, University of Texas Health Science Center at San Antonio

## **Applying Web 2.0 Technologies in Teaching Pharmacology: Developing the Tool Box**

Anaheim Hilton, Palos Verdes AB

Sponsored by the Divisions for Pharmacology Education and Integrative Systems, Translational & Clinical Pharmacology

Chairs: W.B. Jeffries, University of Vermont College of Medicine and J.L. Szarek, The Commonwealth Medical College

### *Rethinking Education for the Net-Geners*

J.L. Szarek, The Commonwealth Medical College

### *Creative Use of Web 2.0 Technologies for Medical Education: Specific Examples*

W.B. Jeffries, University of Vermont College of Medicine

### *Web 2.0 Technologies: Providing New Tools for Teaching and the Next Generation of Students*

S. Dennis, University of Utah Eccles Health Science Library

### *Starting Your Web 2.0 Toolbar: Hands-on Session (bring your laptop)*

S. Dennis, University of Utah Eccles Health Science Library

## **Sunday, April 25 Afternoon Sessions**

**2:00 pm – 2:50 pm**

### **P. B. Dews Award Lecture in Behavioral Pharmacology: Staying on Schedule**



Speaker: D. E. McMillan, University of Arkansas for Medical Sciences (ret)  
Anaheim Convention Center, Room 210C

**Sunday, April 25 Afternoon Sessions**  
**3:00 pm – 5:30 pm (unless otherwise noted)**

**Receptor-Independent Activators of G-Protein Signaling in the Nervous System**  
**Anaheim Convention Center, Room 208**

Sponsored by the Divisions for Drug Discovery, Development & Regulatory Affairs and Molecular Pharmacology  
Chair: S.M. Lanier, Medical University of South Carolina

*AGS3 and AGS4 in G-Protein Signaling*

J. B. Blumer, Medical University of South Carolina

*Regulation of G-Protein Signaling and Expression by the Non-Receptor GEFs Ric-8A and Ric-8B*

G. Tall, University of Rochester

*GIV/Girdin, a Non-Receptor GEF for Gai, is Required for Cell Migration*

M.G. Farquhar, University of California, San Diego

*The Role of AGS3 in Craving, Alcoholism and Addiction*

I. Diamond, University of California, San Francisco

*Tctex1 (AGS2) and Neural Stem Cell Maintenance*

D. Kaplan, University of Toronto

**Applications of Stem Cell Therapies in Clinical Development and Regenerative Pharmacology in Organ Repair**

**Anaheim Convention Center, Room 209**

Sponsored by the Divisions for Integrative Systems, Translational & Clinical Pharmacology; Cardiovascular Pharmacology; Drug Discovery, Development & Regulatory Affairs; and Neuropharmacology

Chair: A. Chen, University of Pittsburgh School of Medicine

*MHC-I Expression on ESC-derived Vascular Progenitor Cells is Critical for Syngeneic Transplant Survival*

M. Boehm, NHLBI, NIH

*Endothelial Progenitor Cells and Vasculogenesis in Diabetes*

A. Chen, University of Pittsburgh School of Medicine

*Title TBD*

E. Morrisey, University of Pennsylvania

*Cardiac Regeneration: iPS, ES, or Endogenous Cells*

S.M. Wu, Massachusetts General Hospital

*Stem Cell Models of Cardiac Development and Disease*

I. Domian, Massachusetts General Hospital

## **Stimulus-Bias in an Allosteric World: Relevance to CNS Drug Target Validation**

Anaheim Convention Center, Room 210AB

Sponsored by the Divisions for Neuropharmacology and Drug Discovery, Development & Regulatory Affairs

Chairs: A. Christopoulos, Monash University and C. Felder, Eli Lilly & Company

### *Quantifying Functional Bias at 7TM Receptors*

T. Kenakin, GlaxoSmithKine

### *Allosteric Modulator-Engendered Stimulus Trafficking: Implications for Drug Discovery*

A. Christopoulos, Monash University

### *Importance of Stimulus Bias in Discovery and Utility of Allosteric Modulators of GPCR's as Therapeutic Agents*

P.J. Conn, Vanderbilt University Medical Center

### *Deciphering the Complexity of Allosteric Modulation from In Vitro Pharmacology through In Vivo Behavioral Assessment*

C. Felder, Eli Lilly & Company

## **In Vivo Animal Modeling in Drug Discovery and Development: Multiple Approaches to Predict Clinical Efficacy in CNS Disorders**

Anaheim Convention Center, Room 210C

Sponsored by the Divisions for Behavioral Pharmacology; Integrative Systems, Translational & Clinical Pharmacology; and Neuropharmacology

Chair: S. Rosenzweig-Lipson, Wyeth Research and P. McGonagle, PsychoGenics, Inc.

### *Introduction*

S. Rosenzweig-Lipson, Wyeth Research

### *Use of Transgenic Animal Models in the Discovery of Drugs for Neurological Disorders*

R. Paylor, Baylor Medical College

### *Cognition in NHP's: Utility of Translation into the Clinic*

D.M. Hutcheson, Maccine Pte, Ltd.

### *Behavior-Driven Approach to Drug Discovery*

P. McGonagle, PsychoGenics, Inc.

### *Animal Models in Psychiatry, Tried and True vs. Disease-Based, What's the Advantage?*

S. Rosenzweig-Lipson, Wyeth Research

### *Discussant: Pros/Cons of these In Vivo Approaches*

J.A. Barrett, Drexel University College of Medicine

## **Industrial Academic Partnerships: A New Era (Workshop)**

Anaheim Convention Center, Room 210D

Sponsored by the Divisions for Drug Metabolism; Behavioral Pharmacology; Drug Discovery, Development & Regulatory Affairs; Pharmacology Education; and Integrative Systems, Translational & Clinical Pharmacology

Chair: L. Wienkers, Amgen, Inc.

### *Insights on Joint Academic-Industrial Research Collaborations*

K. Seibert, Pfizer Global Research and Development

### *The Consortium Model for Strengthening Industrial/Academic Relations*

T.A. Baillie, University of Washington

### *The Academic Sabbatical in the Pharmaceutical Industry: Opportunity to Enhance Both Missions*

T. Tracy, University of Minnesota College of Pharmacy

### *Knowledge Request and Transfer: an Academic's Perspective of What Works and What Does Not Work*

R. Kim, University of Western Ontario

## **Monday, April 26 Morning Sessions**

**8:00 am – 8:50 am**

### **Julius Axelrod Lecture: Structure Based Drug Design in the Nervous System**



Speaker: P.W. Taylor, University of California, San Diego  
Anaheim Convention Center, Room 209

*Followed at 9:00 am by the Julius Axelrod Symposium: Instilling Structure and Mechanisms in Drug Design: Prospects of Academic-Industry Partnerships.*

## **Monday, April 26 Morning Sessions**

**9:00 am – 12:00 noon (unless otherwise noted)**

### **Wnt Signaling and Development: Conventional and Unconventional GPCR's Mechanisms**

Anaheim Convention Center, Room 208

Sponsored by the Divisions for Molecular Pharmacology and Neuropharmacology

Chair: C.C. Malbon, Stony Brook University-SUNY

#### *Introduction*

C. C. Malbon, Stony Brook University - SUNY

#### *Wnt-Frizzled Signaling: The G-Protein-Coupled Mechanisms and Targets*

L. Katanaev, University of Konstanz

#### *Wnt-Frizzled Signaling: The Non-G-Protein-Coupled Mechanisms*

R. Van Amerongen, Stanford University

#### *Wnt-Frizzled Signaling and LRP5/6*

X. He, Children's Hospital and Harvard Medical School  
*Wnt-Frizzled Signaling and Protein Domains*  
H. Wang, State University of New York at Stony Brook  
*Wnt-Frizzled Signaling and the Function of  $\beta$ -Arrestins*  
G. Schulte, Karolinska Institute

**Julius Axelrod Symposium: Instilling Structure and Mechanism in Drug Design: Prospects for Academic-Industry Partnerships**

Anaheim Convention Center, Room 209

Chair: P. W. Taylor, University of California, San Diego

*Structure and Mechanism in Nicotinic Receptor Activation: Implications for Partial Agonism and Congenital Myasthenia*

S. Sine, Mayo Medical College

*Using G Protein-coupled Receptor Structural Information to Create Novel Probes and Candidate Medications for Neuropsychiatric Disease.*

B. Roth, University of North Carolina Chapel Hill.

*Structural Genomics of Human G Protein Coupled Receptors*

R. Stevens, Scripps Research Institute

*Allosteric Modulation of G Protein Coupled Receptors as a Novel Approach to Treatment of CNS Disorders*

P.J. Conn, Vanderbilt University

*Freeze-frame, Click Chemistry: Using the Very Target of Drug Action as the Synthetic Template for Synthesis of Agonists and Antagonists*

P. Taylor, Skaggs School of Pharmacy & Pharmaceutical Sciences, UCSD

**Recent Advances in the Neuropharmacology of Anxiety: Implications for Novel Therapeutics**

Anaheim Convention Center, Room 210AB

Sponsored by the Divisions for Integrative Systems, Translational & Clinical Pharmacology and Neuropharmacology

Chair: B. Greenwood-Van Meerveld, University of Oklahoma Center for Neuroscience

*Overview of Anxiety: Current and Future Treatment Approaches*

B. Greenwood-Van Meerveld, University of Oklahoma Center for Neuroscience

*GABA-A Receptors and Therapeutics: Beyond Benzodiazepines*

L. Gerak, University of Texas Health Science Center

*Visceral Pain Related Anxiety: Role of Glucocorticoids*

B. Meyers, University of Oklahoma Center for Neuroscience

*Pathophysiology of Panic Disorder: Neuroimaging Studies of Monoaminergic Neurotransmitter Systems*

W. Drevets, University of Oklahoma, Tulsa

*Molecular Pharmacology of Anxiety: Role of Orphan FX/Nociceptin*

Kelly Standifer, University of Oklahoma Health Sciences Center

## **Introduction of Drug Safety (Pharmacovigilance) Into Curricula**

Anaheim Convention Center, Room 210C

Sponsored by the Divisions for Pharmacology Education; Behavioral Pharmacology; Cardiovascular Pharmacology; Drug Discovery, Development & Regulatory Affairs; Drug Metabolism; Integrative Systems, Translational & Clinical Pharmacology; Molecular Pharmacology; Neuropharmacology; and Toxicology

Chairs: G. Dunaway, Southern Illinois University and J. Strandhoy, Wake Forest University

### *Introduction to Pharmacovigilance*

G. Dunaway, Southern Illinois University School of Medicine

### *Mechanisms of Common and Important Adverse Drug Reactions*

J. Strandhoy, Wake Forest University

### *The Role of the FDA in Drug Safety Education*

C. Furberg, Wake Forest University

### *Models for Introduction of Pharmacovigilance into the Pharmacology Curriculum*

C. Faingold, Southern Illinois University School of Medicine

### *Careers in Drug Safety*

S. W. Mittelstadt, Abbot Laboratories

## **Extracellular Matrix Proteins of the CCN Family as Therapeutic Targets**

Anaheim Convention Center 210D

Sponsored by the Divisions for Drug Discovery, Development & Regulatory Affairs and Molecular Pharmacology

Chairs: J. Heller Brown, University of California, San Diego and L.F. Lau, University of Illinois at Chicago

### *CCN Proteins, Inflammation , and Wound Healing*

L.F. Lau, University of Illinois at Chicago

### *CCN1/CYR61 in Breast Cancer*

R. Lupu, Mayo Clinic

### *CCN1//Cyr61 in GPCR Signaling*

J. Heller Brown, University of California, San Diego

### *CCN2/CCTGF in Liver Fibrosis*

D. Brigstock, Ohio State University

### *Thrombin Mediated PAR1 Stimulation Results in Sustained Activation of Rap12 and Downstream Responses in Human 1231N1 Astrogloma Cells (Abstract 769.16)*

J. Sayyahm, University of California, San Diego

## **Monday April 26<sup>th</sup> Afternoon Sessions**

**2:00 pm – 2:50 pm**

### **B.B Brodie Award Lecture in Drug Metabolism: Structure and Function of Cytochromes P450 2B and 3A: From Mechanism-based Inactivators to X-ray Crystal Structures and Back**



Speaker: J. R. Halpert, University of California, San Diego  
Anaheim Convention Center, Room 208

## **Monday April 26<sup>th</sup> Afternoon Sessions**

**3:00 pm – 5:30 pm (unless otherwise noted)**

### **Division for Drug Metabolism and James Gillette Best Paper Award Platform Session**

Anaheim Convention Center, Room 208

Chairs: S. Leeder, Children's Mercy Hospital and Clinics and J.C. Stevens, Pfizer, Inc

James R. Gillette Best Paper Award Winner: *Residues Controlling Binding of Diverse Ligands to Human Cytochrome P450 2A Enzymes*

N.M. Devore, University of Kansas

*Crystal Structure of a Cytochrome P450 2B6 Genetic Variant in Complex with the Inhibitor 4-(4-chlorophenyl) imidazole at 2.0 Å Resolution (Abstract 967.16)*

S.C. Gay, University of California, San Diego, The University of Texas Medical Branch, and Scripps Research Institute

*Regulation of CYPα31 by AMP-activated Protein Kinase and Peroxisome Proliferator Activated Receptor Alpha (Abstract 757.13)*

N. Bumpus, The Scripps Research Institute

James R. Gillette Best Paper Award Winner: *In Silico and In Vitro Modeling of Hepatocyte Drug Transport Processes: Importance of ABCC2 Expression Levels in the Disposition of Carboxy-dichlorofluorescein*

K. Howe, Pfizer, Ltd.

*Isolation of a Modulator of the Liver Specific Organic Anion Transporting Polypeptides 1B1 and 1B3 from *Rollinia emarginata* (Abstract 758.7)*

M. Roth, University of Kansas

*Mitochondrion is a Novel Site of Biotransformation of Dichloroacetate by Glutathione Transferase Zeta (Abstract 967.17)*

W. Li, University of Florida

### **Division for Neuropharmacology Post Doctoral Award Finalists**

Anaheim Convention Center, Room 209

*Stimulation of <sup>35</sup>S-GTPγS Binding by BAGA-B Receptor Agonists and Positive Modulators in Different Mouse Brain Regions*

T. Advani, University of Texas Health Sciences Center at San Antonio

*Blast-induced Traumatic Brain Injury Reduced Rotarod Performance in Sprague-Dawley Male Rats with No Impact on Visible Morris Water Maze Performance*

H. Awwad, Ohio University Health Sciences Center

*Contingent Methamphetamine Administration Decreases Dopamine and Vesicular Monoamine-2 Transporter Function*

L. McFadden, University of Utah

*Receptor Signaling and Behavioral Properties of EFF0311, a Longer Acting Selective Full D1 Agonists as a Potential Treatment for Parkinson's Disease*

V. Murthy, Pennsylvania State College of Medicine

*Activation of the HO-CO System in Spontaneously Hypertensive Rats Counterbalances the Sympathoexcitatory Response Elicited by Ethanol in Rostral Ventrolateral Medulla*

N. Nassar, East Carolina University

*Hyperactive Mice Show Elevated D2 High Receptors, A Model for Schizophrenia: Calcium/Calmodulin-dependent Kinase II Alpha Knockouts*

G. Novak, University of Toronto

### **Division for Cardiovascular Pharmacology Trainee Showcase**

**2:00 pm – 4:30 pm**

**Anaheim Convention Center, Room 210AB**

*Vascular KCNQ Potassium Channels as Therapeutic Targets in Cerebral Vasospasm (Abstract 770.5)*

B. K. Mani, Loyola University Chicago

*Sex Hormones Negatively modulate STIM1/Orai-1 Activity During Hypertension: Focus on Calcium Regulation (Abstract 1041.21)*

F. Giachini, Medical College of Georgia

*Antiarrhythmic Drug-induced Modulation of Kv Channel Surface Density in Cardiomyocytes (Abstract 961.6)*

S.M. Schumacher, University of Michigan

*Aging is Associated with Resistance to the Cardiovascular Actions of Leptin for Baroreflex Modulation (Abstract 624.8)*

A.C. Arnold, Wake Forest University School of Medicine

*The Role of Autophagy in Angiogenesis in Aortic Endothelial Cells (Abstract 252.1)*

J. Du, Medical College of Wisconsin

*Monoamine Oxidase B Gene Deletion Prevents Cardiac Pump Dysfunction in Mice with Pressure Overload (Abstract 573.7)*

N. Kaludercic, Johns Hopkins Medical Institutions

### **Paul Vanhoutte Award Lecture in Cardiovascular Pharmacology: Arachidonic Acid Metabolites as Endothelium-Derived Hyperpolarizing Factors**

**4:30 pm – 5:30 pm**



Speaker: W.B. Campbell, Medical College of Wisconsin  
Anaheim Convention Center, Room 210AB

**Division for Pharmacology Education Symposium: Making Medical Pharmacology More Clinically Relevant**

Anaheim Convention Center, Room 210C

Organizers: K. K. McMahon, Texas Tech Paul L. Foster School of Medicine and A. Wilson-Delfosse, Case Western Reserve University

*Making pharmacology more clinically relevant: An overview*

D. Quest, Texas Tech University Health Sciences Center

*Approach to teaching pharmacology at Paul L. Foster School of Medicine*

K. McMahon, Texas Tech Paul L. Foster School of Medicine

*Approach to teaching pharmacology at Case Western Reserve*

A. Wilson-Delfosse, Case Western Reserve University School of Medicine

*Approach to teaching pharmacology at Southern Illinois School of Medicine*

G. Dunaway, Southern Illinois School of Medicine

**Division for Behavioral Pharmacology Symposium: Stress, Cognitive Function, and Monoaminergic Mechanisms in Psychiatric Disorders**

Anaheim Convention Center, Room 210D

Chairs: D. Morilak, University of Texas Health Science Center at San Antonio and A. Frazer, University of Texas Health Science Center at San Antonio

*Catecholaminergic Regulation of Impulse Control*

J. D. Jentsch, University of California, Los Angeles

*Role of the Medial Prefrontal Cortex in Stress Resilience and Vulnerability*

S. Maier, University of Colorado

*Molecular Mechanisms Underlying Stress-induced Prefrontal Cortical Dysfunction: Relevance to Mental Illness*

A. Arnsten, Yale University School of Medicine

*Monoaminergic Mechanisms Linking Stress, Cognitive Dysfunction and its Treatment in Depression and Anxiety Disorders*

D. Morilak, University of Texas Health Science Center

**Tuesday, April 27 Morning Sessions**

**8:00 am – 8:50 am**

**Ray Fuller Lecture in the Neurosciences: Transcriptional and Epigenetic Mechanisms of Drug Addiction**



Speaker: E.J. Nestler, Mt. Sinai School of Medicine

Anaheim Convention Center, Room 209

*Followed at 9:00 am by the Ray Fuller Symposium: Epigenetic Mechanisms of Learning and Memory*

## **Tuesday, April 27 Morning Sessions**

**9:00 am – 12:00 noon (unless otherwise noted)**

### **High-Resolution Structural Approaches to Understanding GPCR Activation**

**Anaheim Convention Center, Room 208**

Sponsored by the Division for Molecular Pharmacology and the American Society for Biochemistry & Molecular Biology

Chair: B. Kobilka, Stanford University

*The Structure of a Constitutively Active Mutant of Rhodopsin: Implications for the Activation of GPCRs*

G. Schertler, MRC Centre Laboratory of Molecular Biology

*Long Time-Scale Molecular Dynamics Simulations of G-Protein-Coupled Receptors*

R. Dror, D.E. Shaw Research

*Allosteric Regulation on Ligand Binding by G-Proteins*

R. Sunahara, University of Michigan Medical School

*Mechanism of Receptor G-Protein Interaction*

H. Hamm, Vanderbilt University

### **Ray Fuller Symposium: Epigenetic Mechanisms of Learning and Memory**

**Anaheim Convention Center, Room 209**

Chair: E. J. Nestler, Mt. Sinai School of Medicine

*DNA and Histone Methylation in Learning and Memory*

J.D. Sweatt, University of Alabama, Birmingham

*Role of CBP in Long-Term Memory*

T. G. Abel, University of Pennsylvania

*Histone Acetylation in Hippocampus in Long-Term Memory Storage in Health and Disease*

L-H. Tsai, MIT

*Role of Histone Deacetylases in Memory Formation and Retrieval*

M.A. Wood, University of California, Irvine

## **Integrating Genetics, Genomics and Pharmacology: How the Pharmacogenomics Knowledge Base Catalyzes Pharmacogenomic Research and Translational Medicine**

Anaheim Convention Center, Room 210AB

Sponsored by the Divisions for Integrative Systems, Translational & Clinical Pharmacology; Behavioral Pharmacology; Cardiovascular Pharmacology; Drug Discovery, Development & Regulatory Affairs; Drug Metabolism; Pharmacology Education; Molecular Pharmacology; Neuropharmacology; and Toxicology

Chairs: R. Altman, Stanford University and A. Gaedigk, Children's Mercy Hospital & Clinics

*The PharmGKB database and the Pharmacogenetics Research Network: What it Can Do for Your Research*

R. Altman, Stanford University

*Genome-Wide Association Studies in Pharmacogenomics*

E. Dolan, University of Chicago

*Pharmacogenomics and Membrane Transporters: A Critical Component of Pharmacokinetics*

D. Kroetz, University of California, San Francisco

*Curation Process at Pharm GKB*

L. Gong, Stanford University

## **Regulating the Regulators: Redox Regulation, Stress Response Proteins and Apoptosis**

Anaheim Convention Center, Room 210C

Sponsored by the Divisions for Toxicology and Drug Metabolism

Chair: D. St. Clair, University of Kentucky

*Introduction to the Connections Among Cellular Redox Status, Mitochondria and Transcription Response*

D. St. Clair, University of Kentucky

*p53 Regulates Mitochondrial Function*

P.M. Hwang, NIH, National Heart, Lung, and Blood Institute

*ROS and p53 Modulators in Cancer-specific Apoptosis*

S. Lee, Harvard Medical School

*SIRT3 is a Mitochondrial Tumor Suppressor Gene Required for Maintenance of Mitochondrial Integrity and Oxidative Metabolism During Stress*

D. Gius, NIH, National Cancer Institute

*Mitochondria: Novel Regulators of the Keap1/Nrf-2 Antioxidant Pathway*

A. Landar, University of Alabama, Birmingham

*The Bi-directional Role of p53 on MnSOD Expression*

S. Dhar, University of Kentucky

## **New Insights About an "Old" Second Messenger, cAMP: Implications for Cardiovascular Pharmacology**

Anaheim Convention Center, Room 210D

Sponsored by the Divisions for Cardiovascular Pharmacology and Molecular Pharmacology

Chair: P.A. Insel, University of California, San Diego

*Cyclic AMP: New Discoveries, Insights, and Therapeutic Opportunities*

P.A. Insel, University of California, San Diego

*Plasma Membrane Efflux: An Unappreciated Determinant of cAMP Signaling in Vascular Cells*

J. Hulot, Inserm U621

*Choreographing the Adenylyl Cyclase Signalosome: Sorting out the Partners and the Steps*

R. Feldman, Robarts Research Institute

*Epacs: cAMP Effectors that Link to Low Molecular Weight G-Proteins*

M. Schmidt, University of Groningen

## **Tues April 27<sup>th</sup> Afternoon Sessions**

**3:00 pm – 5:30 pm**

### **Division for Molecular Pharmacology Postdoctoral Award Finalists**

Anaheim Convention Center, Room 208

Chair: Joan Heller Brown, University of California, San Diego

*Identification of New G Protein-coupled Receptor Target(s) for the Regulation of Cardiac Fibrosis (Abstract 769.12)*

A.N. Snead, University of California, San Diego

*Attenuation of Dynamin-dependent Internalization Decreases Antinociception During the Expression of Morphine Tolerance (Abstract 585.4)*

T. A. Macey, Washington State University, Vancouver

*Heterologous Sensitization of Human AC5: Dependence on heterotrimeric G Proteins (Abstract 962.5)*

K.F.K. Ejendal, Purdue University

**Keynote Speaker: *RhoA at the Heart of GPCR Signaling***

J. Heller Brown, University of California, San Diego

## **Epigenetic Regulation: Concepts and Applications in Psychiatric, Neurological and Substance Abuse Disorders**

Anaheim Convention Center, Room 209

Sponsored by the Divisions for Behavioral Pharmacology; Drug Discovery, Development & Regulatory Affairs; Integrative Systems, Translational & Clinical Pharmacology; and Neuropharmacology

Chairs: J.E. Barrett, Drexel University College of Medicine and M.A. Nader, Wake Forest University School of Medicine

### *Epigenetic Principles and Mechanisms Underlying Nervous System Function in Health and Disease States*

M.F. Mehler, Albert Einstein College of Medicine

### *Studies of Schizophrenia Through the Prism of Epigenetics*

S. Akbarian, University of Massachusetts Medical Center

### *Epigenetic Mechanisms in Drug Addiction*

S.J. Russo, Mount Sinai School of Medicine

### *Epigenetic Alterations of miRNA in Neuropathic Pain Reveal Novel Regulatory Mechanisms*

S. Ajit, Wyeth Research

### *Therapeutic Application of Histone Deacetylase Inhibitors for CNS Disorders*

A.G. Kazantsev, Harvard Medical School

## **Division for Integrative Systems, Translational & Clinical Pharmacology Award Session**

Anaheim Convention Center, Room 210AB

Chair: A. Gaedigk, Children's Mercy Hospital & Clinics

### *Myogenic Constriction Occurs in the Absence of a Detectable Increase in pLC20 in the Presence of Agonist-induced Tone (Abstract 956.1)*

A.F. El-Yazbi, University of Calgary

### *Alternation in $\beta$ -arrestin Expression in Guinea Pig Ileum and Colon Following Morphine Tolerance (Abstract 583.6)*

M. Kang, Virginia Commonwealth University

### *ACE 2: A Potential Therapeutic Target for Angiotensin II-mediated Insulin Resistance and Glucose Intolerance (Abstract 569.2)*

K.H. Chhabra, Louisiana State University Health Sciences Center, New Orleans

### *Lipopolysaccharide Hyperpolarizes the Guinea Pig Tracheal epithelium by Increasing the Activities of the epithelial Sodium Channel and the Na,K-pump (Abstract 770.4)*

M.W. Dodrill, West Virginia University

### *MitoQ Protects Against Cold Ischemic Injury in Renal Cells and Rat Kidneys (Abstract 1059.8)*

T. Mitchell, University of Arkansas for Medical Sciences

### *Inhibition of Rho Kinase by Y27632 Increases Low Oxygen Tension-induced ATP Release from Human Red Blood Cells (Abstract 974.3)*

K. Thuet, St. Louis University

**Division for Toxicology Symposium: ABC Transporters, Their Role in Physiology, Toxicology and Cancer**

Anaheim Convention Center, Room 210C

Chair: J. Schuetz, St. Jude's Children's Research

*Transcriptional Regulation of Hepatobiliary Transporters*

C.D. Klaassen, University of Kansas Medical Center

*Applying Principles Derived from Laboratory Studies to Multidrug Resistance in Human Cancers*

M.M. Gottesman, NIH, National Cancer Institute

*Regulation of ABC Transporters at the Blood-Brain Barrier: New Targets for CNS Therapy*

B. Bauer, University of Minnesota College of Pharmacy

*The Contribution of ABC Transporters to Drug Resistance in a Realistic Mouse Mammary Tumor Model*

P. Borst, University of Amsterdam

**Division for Drug Discovery, Development & Regulatory Affairs Symposium: Protease-Activated Receptors: New Roles and Regulatory Mechanisms**

Anaheim Convention Center, Room 210D

Chair: J. Trejo, University of California, San Diego

*Dysregulation of Protease-Activated Receptor Signaling in Cancer*

J. Trejo, University of California, San Diego

*The Role of PAR1 in Neuronal Function and CNS Disease*

S. F. Traynelis, Emory University

*$\beta$ -arrestins as Mediators of PAR-2 Induced Inflammation*

K. DeFea, University of California, Riverside

*Proteinase-Mediated Signaling and Inflammation: Tissue Kallikreins (KLKs) and More*

M. D. Hollenberg, University of Calgary

**Wednesday, April 28 Morning Sessions Only**

**9:00 am – 12:00 noon**

**Sphingosine 1-Phosphate Signaling as a Therapeutic Target**

Anaheim Convention Center, Room 208

Sponsored by the Divisions for Molecular Pharmacology, Drug Discovery, Development & Regulatory Affairs; Integrative Systems, Translational & Clinical Pharmacology; and Neuropharmacology

Chair: K.R. Lynch, University of Virginia

*Sphingosine Kinases as Targets*

K.R. Lynch, University of Virginia

*Targeting S1P Signaling in Autoimmune Disease*

V. Brinkmann, Novartis Pharma AG  
*Anti-S1P Antibodies as Potential Treatment for Cancer and Age-related Macular Degeneration*

R.A. Sabbadini, Lpath Therapeutics, Inc  
*S1P and Pain*

S.P. Welch, Virginia Commonwealth University

## **Protein-Protein Interactions and Modulation of Drug Metabolism**

**Anaheim Convention Center, Room 210AB**

Sponsored by the Divisions for Drug Metabolism; Integrative Systems, Translational & Clinical Pharmacology; and Toxicology

Chair: T. Tracy, University of Minnesota College of Pharmacy

### *Introduction*

T. Tracy, University of Minnesota

*Effect of P450-P450 Complex Formation on Monooxygenase Function*

W. L. Backes, Louisiana State University School of Medicine

*Microsomal Monooxygenase as a Multienzyme System: Exploring Protein-Protein Interactions of Cytochromes P450*

D. Davydov, University of California, San Diego

*UGT-CYP Protein Interactions: Role of Conjugating Enzymes in Modulating Oxidative Enzyme Activity*

Y. Ishii, Kyushu University

*Lack of Substrate Inhibition in a Monomeric Form of Human Cytosolic Sult2A1 (Abstract 967.5)*

I.T. Cook, University of Alabama at Birmingham

## **Role of Mitochondria in Drug Hepatotoxicity: A Tale of Stress**

**Anaheim Convention Center, Room 210C**

Sponsored by the Divisions for Toxicology; Drug Metabolism; and Integrative Systems, Translational & Clinical Pharmacology

Chair: N. Kaplowitz, University of Southern California

*Compartmentation of Oxidative Stress Defense in Mitochondria: Implications of Drug Toxicity*

D. Jones, Emory University School of Medicine

*Mitochondrial Permeability Transition - Target and Executioner in DILI*

J. Le Masters, Medical University of South Carolina

*Interplay of Signal Transduction and Mitochondria in the Acetaminophen Model*

D. Han, University of Southern California

*Threshold for Mitochondrial Participation in Idiosyncratic DILI*

U. Boelsterli, University of Connecticut