

# ASPET Program Experimental Biology 2007 Washington, D.C.

## ■ SYMPOSIA ■

SUNDAY, April 29, 9:30 AM – 12:00 PM

### **Cannabinoids and Endocannabinoids I: Pain and Obesity**

Chair: Aron H. Lichtman and Jenny L. Wiley

1 Overview. **Jenny L. Wiley**, Virginia Commonwealth University

Elucidating the role of the endocannabinoid system in stress-induced analgesia. **Andrea G. Hohmann**, University of Georgia

Endocannabinoid modulation of pain and inflammation. **Aron H. Lichtman**, Virginia Commonwealth University  
Development of the CB1 receptor antagonist rimonabant for the treatment of obesity-associated metabolic syndrome.

**Gérard Le Fur**, Sanofi Aventis

Development of selective FAAH and MGL inhibitors to treat pain and psychiatric disorders. **Daniele Piomelli**, University of California, Irvine

### ● **Higher Order Organization of GPCR Signaling Components: Lipid Rafts and Multimeric Protein Complexes**

Chair: Rennolds S. Ostrom

Cyclic AMP compartmentalization; insights from calcium-sensitive adenylyl cyclases and key supporting players. **Dermot M.F. Cooper**, University of Cambridge

GPCR interactions with PDZ scaffolds. **Randy A. Hall**, Emory University School of Medicine

Localization of GPCR signaling components in caveolin-rich domains. **Paul A. Insel**, UCSD

Regulation of G protein signaling by cytoskeletal components and membrane microdomains. **Mark M. Rasenick**, University of Illinois at Chicago College of Medicine

(Abstract 5184) Reciprocal modulation of function between the D<sub>1</sub> and D<sub>2</sub> dopamine receptors and the Na<sup>+</sup>/K<sup>+</sup>-ATPase, a novel member of the dopamine receptor signalplex. **Lisa A. Hazelwood**, NINDS, NIH

(Abstract 5062) Disruption of lipid rafts enhances coupling of G-proteins to non-raft associated delta opioid receptors in HEK293 cells. **Erica Sawyer Levitt**, Univ. of Michigan.

### **P Pharmacogenomics: Frontiers to the Future**

Chairs: Rochelle M. Long and Richard M. Weinshilboum

Cytochrome P450 pharmacogenomics: Molecular mechanisms. **Michel Eichelbaum**, Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology, Stuttgart

Priorities and standards in pharmacogenetics research. **David B. Goldstein**, Duke University

The future of anti-hypertensive pharmacogenetics. **Donna K. Arnett**, University of Alabama

Genetically-modified animal models for pharmacogenomics research. **Stephen B. Liggett**, University of Maryland

Platforms for pharmacogenomics research and clinical applications. **Michael S. Phillips**, McGill University and Genome Quebec Innovation Center

### ● **D Nicotine Modulates Adolescent Brain Plasticity: Molecular, Neurochemical and Behavioral Changes**

Chairs: Shannon G. Matta, Burt M. Sharp, and Frances M. Leslie

Gestational nicotine exposure alters adolescent mesolimbic dopamine release and nicotinic receptor expression. **Burt M. Sharp**, University of Tennessee Health Science Center

Differential neuroadaptations to nicotine in adolescent and adult rats. **Sari Izenwasser**, University of Miami School of Medicine

Nicotine interaction with other drugs during sensitive developmental periods. **Frances M. Leslie**, University of California, Irvine, School of Medicine

Gestational comorbid exposure to nicotine and alcohol alters drug responsiveness in offspring. **Shannon G. Matta**, University of Tennessee Health Science Center

Sex specific effects of gestational and adolescent exposure to tobacco smoke on auditory and visual attention in adolescents. **Leslie K. Jacobsen**, Yale University School of Medicine

● **Technology Series: Nanotechnology in Disease Therapeutics**

Chair: Shiladitya Sengupta

Nanoparticle assemblies as quantitative molecular rulers and probes of conformational changes. **Bjoern M. Reinhard**, Boston Univ.

Ligand design for controlling assemblies of biomolecules. **Basar Bilgicer**, Harvard University

BioMEMS and Bionanotechnology: Integrating life sciences and engineering at the micro and nanoscale. **Rashid Bashir**, Purdue Univ.

Nanotechnology in drug delivery systems. **Shiladitya Sengupta**, Harvard Medical School/Brigham and Women's Hospital (Abstract 3923) Riboflavin enhances cellular accumulation of N-(2-hydroxypropyl) methacrylamide in breast cancer cells.

**Lisa M. Bareford**. Univ. of Maryland

**SUNDAY, April 29, 3:00 – 5:30 PM**

**Cannabinoids and Endocannabinoids II: Response to Pathogenic Processes**

Chairs: Ben A. Bahr and Somnath Mukhopadhyay

1 Activation of CB1 cannabinoid receptor: Structural studies. **Alexandros Makriyannis**, Northeastern University

3 Endocannabinoid anandamide in neuroprotection and angiogenesis: Interplay between CB1R and anandamide receptor. **Somnath Mukhopadhyay**, North Carolina Central University

4 The endocannabinoid system in neurodegenerative disorders: Beneficial or noxious? **Vincenzo Di Marzo**, Institute of Biomedical Chemistry, Pozzuoli, Italy

5 Cellular and functional protection through dual modulation of the endocannabinoid system. **Ben A. Bahr**, University of Connecticut

2 Behavioral and neurobiological significance of cannabinoid action. **Sam Deadwyler**, Wake Forest University School of Medicine

6 Novel role of cannabinoid in the regulation of inflammation. **Prakash Nagarkatti**, University of South Carolina School of Medicine

● **Genetic Regulation of GPCR/G-Protein/Adenylyl Cyclase Signaling: Implication in Pathobiology and Therapeutics**

Chair: Ross D. Feldman

Genetic variants of GPCRs linked to adenylyl cyclase activation. **Paul A. Insel**, UCSD

GRK genetic variants: Pathophysiological implications. **Pedro A. Jose**, Georgetown University

G-protein genetic variants. **Wilfred Siffert**, University of Essen

Adenylyl cyclase genetic variants: Physiological and pathophysiological implications. **Ross D. Feldman**, Robarts Research Institute

**Pharmacogenomics 101: Incorporating the Current Issues into the Curriculum**

Chair: Jack W. Strandhoy

Introduction. **Jack W. Strandhoy**, Wake Forest University School of Medicine

Basic pharmacogenetics and molecular modeling. **Russ B. Altman**, Stanford University School of Medicine

Therapeutic implications of pharmacogenomics: An overview. **Alan R. Shuldiner**, University of Maryland School of Medicine

Ethical and legal implications of pharmacogenomics. **Paul R. Wolpe**, University of Pennsylvania School of Medicine

Incorporating pharmacogenomics into the professional and graduate curricula. **Daniel A. Brazeau**, University of Buffalo - SUNY

● **No Time to Be “Bad To the Bone:” Osteoporosis and Bone Research in 2007**

Chairs: Henry U. Bryant and Laura K. Nisenbaum

Current status of osteoporosis: The disease, and outlook. **K. Harper**, Eli Lilly and Company

Important signal transduction pathways in the osteoblast. **Paula H. Stern**, Northwestern University Medical School

Effect of PTH on osteoblast differentiation. **Nicola C. Partridge**, UMDNJ-Robert Wood Johnson Medical School

Stromal cell differentiation and their role in the aging skeleton. **Pamela G. Robey**, NIDCR, NIH

**Toxicology of Nanomaterials**

Chairs: Nancy A. Monteiro-Riviere and Marc W. Fariss

Nanostructures and health - Nanochemistry perspectives. **Kevin D. Ausman**, Oklahoma State University

Dermal toxicity of nanomaterials **Nancy A. Monteiro-Riviere**, North Carolina State University

Respiratory toxicity of single-walled carbon nanotubes. **Anna A. Shvedova**, NIOSH, Morgantown, WV

Peripheral microvascular effects of pulmonary exposure to ultrafine particles. **Timothy R. Nurkiewicz**, West Virginia University

## Cardiovascular Gene Therapy

Chair: Paul L. Hermonat

Cardiovascular gene therapy. **Joseph C. Glorioso**, University of Pittsburgh School of Medicine  
Gene therapy against atherosclerosis. **Jawahar L. Mehta**, University of Arkansas for Medical Sciences  
Gene therapy for lung and cardiovascular disease. **Arthur L. Beaudet**, Baylor College of Medicine  
Adenylyl cyclase gene transfer in heart failure. **H. Kirk Hammond**, UCSD

- A junior speaker will be selected from the contributed abstracts to give a short talk in this symposium

**P** Pharmacogenomics Theme

**D** Developmental Pharmacology Theme

### MONDAY, April 30, 9:30 AM – 12:00 PM

#### • **D** Child and Adolescent Depression: Why Do Kids and Adults Respond Differently to Antidepressants?

Chair: David B. Bylund

Introduction. **David B. Bylund**, University of Nebraska Medical Center

Comparison of major depressive disorder and its treatment in children and adults. **Christopher J. Kratochvil**, University of Nebraska Medical Center

Psychotropic medications for children and adolescents. **Ronald T. Brown**, Temple Univ.

Behavioral neuropharmacology of adolescent brain development. **Linda P. Spear**, SUNY-Binghamton

(Abstract 1378) The forced-swim test and learned helplessness paradigm in juvenile rats model the lack of efficacy of tricyclic antidepressants in childhood and adolescent depression. **A.L. Reed**, Univ. of Nebraska Med. Ctr.

Animal models of juvenile depression. **Kevin H. Happe**, Creighton University School of Medicine

#### • Posttranscriptional Regulation of Gene Expression

Chair: J. David Port

Posttranscriptional regulation of gene expression: A regulatory paradigm for G-protein coupled receptors. **J. David Port**, University of Colorado Health Sciences Center

Role of TTP in modulation of TNF alpha expression. **Perry J. Blackshear**, NIEHS, NIH, Research Triangle Park, NC

Cell signaling-regulated phosphorylation of RNA binding proteins controls the expression of select labile transcripts.

**Roberto Gherzi**, National Institute for Cancer Research, Genoa, Italy

Post-transcriptional regulation of cyclin expression in breast cancer. **Rebecca S. Hartley**, University of New Mexico Health Science Center

#### **P** Cardiovascular Pharmacogenomics: From Theory to Practice?

Chairs: Dan M. Roden and Julie A Johnson

Genetics and genomics of antiarrhythmic therapy. **Dan M. Roden**, Vanderbilt University School of Medicine

Genetic and genomic markers of response to antihypertensive therapy. **Julie A. Johnson**, University of Florida

Predicting drug response in hypercholesterolemia. **Ronald M. Krauss**, Children's Hospital Oakland Research Institute

Pre-prescription genotyping in heart failure: a concept whose time is near? **Michael R. Bristow**, University of Colorado Health Science Center

#### **Ray Fuller Symposium: Promise and Pitfalls in the Search for New Drugs Targeted at Metabotropic Glutamate Receptors**

Chair: Darryle D. Schoepp

mGluR5 negative allosteric modulators: In line for multiple clinical proof of concept testing. **Vincent Mutel**, Addex Pharmaceuticals, Plan Les Ouates, Switzerland

Roles of mGluRs in synaptic plasticity: implications for therapeutic interventions. **Graham L. Collingridge**, University of Bristol, United Kingdom

Allosteric potentiators of metabotropic glutamate receptors as a novel approach for treatment of CNS disorders. **P. Jeffrey Conn**, Vanderbilt University

mGlu receptors: Beyond the regulation of synaptic transmission. **Ferdinando Nicoletti**, University of Catania, Italy

### MONDAY, April 30, 3:00 – 5:30 PM

#### **Early Clinical Development Strategies for Monoclonal Antibody Experimental Agents in Non-Oncology Indications**

Chair: Mary A. Mascelli

Anti IL-12/23 monoclonal antibody for psoriasis: Biomarker validation of mechanism-of-action and disease pathogenesis.

**Kevin D. Cooper**, Case Western Reserve University and University Hospitals of Cleveland

Early development of drugs with new mechanisms of action. Question-based rather than study-based development. **Adam F. Cohen**, Center for Human Drug Research, Leiden, The Netherlands  
Immune response analysis for monoclonal antibodies in development: Past experience and new expectations. **Carrie L. Wagner**, Centocor, Inc., Malvern, PA  
Regulatory considerations related to the design of early clinical trials of monoclonal antibody experimental agents. **Libero Marzella**, FDA

**P** **Recent Advances in our Understanding of the Flavin-containing Monooxygenases: Role in Disease and Adverse Drug Reactions: In Memory of Daniel Ziegler**

Chairs: Ronald N. Hines and David E. Williams

Introduction/overview and dedication to Daniel M. Ziegler. **Fred F. Kadlubar**, NCTR, FDA, Jefferson, AR  
FMO1 and FMO3 developmental expression: Mechanisms and variability. **Ronald N. Hines**, Medical College of Wisconsin

FMO genetic polymorphisms and impact on function. **Elizabeth A. Shephard**, University College London

FMO and drug hypersensitivity. **Craig K. Svensson**, Purdue University of College of Pharmacy, Nursing and Health Sciences

Summary and future direction of FMO research. **David E. Williams**, Oregon State University

• **Imaging Localized cAMP Signaling Dynamics Organized by AKAP Scaffold Proteins and Phosphodiesterases**

Chair: Mark L. Dell'Acqua

Cell signaling in space and time. **John D. Scott**, Oregon Health Sciences University

Coordination of neuronal cAMP and calcium signaling by AKAP scaffolding. **Mark L. Dell'Acqua**, University of Colorado at Denver Health Sciences Ctr.

Local cAMP signaling regulation of T-cell activation. **Kjetil Taskén**, University of Oslo

Imaging local cAMP and PKA dynamics in cardiac myocytes. **Manuela Zaccolo**, University of Padua

(Abstract 5960) Functional segregation of prostaglandin- and isoproterenol-induced cAMP signals. **Thomas C. Rich**, Univ. of South Alabama Col. of Med.

- A junior speaker will be selected from the contributed abstracts to give a short talk in this symposium

**P** Pharmacogenomics Theme

**D** Developmental Pharmacology Theme

**TUESDAY, May 1, 9:30 AM – 12:00 PM**

**D** **Molecular Mechanisms of Chemical Teratogenesis**

Chair: Peter G. Wells

Oxidative DNA damage and repair in teratogenesis. **Peter G. Wells**, University of Toronto

Oxidative stress and signal transduction in teratogenesis. **Jason Hansen**, Emory University School of Medicine

Oxidative stress in diabetic teratogenesis. **Mary R. Loeken**, Harvard University

Neonatal apoptotic mechanisms of neurodevelopmental deficits. **John W. Olney**, Washington University School of Medicine

• **Regulation of Drug Metabolizing Enzymes and Transporters in Inflammatory Disease States:**

*A Symposium in Honor of the Career of Dr. Kenneth W. Renton*

Chair: Edward T. Morgan

Overview and tribute to the contributions of Dr. Kenneth W. Renton. **Edward T. Morgan**, Emory University

Inflammation and infection: Hazards for drug safety. **Kenneth W. Renton**, Dalhousie University

Regulation of cytochrome P450 and UGT enzymes in live and sterile models of infection. **Edward T. Morgan**, Emory University

Regulation of drug transporters in inflammation. **Micheline Piquette-Miller**, University of Toronto

Repression of CYP3A4 by inflammation associated with cancer. **Graham Robertson**, University of Sydney

Regulation of CYP3A metabolism and P-glycoprotein-mediated drug transport during CNS inflammation. **Kerry B. Goralski**, Dalhousie University

• **P** **Impact of Pharmacogenomics on the Treatment of Neuropsychiatric Disorders: From Drug Target to Targeted Therapy**

Chair: Laura K. Nisenbaum

Genetic variants associated with neuropsychiatric disease susceptibility. **David Goldman**, NIAAA, NIH

Current applications of pharmacogenetic testing in antidepressants and antipsychotic treatment: Focusing on CYP2D6 and CYP2C19. **Jose de Leon**, University of Kentucky  
Genetic variation and response to antidepressants. **Roy H. Perlis**, Harvard Medical School/Massachusetts General Hospital  
From genome scan to functional biology for antipsychotic-induced weight gain. **Laura K. Nisenbaum**, Eli Lilly and Company

## TUESDAY, May 1, 3:00 – 5:30 PM

### ● **Multiple Calcium Channels in the Vasculature: Regulation of Arterial Tone**

Chair: Joseph E. Brayden

Store-operated channels and vascular tone. **Victoria M. Bolotina**, Boston University School of Medicine

Receptor- and stretch-induced activation of calcium entry channels. **Donald L. Gill**, University of Maryland School of Medicine

Calcium sparklets in arterial smooth muscle. **Luis F. Santana**, University of Washington School of Medicine

Mechanisms of Ca<sup>2+</sup> regulation mediated by TRP channels in vascular smooth muscle. **Joseph E. Brayden**, University of Vermont College of Medicine

### **P** **Mouse Meets Man: Advanced Murine Models for Use in Cancer Drug Development**

Chairs: Thomas C. Stover and David Tuveson

Genetically engineered mouse models of pancreatic exocrine cancer. **David A. Tuveson**, Cambridge Research Institute/CRUK, Cambridge, U.K.

Pathway-specific biomarkers in mouse models of prostate cancer. **Charles L. Sawyers**, Memorial Sloan Kettering Cancer Center

Modeling the role of BRCA1, BRCA2, and Trp53 loss-of-function in breast cancer. **Jos Jonkers**, Netherlands Cancer Institute

Mutant EGFR-dependent lung cancer: Lessons from mouse models. **Katerina A. Politi**, Memorial Sloan Kettering Cancer Center

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**P** Pharmacogenomics Theme

**D** Developmental Pharmacology Theme

## WEDNESDAY, May 2, 8:30 – 11:00 AM

### ● **D** **Perinatal Stress Alters Drug Responses into Adulthood**

Chair: Mike J. Kuhar

Maternal separation as a perinatal stressor. **Darlene Francis**, University of California, Berkeley

Maternal separation affects propensity to abuse drugs. **Mike J. Kuhar**, Emory University

Effects of maternal separation on brain serotonin systems. **Aleksandra Vicentic**, NIMH, NIH

Neonatal isolation as a model of stress and its effects on drugs in adulthood. **Therese A. Kosten**, Baylor College of Medicine

Epigenetic mechanisms as candidates for long term changes in drug effects. **Moshe Szyf**, McGill University

### ● **Nitric Oxide Deficiency and Cardiovascular Disease**

Chair: Alex F. Chen

Nitric oxide deficiency and cardiovascular disease: Lessons from NO synthase knockout and transgenic studies. **Marielle Scherrer-Crosbie**, Massachusetts General Hospital

Polymorphisms in the eNOS gene and the risk of ischemic heart disease. **Dennis McNamara**, University of Pittsburgh Medical Center

GTP Cyclohydrolase I and eNOS uncoupling in salt-sensitive hypertension. **Alex F. Chen**, Michigan State University

Endothelial dysfunction and nitric oxide enhancing therapy: A new approach to the treatment of heart failure. **Anne L. Taylor**, University of Minnesota Medical School

(Abstract 206) Vascular endothelial growth factor 121 attenuates hypertension, myocardial necrosis and renal injury-induced by N<sup>0</sup>-nitro-L-arginine methyl ester and angiotensin II in rats. **Ying Zhang**, Amgen

### ● **P** **Genetic Variations in Regulatory Factors Affecting Drug Metabolism/Disposition**

Chair: Erin Schuetz

PPARG (peroxisome proliferator activated receptor gamma) variation may underlie response to TZD (troglitazone) therapy in women at risk for type 2 diabetes. **Richard M. Watanabe**, University of Southern California  
Pharmacogenetics of constitutive androstane receptor (CAR). **Jatinder K. Lamba**, St. Jude Children's Research Hospital (Abstract 1568) CAR2 displays unique ligand binding and RXR $\alpha$  heterodimerization characteristics. **Joshua G. Dekeyser**, Penn State  
FXR: Interindividual polymorphisms and variation in FXR expression. **Richard B. Kim**, University of Western Ontario  
PXR: Genetic variants of PXR (NR1I2) and their implications in drug metabolism and pharmacogenetics. **Erin Schuetz**, St. Jude Children's Research Hospital

● **Pharmacology and Signal Transduction of Taste**

Chair: R. Kyle Palmer

Coding of taste signaling from receptor to brain. **Robert F. Margolskee**, Mount Sinai School of Medicine  
Behavioral assessment of taste function in rodent models. **Alan C. Spector**, University of Florida  
Transient receptor potential (TRP) channels in taste signaling. **Robert W. Bryant**, Linguagen Corporation  
Effects of therapeutic drugs on taste and their impact on compliance and nutritional status. **Susan S. Schiffman**, Duke University Medical Center

**Mechanisms of Idiosyncratic Drug Reactions**

Chairs: Cynthia Ju and Dennis R. Petersen

1 Cellular consequences of drug bioactivation. **B. Kevin Park**, University of Liverpool  
2 Role of cytokines and other factors in determining susceptibility to drug-induced liver injury. **Lance R. Pohl**, NHLBI, NIH  
3 Animal models of idiosyncratic drug reactions. **Jack Uetrecht**, University of Toronto Faculty of Pharmacy and Medicine  
4 Vaccine-induced cellular immunity: Integrating innate and adaptive signaling pathways. **Ross M. Kedl**, National Jewish Medical and Research Center, Denver  
5 How do systemically administered drugs provoke reactions in the skin? **Craig K. Svensson**, Purdue University College of Pharmacy, Nursing and Health Sciences

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**P** Pharmacogenomics Theme

**D** Developmental Pharmacology Theme

■ **DIVISION SESSIONS** ■

**SUNDAY, April 29, 9:30 AM – 12:00 PM**

**Division for Pharmacology Education Symposium:** Pharmacological Characterization of Modified Genotypes: The Fundamentals

Chair: William B. Jeffries

Introduction. **William B. Jeffries**, Creighton Univ.

4 The use of transgenic animals in drug discovery. **Bryan F. Cox**, Abbott Laboratories  
2 Assessing cardiovascular phenotypes in the whole animal. **Joseph R. Haywood**, Michigan State University  
1 Measurement of behavior modifications in genetically altered animals. **Sam J. Enna**, University of Kansas Medical Center  
3 Measurement of drug metabolism and pharmacokinetics in genetically modified mice. **Denis M. Grant**, University of Toronto

**MONDAY, April 30, 9:30 AM – 12:00 PM**

**Division for Drug Discovery, Development, and Regulatory Affairs Symposium:** Assessing Abuse Liability for Drug Discovery and Development: A Changing Environment

Chair: Richard H. Alper

Cellular and molecular mechanisms contributing to substance abuse and neurotoxicity. **Annette E. Fleckenstein**, University of Utah  
The translation and application of rodent models for abuse liability testing. **Andy Mead**, Pfizer, Ltd., Sandwich, U.K.  
Clinical abuse liability assessments. **Edward M. Sellers**, Ventana Clinical Research Corporation, Toronto  
Regulatory environment in abuse liability assessments. **Douglas Throckmorton**, FDA.

**MONDAY, April 30, 3:00 – 5:30 PM**

**Division for Behavioral Pharmacology Symposium:** Its all the Rave: Behavioral, Neuropharmacological and Toxic Effects of MDMA and Methamphetamine

Chairs: Michael A. Nader and Matthew L. Banks

1 Tolerance to the reinforcing and subjective effects of MDMA in humans. **Andrew C. Parrott**, University of Wales, Swansea

5 The role of serotonin receptors in the behavioral pharmacology of MDMA. **Kathryn A. Cunningham**, University of Texas Medical Branch, Galveston

2 MDMA- and MA-induced brain changes: Imaging studies in nonhuman primates and humans. **Una D. McCann**, Johns Hopkins University School of Medicine

4 Neurochemical alterations and long-term consequences of MA and MDMA abuse. **Annette E. Fleckenstein**, University of Utah

3 Ambient temperature interactions related to MDMA abuse; MDMA abuse and neurotoxicity as measured by PET. **Matthew L. Banks**, Wake Forest University School of Medicine

**Division for Cardiovascular Pharmacology Programming:**

**Junior Scientists Competition**

Chairs: Emel Songu-Mize, Alyson Miller and Kristina Fetalvero

**Graduate Student Presentations:**

Diminished MnSOD contributes to endothelial progenitor cell dysfunction, impaired angiogenesis and wound healing in type 2 diabetes. **Eric J. Marrotte**, Michigan State University (Advisor: Alex Chen)

Molecular characterization of the 8-iso-PGF<sub>2α</sub> alpha interaction with the thromboxane A<sub>2</sub> receptor and its signaling mechanisms in human platelets. **Fadi T. Khasawneh**, University of Illinois at Chicago (Advisor: Guy Le Breton)

Rosuvastatin provides pleiotropic protection against pulmonary hypertension, right ventricular hypertrophy and coronary endothelial dysfunction in rats. **Xiaowei Sun**, University of Alabama at Birmingham (Advisor: David D. Ku)

**Postdoctoral Scientist Presentations:**

ADP stimulates human endothelial cell migration via P2Y1 receptor-mediated MAPK pathways. **Jianzhong Shen**, Cleveland Clinic Foundation (Mentor: Paul E. DiCorleto)

Caveolin-1 potentiates Src and Akt signaling in isoflurane-induced cardiac protection. **Yasuo M. Tsutsumi**, UCSD (Mentor: David M. Roth)

**Graduate Student runners-up posters:**

Ethanol preconditioning is dependent on the activation of 5'-AMP-activated protein kinase. **F. Spencer Gaskin**, University of Missouri (Advisor: Ronald J. Korthuis)

Overexpression of the inward rectifier K<sup>+</sup> current (IK1) accelerates and stabilizes rotors. **Sami F. Noujaim**, SUNY Upstate Medical University (Advisor: Jose Jalife)

Chemical genetic analysis of glycome regulation of vasculogenesis. **Stephanie M. Piecewicz**, Harvard/MIT (Advisor: Shiladitya Sengupta)

Estrogen decreases mitochondrial ROS production in human brain endothelial cells. **Ali Razmara**, UCI (Advisor: Sue P. Duckles)

**Postdoctoral Scientist runner-up poster:**

Basal and ACh-stimulated intracellular Ca<sup>2+</sup> signals in intact endothelium originate from IP<sub>3</sub>-sensitive stores. **Jonathan Ledoux**, University of Vermont (Mentor: Mark T. Nelson)

**Division for Cardiovascular Pharmacology Benedict R. Lucchesi Distinguished Lecture**

Chair: David D. Ku

A Novel Cardioprotective Paradigm: The CYP450 Pathway of Arachidonic Acid Metabolism. **Garrett Gross**, Medical College of Wisconsin

**Division for Toxicology Symposium:** Toxicogenomics Approaches for Evaluating Drug and Chemical Toxicity

Chair: Curt J. Omiecinski

Gene expression profiling in primary human hepatocytes as predictors of interindividual variability in chemical response.

**Curt J. Omiecinski**, Penn State University

Application of toxicogenomics towards idiosyncratic hepatotoxicity. **Jeffrey F. Waring**, Abbott Laboratories

The Comparative Toxicogenomics Database: Promoting understanding about the mechanisms of chemical actions. **Carolyn Mattingly**, Mount Desert Island Biological Laboratory, Salisbury Cove, ME

Genetic and genomic approaches to predicting chemical toxicity. **Christopher A. Bradfield**, University of Wisconsin

Data analytic platforms and methods for mining proteome data and its integration with genomic information. **Martin W. McIntosh**, Fred Hutchinson Cancer Research Ctr, Seattle

**TUESDAY, May 1, 9:30 AM – 12:00 PM**

**P** **Division for Clinical Pharmacology, Pharmacogenetics, and Translational Medicine Symposium:** The Regulatory Approach to Pharmacogenomics: An International Perspective

Chairs: Lawrence J. Lesko and Felix W. Frueh

U.S. FDA regulatory approaches to pharmacogenomics. **Felix W. Frueh**, FDA

A framework for pipeline efficacy pharmacogenetics. **Allen D. Roses**, GlaxoSmithKline, Inc., Research Triangle Park

Development of devices for pharmacogenomic testing. **Janet A. Warrington**, Affymetrix

Drug-test co-development: A real-life perspective. **Jeffrey R. Gulcher**, deCODE Genetics

Panel discussion. From science to regulation to medical practice: The challenge of implementation. **Larry J. Lesko**, FDA and **Wayne A. Rosenkrans**, AstraZeneca and Personalized Medicine Coalition

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**P** Pharmacogenomics Theme

**D** Developmental Pharmacology Theme

**TUESDAY, May 1, 2:00 – 3:00 PM**

**Division for Drug Metabolism Early Career Achievement Award Lecture**

Chairs: Larry S. Kaminsky and Kenneth E. Thummel

Speaker: **Qing Ma**, NIOSH, CDC

Title: Xenobiotic-activated receptors: From transcription, to drug metabolism, to disease.

**TUESDAY, May 1, 3:00 – 5:30 PM**

**Drug Metabolism Division Platform Session: Biotransformation and Drug Transport**

Chairs: Larry S. Kaminsky and Kenneth E. Thummel

**Division for Molecular Pharmacology Postdoctoral Award Finalists**

Chair: Stephen M. Lanier

Along the continuum of G-protein signaling with additional thoughts on CQ and PQ relative to the art of science. **S.M. Lanier**. Med. Univ. of South Carolina

**Postdoctoral Scientist Award Finalists:**

The retinoic acid receptor-related orphan receptor (ROR) regulates human CYP2C8. **Y. Chen**. NIEHS, NIH, Res. Triangle Park, NC. Advisor: J.A. Goldstein

Cellular models of altered base excision repair reveal a differential contribution of reactive oxygen species-induced 7,8-dihydro-8-oxo-2'-deoxyguanosine to the cytotoxic mechanisms of platinum anticancer drugs cisplatin and oxaliplatin. **T.J. Preston**. Univ. of Toronto Fac. of Pharm. Advisor: P.G. Wells

Impaired c-src kinase regulation of muscle contraction during colonic inflammation is due to nitrosylation of Ca<sup>2+</sup> channels. **G.R. Ross**. Virginia Commonwealth Univ. Advisor: H. Akbarali

Function of caveolin-1 in paclitaxel-mediated cytotoxicity in breast cancer. **A.N. Shajahan**. Georgetown Univ. Advisor: R. Clarke

Vasoactive intestinal peptide transactivates the androgen receptor through a PKA-dependent extracellular signal-regulated kinase pathway in prostate cancer cells. **Y. Xie**. Creighton Univ. Advisor: Y. Tu

**Division for Neuropharmacology Postdoctoral Scientist Award Finalists**

Chair: Susan G. Amara

Neurotransmitter transporters: A dance of domains and substrates. **Susan G. Amara**, University of Pittsburgh School of Medicine

Reciprocal modulation of function between the D1 and D2 dopamine receptors and the Na<sup>+</sup>/K<sup>+</sup>-ATPase, a novel member of the dopamine receptor signalplex. **Lisa A. Hazelwood**, NINDS, NIH

Enhancement of endogenous cannabinoid responses through FAAH inhibition provides cellular and functional protection against excitotoxic brain damage. **David A. Karanian**, University of Connecticut

Distinct roles of spinal muscarinic receptor subtypes in control of glycinergic input revealed by muscarinic receptor knockout mice. **Hong-Mei Zhang**, University of Texas, Houston

Alteration in acetylcholinesterase glycosylation of rat brain in memory disorder. **Amitava Das**, Mayo Clinic College of Medicine

Impaired HPA axis and their feedback regulation in SERT knockout mice. **Xue Jiang**, University of Texas Medical Branch, Galveston

**Division for Systems and Integrative Pharmacology Symposium:** Regenerative Pharmacology: Integrative Pharmacology of Engineered Tissues

Chair: George J. Christ

Regenerative pharmacology: An overview. **George J. Christ**, Wake Forest University

Mechanical and matrix effects on cell phenotype in engineered cardiovascular tissues. **Jan P. Stegemann**, Rensselaer Polytechnic Institute, Troy, NY

Challenges and opportunities in engineering clinically relevant bladder implants: The importance of pharmacology and phenotype. **Tim Bertram**, Tengion, Inc, Winston-Salem

Pharmacology of engineered and regenerating tissues. **Karl-Erik Andersson**, Wake Forest University

Cyclic GMP and vascular smooth muscle cell phenotype. **Thomas Lincoln**, University of South Alabama College of Medicine

## ■ LECTURES AND SPECIAL SESSIONS ■

### SATURDAY, April 28

12:30-3:00 PM

**2007 Teaching Institute:** Integrated Strategies in Pharmacology Education: Simulation, Case- & Team-Based Approaches

Chairs: Lynn M. Crespo and Jordan E. Warnick

Overview: Multiple approaches to the teaching of pharmacology. **Lynn M. Crespo**, University of South Florida and **Jordan E. Warnick**, University of Maryland School of Medicine

Lecture-based approach to pulmonary pharmacology. **Jordan E. Warnick**, University of Maryland School of Medicine

Case-based approaches in pulmonary disease. **Lynn M. Crespo**, University of South Florida

Simulators in acute asthma case (albuterol and steroids). **John L. Szarek**, Ross University School of Medicine

Team-based approach to pulmonary pharmacology. **Robert J. Theobald**, A.T. Still University

1:00-3:15 PM

**Graduate Student-Postdoctoral Colloquium: Pharma Phair**

Chairs: Stephanie W. Watts and Walter C. Prozialeck

Trainees will first hear, then interact with professionals from different career paths to view the wide variety of options open to them after their formal training.

Academicians: **Barbara S. Beckman**, Tulane University School of Medicine

Biotech: **Michael Babich**, ImmvaRx

Consultant: **Marie T. Rock**, Chirality, LLC

Legal: **Blair E. Taylor**, Venable LLP

NIH: **Lance R. Pohl**, NIH, NHLBI

Pharmaceutical Industry: **Ryan M. Fryer**, Abbott Laboratories

Pharmacy: **Timothy J. Maher**, Massachusetts College of Pharmacy

Public Affairs: **James S. Bernstein**, ASPET

Science Writer: **Jill U. Adams**, Albany, NY

Scientific Officer: **Christine K. Carrico**, ASPET

Teacher: **Walter C. Prozialeck**, Midwestern University

3:15-5:30 PM

**Workshop: Mentoring: How to Find a Good Mentor and How to Be a Good Mentor**

Chairs: Martha I. Dávila-García and Gonzalo E. Torres

How to find a good mentor. **Howard G. Adams**, H.G. Adams and Associates, Inc.

How to be a good mentor. **James G. Townsel**, Meharry Medical College

### SUNDAY, April 29

8:15-9:15 AM

**Julius Axelrod Award Lecture**

Phox and Nox and ROS in a box of dopaminergic neurodegeneration: Roles of MMP-3. **Tong H. Joh.**, Cornell University Weill Med College

1:30-2:30 PM

**Torald Sollmann Award Lecture**

A career in pharmacology: In search of beauty and joy. **Sue P. Duckles**, University of California, Irvine

**MONDAY, April 30**

8:00-10:00 AM

**ASPET/APS Women's Committees Workshop:** Being Heard: The Microinequities That Tilt the Playing Field

Chairs: Susan F. Steinberg, Holly H. Brevig and Kathleen H. Berecek

Overview: Women in academic science and engineering - Beyond bias and barriers. **Joan A. Steitz**, Yale University

Leveling the playing field: A focus on students. **Barbara A. Horwitz**, University of California, Davis

Institutional strategies to improve the status of women. **Jeanine D'Armiento**, Columbia University, College of Physicians and Surgeons

Succeeding in a male-dominated environment. **Florence P. Haseltine**, NICHD, NIH

Breakout sessions.

8:15-9:15 AM

**Ray Fuller Lecture in the Neurosciences:** Case Study from Bench to Bedside: Modulators of mGlu2 and mGlu3 Receptors to Treat Psychiatric Disorders

Lecturer: Darryle D. Schoepp, Lilly Res. Labs.

12:45-1:45 PM

**EB 2007 Public Policy Session:** NIH at the Crossroads: How Diminished Funds Will Impact Biomedical Research and What Scientists Can Do About It

Chair: Leo T. Furcht

Speakers:

**Elias Zerhouni**, NIH Director

**John E. Porter**, Hogan & Hartson and former Chair of US House of Representatives Labor/HHS Appropriations Subcommittee

Rep. Porter will provide a legislative overview of the FY 2008 outlook for the NIH. He will discuss how scientists have an obligation as citizens to become politically active and aware and make suggestions for what needs to be done to make an impact. Dr. Zerhouni will provide details on the current state of the NIH enterprise and offer projections based on the FY 2008 budget.

■ **SATELLITE MEETINGS** ■

**FRIDAY, April 27 – Saturday, April 28**

**3RD GPCR Colloquium**

(Separate, Advance Registration Required)

Chairs: Kim A. Neve and Olivier Civelli

**Day 1**

The structural basis for GPCR oligomerization: Implications for activation. **Jonathan A. Javitch**, Columbia University College of Physicians and Surgeons

Heterooligomerization of Class A GPCRs creates novel signaling units distinct from their constituent GPCR homooligomers. **Susan R. George**, University of Toronto

GPCR ligand binding and release: Insights and mysteries. **David L. Farrens**, Oregon Health and Science University

G proteins and their accessory proteins. **Stephen M. Lanier**, Medical University of South Carolina

Talk selected from abstracts

Interactions between GPCRs and receptor tyrosine kinases. **Kevin J. Catt**, NICHD

GPCRs, arrestins, and ubiquitination. **Sudha K. Shenoy**, Duke University Medical Center

Talk selected from abstracts

Multiplexing resonance energy transfer approaches to study GPCR signaling complexes in living cells. **Michel Bouvier**, University of Montreal

Use of genetically engineered mice to unravel the functions of dopamine receptors. **Emiliana Borrelli**, University of California, Irvine

## **Day 2**

GPCRs in arousal and anxiety. **Rainer K. Reinscheid**, University of California, Irvine

Talk selected from abstracts

The role of GPR30 in estrogen signaling. **Eric R. Prossnitz**, University of New Mexico Health Sciences Center

Therapeutic benefits of inverse agonism at cannabinoid receptors. **Gerard Le Fur**, Sanofi-Aventis

Novel aspects of the melanocortin receptors. **Roger D. Cone**, Oregon Health and Science University

Leucocyte chemoattractant receptors: New molecules and new concepts. **Marc Parmentier**, Free University of Brussels

Special Lecture: The function and regulation of G protein coupled glutamate receptors in the neural network. **Shigetada Nakanishi**, Osaka Bioscience Institute

## **FRIDAY, April 27 – Saturday, April 28**

### **Behavioral Pharmacology Society Meeting**

(Separate, Advance Registration Required)

Contact Galen R. Wenger: [grwenger@uams.edu](mailto:grwenger@uams.edu) or 501-686-8040