

Experimental Biology 2006 Program

SYMPOSIA

Sunday Morning, April 2 (9:30 AM – 12:00 PM)

Cellular and Molecular Pathways of Neurotoxicity: Relevance to Neurodegenerative Diseases

Chair: Jean L. Cadet

Microglial activation as a specific marker for neurotoxicity. Donald M. Kuhn, Wayne State University
Iron dysregulation and neurodegeneration: Cause or consequence? Julie K. Andersen, Buck Institute for Age Research

Amphetamine-induced neuronal apoptosis: Novel observations. Irina N. Krasnova, DHHS, NIDA, NIH
Molecular bases of methamphetamine-induced neurodegeneration in the striatum. Jean L. Cadet, DHHS, NIH, NIDA

Alteration in mitochondrial membrane proteome and oxidative damage in MPTP-induced Parkinsonian models. Syed F. Ali, National Center for Toxicological Research/FDA, Jefferson, AR.

Ray Fuller Symposium: Signal Transduction: Relevance to CNS Disorders and Therapeutic Approaches

Chair: Marc G. Caron

Signaling pathways that underlie behavioral alternations in neurological disorders. Li-Huei Tsai, Harvard Medical School

5HT_{2A} receptor signaling and hallucinogen action: Implication for the therapy of psychotic disorders. Jay A. Gingrich, Columbia University College of Physicians and Surgeons

The yin and yang of 5HT_{2A} receptor signaling: Caveolin and RSK-2. Bryan L. Roth, Case Western Reserve University

Targeting of signal transduction mechanisms for therapeutic benefits. Hussein Manji, NIMH, NIH

Metabotropic Glutamate Receptors

Chairs: Michael F. O'Neill and Nick Moore

Molecular pharmacology of metabotropic glutamate receptors. Michael P. Johnson, Lilly Research Laboratories
The role of group II metabotropic glutamate receptors in cognition. Theresa M. Ballard, Hoffman-La Roche AG, Basel, Switzerland.

Metabotropic glutamate receptors in substance abuse. Linda M. Rorick-Kehn, Eli Lilly & Company

Metabotropic glutamate mechanisms in anxiety. Robert Hodgson, Schering Plough Research Inst.

Summation: Achievements and challenge. Michael F. O'Neill, Eolas Biosciences, Ltd., London

Imaging Modalities that Bridge Preclinical and Clinical Drug Efficacy

Chairs: Bryan F. Cox and Darrell R. Abernethy

Imaging bone and joint disease in the evaluation of drug effect: Insight into ultrastructural changes by microCT and infrared imaging. Nancy P. Camacho, Hospital for Special Surgery, New York

Molecular imaging with PET/SPECT in drug design and development. Dean F. Wong, Johns Hopkins University School of Medicine

Echocardiography for assessment of cardiac and vascular function: Role in assessing drug effects. Jane E. Freedman, Boston University School of Medicine

fMRI of the brain: Utility in assessment of drug targets. Stephen M. Rao, Medical College of Wisconsin and Neuroagnostics, Inc., Milwaukee

In vivo NMR: Role in phenotyping of transgenic disease models. Richard Spencer, NIA, NIH

Embryonic Stem Cell Therapy: From Cardiogenesis to Heart Repair

Chair: Andre Terzic

Remarks by chair. Andre Terzic, Mayo Clinic

Rescue of cardiac defects with embryonic stem cells. Diego Fraidenraich, Sloan-Kettering Cancer Institute

Embryonic stem cells: Guided cardiogenesis for safe repair. Atta Behfar, Mayo Clinic

Human embryonic stem cells: Promise for cardioregenerative medicine. Timothy J. Kamp, University of Wisconsin Medical School, Madison

Stem cells: Application in clinical practice. Nabil Dib, Arizona Heart Institute, Phoenix

Best Practices in Pharmacology Education

Chair: Jordan E. Warnick

Principles of best practices in medical education – How do we meet standards? Jordan E. Warnick, University of Maryland School of Medicine

Applied learning in pharmacology. John L. Szarek, Ross University School of Medicine

Construction of exam questions: Relationship to learning objectives and board examinations. Jack W. Strandhoy, Wake Forest University School of Medicine

The classroom as stage. Ann Woodworth, Northwestern University, Evanston, IL

Sunday Afternoon, April 2 (3:00 PM – 5:30 PM)

Beyond Listening: A Workshop on Strategies that Actively Engage Students in the Classroom

Chairs: William B. Jeffries and Raymond F. Orzechowski

Students' attention spans are limited, so the most well-crafted lectures can reach a point of diminishing returns. In this workshop, leaders will provide descriptions of teaching/learning techniques that can be integrated into classroom lectures. Attendees will participate in activities and discussions about instructional approaches that engage both undergraduates and medical school students interactively in a traditional classroom setting. Attendance is limited to 40 people.

Facilitators:

William B. Jeffries, Creighton University School of Medicine

Raymond F. Orzechowski, University of the Sciences in Philadelphia

Carol A. Weiss, Villanova University School of Medicine

Kathryn N. Huggett, Creighton University School of Medicine

Pediatric Clinical Pharmacology – Recent Advances and Future Challenges

Chairs: D. Gail McCarver and J. Steven Leeder

Introduction. D. Gail McCarver, Medical College of Wisconsin

Developmental and regulatory issues relevant to drug development in children. Ralph E. Kauffman, Children's Mercy Hospital, Kansas City, MO

Ontogeny of drug biotransformation and pathogenesis of pediatric ADRs. J. Steven Leeder, Children's Mercy Hospital, Kansas City, MO

Use of PBPK modeling to simulate the disposition of drugs and toxicants in children. Gary Ginsburg, Connecticut Department of Health

Pharmacogenetics of the response to inhaled steroids in asthma. Kelan Tantisira, Brigham and Women's Hospital

***What Regulates the Regulators? Factors that Alter Expression of the Nuclear Receptors Which Regulate Drug-metabolizing Enzymes**

Chairs: Allan B. Okey and David S. Riddick

Crosstalk in the network of nuclear receptors. Patrick Maurel, INSERM, Montpellier, France

Tissue differences in expression of splice variants of CAR and PXR. Erin G. Schuetz, St. Jude Children's Research Hospital

Modulators of AH receptor expression and impact of AHR on other nuclear receptor pathways. Allan B. Okey, University of Toronto

Modulation of xenobiotic metabolizing enzyme expression by caloric restriction through PGC-1 α and PPAR α . Chris Corton, EPA

* In vivo endocrine regulation of rat hepatic aryl hydrocarbon receptor expression and function. Anne K. Mullen, Univ. of Toronto

* *Junior speaker chosen from meeting abstracts*

5-HT_{2C} Receptors: Pharmacology and Therapeutic Opportunities

Chairs: Sharon Rosenzweig-Lipson and Jack Bergman

Modification of the behavioral effects of drugs of abuse by 5-HT_{2C} ligands. Paul J. Fletcher, Center for Addiction and Mental Health, Toronto

Stress- and drug-induced changes in 5-HT_{2C} pre-mRNA editing. Claudia Schmauss, Columbia University

Differential roles of 5-HT_{2C} and 5-HT_{2C} receptor systems in obesity. Keith J. Miller, Bristol-Myers Squibb

5-HT_{2C} receptor agonist based approaches to the treatment of schizophrenia/depression. Sharon Rosenzweig-Lipson, Wyeth Research

Cardiac Stem Cells: Revolutionizing Myocardial Biology and Regenerating the Heart

Chair: Mark Sussman

Cardiac stem cells. Jan Kajstura and Annarosa Leri, New York Medical College

Engineering cardiac stem cells to enhance myocardial regeneration. Mark A. Sussman, San Diego State University

Is the human heart a self-renewing organ? Piero Anversa, New York Medical College

Use of cardiac stem cells for regeneration of infarcted myocardium. Roberto Bolli, University of Louisville

Monday Morning, April 3 (9:30 AM – 12:00 PM)

***Using Genetic Approaches to Define the Role of Adenosine in the Cardiovascular System**

Chair: John A. Auchampach

Role of A_{2A} adenosine receptors in tissue injury. Joel Linden, University of Virginia.

Role of A₁ adenosine receptors in regulating kidney function. Jurgen B. Schnermann, NIDDK, NIH.

Phenotypic characterization of A_{2B} adenosine receptor gene “knock-out” mice. Katya Ravid, Boston University School of Medicine

A₃ adenosine receptors and cardiac protection. John A. Auchampach, Medical College of Wisconsin

* Agonists of the A_{2A} adenosine receptor reduce inflammation and hypoxia-induced pulmonary damage in transgenic sickle cell mice. Kori Wallace, University of Virginia

* Characterization of expression and function of adenosine receptors in mouse neutrophils. Dharini van der Hoeven, Medical College of Wisconsin

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Preclinical Models for Cognitive Enhancers: Within Reach or Still Too Great a Stretch?

Chairs: Gary S. Lynch and Kathleen M. Katak

A skeptical look at the prospects, near term at least, for cognitive enhancement. Richard G.M. Morris, University of Edinburgh

Recollection-like memory retrieval in rats. Howard Eichenbaum, Boston University

Can animals recall the past and plan for the future? Nicola S. Clayton, University of Cambridge

Valuation and decision-making in primate brain. William T. Newsome, Stanford University School of Medicine

Will cognitive enhancers arrive in the clinic before we have preclinical tests for them? Gary S. Lynch, University of California, Irvine

Targets of Toxicant Sensitivity in Aging

Chair: Harihara M. Mehendale

Aging protects against chlordecone amplified progression of haloalkane hepatotoxicity. Harihara M. Mehendale, University of Louisiana School of Pharmacy

Age related molecular mechanisms of acute renal failure. Alan R. Parrish, Texas A&M University

Aging and sensitivity to organophosphorus insecticides: Toxicokinetic and toxicodynamic factors. Carey N. Pope, Oklahoma State University

An association between extended lifespan and elevated xenobiotic metabolism is revealed through gene expression studies. Gretchen J. Darlington, Baylor College of Medicine

Biotransformation and Drug Transport: Drug Metabolism Platform Session

Chairs: David S. Riddick and Laurence S. Kaminsky

Division for Pharmacology Education Symposium: Distance Education in Pharmacology: Promises and Pitfalls

Chair: Patangi K. Rangachari

Monday Afternoon, April 3 (3:00 PM – 5:30 PM)

Division for Behavioral Pharmacology Symposium: Behavioral Pharmacology at Fifty: A Look to the Future

Chairs: Carol A. Paronis and Linda Dykstra

Effects of antipsychotics in inbred mice: A confluence of pharmacology, genetics, and behavior. Todd L. McKerchar, University of Kansas

Studying a “dirty” drug: Using drug discrimination procedures to identify mechanism of action. Larry P. Carter, Johns Hopkins University School of Medicine

Antidepressant-like effects of delta-opioid agonists. Emily M. Jutkiewicz, University of Michigan Medical School

MDMA is plural: in vivo pharmacology of the racemate in comparison with its component isomers. Bill E.

Fantegrossi, Emory University

Dopamine transporter ligands as potential cocaine antagonists: Contribution of in vivo rate of occupancy at the dopamine transporter. Rajeev I. Desai, NIDA, NIH

Behavioral pharmacology at 50. Alice M. Young, Texas Tech University Health Science Center

Division for Drug Discovery, Drug Development and Regulatory Affairs Symposium: Innovative Drug Delivery Strategies: Knocking on the Door of Drug Development

Chair: Thomas C. Stover

Keynote Talk: Novel medical aerosol research toward new treatments of infectious disease. David A. Edwards, Harvard University

Targeting drugs to the vascular endothelium. Vladimir Muzykantov, University of Pennsylvania School of Medicine

Controlled delivery technology to the peripheral and central nervous systems. Daniel S. Kohane, Massachusetts General Hospital

Antitumor drug delivery using dendrimers and liposomes. Francis C. Szoka, Jr., UCSF

Division for Drug Metabolism Symposium: Metabolomic/Metabonomic Probes of Drug Metabolism Consequences

Chair: Larry S. Kaminsky

Metabonomic-based probes of ranitidine idiosyncratic hepatotoxicity. Jane F. Maddox, Michigan State University

Metabonomic-based probes of the effects of drug metabolism. Hector C. Keun, Imperial College, London

Application of human metabolomics to understanding dietary influences on drug metabolism. J. Bruce German, University of California, Davis

Understanding mechanisms of drug toxicity using UPLC coupled to time of flight mass spectrometry. Robert S. Plumb, Waters Corporation

Systems and Integrated Pharmacology Division Symposium: Pharmacology of Cytokines in the Cardiovascular System

Chairs: R. Clinton Webb and Michael W. Brands

Introduction. R. Clinton Webb, Medical College of Georgia

Role of cytokines in flow-induced vascular remodeling. Vyacheslav A. Korshunov, University of Rochester

Tumor necrosis factor-alpha modulates the pressor activity of angiotensin II. Joseph Francis, Louisiana State University, Baton Rouge

Interleukin-6 contributes to salt-sensitive hypertension. Michael W. Brands, Medical College of Georgia
Tumor necrosis factor-alpha and hypertension in response to reduced uterine perfusion. Babbette LaMarca, University of Mississippi School of Medicine

Tuesday Morning, April 4 (9:30 AM -12:00 PM)

New Aspects of Glucocorticoid Signaling

Chairs: Peter J. Barnes and Jeffrey S. Fedan

Glucocorticoid effects on chromatin remodeling. Peter J. Barnes, Imperial College, London

Glucocorticoid effects on gene expression. Keith R. Yamamoto, UCSF

Glucocorticoid receptor structure and regulation. John A. Cidlowski, NIEHS, NIH

Novel glucocorticoid receptor ligands. Jeffrey N. Miner, Ligand Pharmaceuticals, Inc.

Mood Stabilizers and Antidepressants: New Mechanisms for Old Compounds

Chair: De-Maw Chuang

Introduction.

Anti-apoptotic effects and therapeutic potentials of mood stabilizers for neurodegenerative diseases. De-Maw Chuang, NIH, NIMH

Contribution of hippocampal neurogenesis to behavioral effects of antidepressants. Rene Hen, Columbia University Medical Ctr.

Novel therapeutic applications for lithium and valproic acid. Peter S. Klein, University of Pennsylvania School of Medicine

Preclinical and clinical evidence for the trophic actions of mood stabilizing drugs. Hussein Manji, NIMH, NIH

Function, Regulation, and Genetic Polymorphisms of the Cytochrome P450 Reductase

Chair: Xinxin Ding

How are NADPH-cytochrome P450 reductase and multiple cytochromes P450 organized in membranes. W.L. Backes, Louisiana State University Health Science Ctr.

In vivo function of P450 reductase-dependent enzymes in mutant mouse models. Xinxin Ding, New York State Dept. of Health, Albany

Mutant P450 oxidoreductase causes disordered steroidogenesis in human patients. Walter L. Miller, UCSF

Developmental function and regulation of P450 reductase. Anna L. Shen, Univ. of Wisconsin-Madison

Cytochrome P450 reductase: Other pathways and alternative reductases. Todd D. Porter, University of Kentucky

***Role of COX-2 in the Regulation of Cardiovascular Function**

Chairs: Albert L. Hyman and Ben R. Lucchesi

COX inhibition and cardiovascular hazard. Garret A. Fitzgerald, University of Pennsylvania

Regulation of macula densa function and renin secretion by COX-2. Raymond C. Harris, Vanderbilt University Medical Center

Role of COX-2 in the pulmonary circulation. Philip J. Kadowitz, Tulane University Medical Center

Role of renal medullary COX-2 in regulating blood pressure and the adaptation to dietary salt. Matthew D. Breyer, Vanderbilt University Medical Center

Role of COX-2 in the coronary circulation. Ben R. Lucchesi, University of Michigan Medical School

* Oxidative stress and cyclooxygenase-1 and 2 mediate the hyperresponsiveness of the smooth muscle of the femoral artery of streptozotocin-treated rats. Yi Shi, University of Hong Kong, Faculty of Medicine

** Junior speaker chosen from meeting abstracts*

***Beginner's Guide to Emerging Technologies in Drug Development**

Chair: Shiladitya Sengupta

Introduction. Shiladitya Sengupta, Harvard Med. Sch.

Proteomics: An emerging technology for drug development. Thomas P. Conrads, NCI, Frederick

Genetically engineered mice in drug discovery. Pradip Majumder, Merck Research Laboratories and Harvard Medical School

Transcriptome: From gene arrays to drug targets in endothelial pathophysiology. Cristin G. Print, University of Auckland

Glycomics: The study of complex sugars in novel drug development. Carlos Bosques, MIT

* Ultrasound microbubble delivery of Ca²⁺ signaling second messengers into bovine coronary arterial smooth muscle cells. Guo Zhang, Medical College of Virginia

* *Junior speaker chosen from meeting abstracts*

Tuesday Afternoon, April 4 (3:00 PM – 5:30 PM)

***Metabolic Considerations in the Action of Herbal Medicines**

Chair: Thomas K.H. Chang

Quality control and standardization using metabonomics. J. Thor Arnason, University of Ottawa

Roles of nuclear receptors in the biological actions of herbal medicine. David D. Moore, Baylor College of Medicine

Pregane X receptor activation by natural products. Jeff L. Staudinger, University of Kansas

Clinical herb-drug interaction. J. Christopher Gorski, Indiana University School of Medicine

Getting Started in Drug Development: Academics to Industry

Chair: Benjamin R. Yerxa

Development of receptor subtype-selective ligands for P2Y receptors. T. Kendall Harden, University of North Carolina at Chapel Hill

The clinical development of therapeutics targeting adenosine receptors: When and how to create a university-based start up company. Joel Linden, University of Virginia

How to go from “powder in a jar” to clinical proof of concept. Gary D. Novack, Pharma-Logic Development, Inc., San Rafael, CA.

Venture capital funding and start-ups: After the scientific discovery. Garheng Kong, Intersouth Partners, Durham, NC

Division for Clinical Pharmacology and Translational Medicine Symposium: Receptor Pharmacogenomics at the Clinical Interface

Chairs: David A. Flockhart and Darrell R. Abernethy

Pharmacogenetics of nicotine addiction treatment. Neal L. Benowitz, University of California, San Francisco

Estrogen receptor polymorphisms as clinical predictors and mechanistic probes in the treatment of breast cancer. David A. Flockhart, Indiana University School of Medicine

Warfarin Pharmacogenomics: Effect of VKORC1 and CYP2C9 Haplotypes on Anticoagulation-related Outcomes. Allan E. Rettie, University of Washington

Division for Neuropharmacology Symposium: Neuroproteomics of the Synapse and Drug Addiction

Chair: Lakshmi A. Devi

Introduction to neuroproteomics of the synapse and drug addiction. Lakshmi A. Devi, Mount Sinai School of Medicine

Proteomics of the PSD: New tricks for an old dog. Bryen A. Jordan, New York University School of Medicine

Survey of morphine's effect on synaptic membrane proteins by quantitative profiling. Laszlo Prokai, University of North Texas Health Science Center at Fort Worth

Changes in the presynaptic active zone and postsynaptic density proteins during chronic morphine administration. Jose A. Moron-Concepcion, Mount Sinai School of Medicine

Quantitation of neuropeptides using mass spectrometry: Application to drug abuse research. Lloyd D. Fricker, Albert Einstein College of Medicine

Division for Toxicology Symposium: Therapeutics and Toxicology of COX-2 Inhibitors

Chair: James P. Kehrer

Introduction and novel signaling pathways affected by COX-2 inhibitors. James P. Kehrer, Washington State University

Anti-inflammatory activity and cardiovascular toxicity: Lessons from chemoprevention trials. Robert S. Bresalier, University of Texas, M.D. Anderson Cancer Ctr., Houston

Inhibition of COX-2 attenuates tumor growth and metastases and increases survival in a mouse model of colorectal cancer. Stacia Kargman, Merck Frosst Canada, Ltd.

Non-COX-2 inhibitor analogs and the pathways inhibited. Ching-Shih Chen, Ohio State University

Wednesday, April 5

***Allosteric Modulation of GPCRs: From Small Molecules to Accessory Proteins**

Chairs: Arthur Christopoulos and Bryan L. Roth

Computational approaches for identifying allosteric and orphan binding sites. Ruben Abagyan, the Scripps Research Institute

"GIPs" (GPCR interacting proteins) for 5-HT and mGlu receptors: Discovery and examples of functions. Joel Bockaert, INSERM, Montpellier, France

The pros and cons of allosteric modulators of GPCRs. Arthur Christopoulos, University of Melbourne

Allosteric modulation of mGluRs: A paradigm for family C GPCRs? Michael P. Johnson, Lilly Research Labs.

* A multivalent ligand that bridges the orthosteric and allosteric sites of the muscarinic M₂ receptor. Tod Steinfeld, Theravance, Inc., So. San Francisco

** Speaker chosen from meeting abstracts*

Multiple Approaches to NGF Antagonism for Novel Pain Drugs

Chair: Franz F. Hefti

Introduction. Franz F. Hefti, Rinat Neuroscience Corp.

NGF mediates pain sensation in the adult. Lorne M. Mendell, SUNY at Stony Brook

Preclinical and clinical studies with anti-NGF antibodies in pain. David L. Shelton, Rinat Neuroscience Corp.

NGF in cancer pain mechanisms. Patrick W. Mantyh, University of Minnesota

Peptibody NGF antagonists. Kenneth D. Wild, Amgen, Inc.

***Mammalian Nitric Oxide Metabolism and Signaling: Physiological and Therapeutic Frontiers**

Chair: David R. Janero

Nobonomics: A metabonomics approach toward mapping global nitric oxide metabolism and signaling. Martin Feelisch, Boston University School of Medicine

Nitrite anion as the biochemical HIF-1 α : Role in physiology and therapeutics. Mark T. Gladwin, NIDDK, NIH

The unique nature of cell signaling by reactive nitrogen intermediates. David A. Wink, NCI, NIH

Assessing changes in the mitochondrial proteome in response to reactive nitrogen species. Aimee Landar, University of Alabama at Birmingham

* Nitric oxide (NO) preconditioning protects endothelial cells against SNP-induced apoptosis via the hsp90-sGC pathway. Galina Antonova, Medical College of Georgia

* Peroxynitrite modulates the expression of Gi Protein and adenylyl cyclase signaling in vascular smooth muscle cells. Marcel Bassil, University of Montreal

** Junior speaker chosen from meeting abstracts*

Response to Oxidative Stress by Specific Epithelial Cell Types

Chair: Philip R. Mayeux

Oxidative stress in renal epithelial cell injury following ischemic injury. Lee Ann MacMillan-Crow, University of Arkansas for Medical Science

Epididymal epithelium utilizes multiple strategies to protect itself from oxidative stress. Barry T. Hinton, University of Virginia

Role of glutathione efflux pathways in lung epithelium and oxidative stress. Brian J. Day, National Jewish Medical and Research Ctr.

Retinal pigment epithelium: Cell heterogeneity, culture density and oxidative stress. Janice M. Burke, Medical College of Wisconsin

Determinants of intestinal oxidative susceptibility: Cellular redox and cell transition state. Tak Yee Aw, Louisiana State University Health Sciences Ctr.

Monoclonal Antibody and Small Molecule Cancer Therapies – What's the Difference?

Chairs: James D. Winkler and Lori S. Friedman

Overview and critical perspectives on small molecule and antibody therapies. Paul Workman, Cancer Research UK, Center for Cancer Therapeutics

Uses and limitations of Erbitux (cetuximab), an antibody inhibitor of the EGF receptor. Zhenping Zhu, ImClone Systems, Inc., New York

Clinical development and opportunities for Tarceva (erlotinib), a small molecule inhibitor of the EGF receptor. Lee D. Arnold, OSI Pharmaceuticals

Clinical development of Avastin (bevacizumab), an anti-VEGF antibody. Robert D. Mass, Genentech, Inc.

Uses of Vatalanib (CPG-79787), a small molecule inhibitor of VEGF. Amanda Littlewood-Evans, Novartis NIBR, Basel, Switzerland

Division Sessions

Monday Morning, April 3 (9:30 AM – 12:00 PM)

Biotransformation and Drug Transport: Drug Metabolism Platform Session

Chairs: David S. Riddick and Laurence S. Kaminsky

Division for Pharmacology Education Session: Distance Education in Pharmacology: Promises and Pitfalls

Chair: Patangi K. Rangachari

Delivering the Pharm.D. curriculum through distance education. Mary L. Euler, University of Missouri School of Pharmacy, Kansas City

Medical school by Internet? What's possible, what's not. Patricia B. Williams, Eastern Virginia Medical School, Norfolk

Knowledge management in a learning organization. Hans-Juergen Roethig, Phillip Morris USA, Richmond

On-line problem-based learning: Action at a distance for undergraduate science students. Patangi K.

Rangachari, McMaster University, Canada

Monday Afternoon, April 3 (3:00 PM – 5:30 PM)

Division for Behavioral Pharmacology Symposium: Behavioral Pharmacology at Fifty: A Look to the Future

Chairs: Carol A. Paronis and Linda Dykstra

Effects of antipsychotics in inbred mice: A confluence of pharmacology, genetics, and behavior. Todd L. McKerchar, University of Kansas

Studying a "dirty" drug: Using drug discrimination procedures to identify mechanism of action. Larry P. Carter, Johns Hopkins University School of Medicine

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MDMA is plural: in vivo pharmacology of the racemate in comparison with its component isomers. Bill E.

Fantegrossi, Emory University

Dopamine transporter ligands as cocaine antagonists. Rajeev I. Desai, NIDA, NIH

Behavioral pharmacology at 50. Alice M. Young, Texas Tech University Health Science Center

Division for Cardiovascular Pharmacology Graduate Student and Postdoctoral Scientist Best Abstract Competition

Chairs: William M. Armstead and Jianzhong Shen

Graduate Student Presentations:

Angiotensin-converting enzymes, ACE 1 and ACE 2 activity in mouse brain. Tatiana S. Cunha, Wright State University School of Medicine. Advisor: Mariana Morris

The prostacyclin receptor induces human vascular smooth muscle cell differentiation via PKA. Kristina M.

Fetalvero, Dartmouth College. Advisor: Kathleen A. Martin

Expression of a β_2 subunit mutant alters Ca currents in HL-1 cells. Swapnil Sonkusare, University of Arkansas for Medical Sciences. Advisor: Joseph R. Stimers

Postdoctoral Presentations:

In vivo suppression of TRPM4 compromises autoregulation of cerebral blood flow. Stacey Reading, University of Vermont. Mentor: Joseph E. Brayden

Modulation of cerebral vascular tone by NADPH-oxidase. Alyson A. Miller, University of Melbourne. Mentor: Christopher G. Sobey

The A3AR agonist CP-532,903 provides protection in two different mouse models of ischemia/reperfusion injury. Tina C. Wan. Med. Col. of Wisconsin, Mentor: John A. Auchampach

Graduate Student Best Abstract Runners-Up Posters before and after session:

Medroxyprogesterone acetate prevents the cardioprotective effects of 17-beta estradiol. Erin A. Booth, University of Michigan Medical School. Advisor: Ben R. Lucchesi

High blood pressure and membrane depolarization down-regulate *Shaker*-type K⁺ channels in the rat cerebral circulation. Biny K. Joseph, University of Arkansas for Medical Sciences. Advisor: Nancy J. Rusch

Real-time quantitative PCR study of genes involved in the generation of endothelium-dependent contractions in the aorta of the spontaneously hypertensive rat. Eva H.C. Tang, University of Hong Kong. Advisor: Paul M. Vanhoutte

Agonists of the A2A adenosine receptor reduce inflammation and hypoxia-induced pulmonary damage in transgenic sickle cell mice. Kori Wallace, University of Virginia. Advisor: Joel Linden

Division for Drug Discovery, Drug Development and Regulatory Affairs Symposium: Innovative Drug Delivery Strategies: Knocking on the Door of Drug Development

Chair: Thomas C. Stover

Keynote Talk: Innovative drug delivery: Where we are and where we're going... David A. Edwards, Harvard University

Immunotargeting of antioxidant and antithrombotic peptides to the vascular endothelium. Vladimir Muzykantov, University of Pennsylvania School of Medicine

Controlled delivery technology to the peripheral and central nervous systems. Daniel S. Kohane, Massachusetts General Hospital

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Systems and Integrated Pharmacology Division Symposium: Pharmacology of Cytokines in the Cardiovascular System

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Introduction. R. Clinton Webb, Medical College of Georgia

Role of cytokines in flow-induced vascular remodeling. Vyacheslav A. Korshunov, Univ. of Rochester.

Tumor necrosis factor-alpha modulates the pressor activity of angiotensin II. Joseph Francis, Louisiana State University, Baton Rouge

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Division for Molecular Pharmacology Postdoctoral Award Finalists

Chair: Brian Kobilka

Introduction: The ever increasing complexity of cellular signaling pathways. Brian Kobilka, Stanford University Medical Center

Postdoctoral Scientist Award Finalists:

Regulator of G-protein signaling 2 (RGS2) inhibits androgen-independent activation of androgen receptor in prostate cancer cells. Xuni Cao, Creighton University School of Medicine. Advisor: Yaping Tu
Morphine-induced activation of ERK in neostriatal neurons expressing the endogenous mu opioid receptor is rescued by dominant positive arrestin3. Tara A. Macey, University of Washington. Advisor: Charles Chavkin
Regulation of Na⁺/H⁺ exchanger-3 (NHE3) by adrenomedullin in human proximal tubule cells: Role for receptor activity modifying protein-3 (RAMP3) and Na⁺/H⁺ exchanger regulatory factor-1 (NHERF-1). Jennifer M. Bomberger, Dartmouth College. Advisor: William Spielman. (Michigan State advisor: Bruce Stanton)
Nuclear translocation of CAR is dependent on ubiquitination and proteasome-mediated degradation of CAR cytoplasmic retention protein (CCRP). Yoav E. Timsit, NIEHS, NIH. Advisor: Masahiko Negishi
Role of lysophosphatidic acid in mitogenic responses. Zhihong Zhang, Washington State University. Advisor: Kathryn E. Meier

Division for Neuropharmacology Symposium: Neuroproteomics of the Synapse and Drug Addiction

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Introduction to neuroproteomics of the synapse and drug addiction. Lakshmi A. Devi, Mount Sinai School of Medicine

Proteomics of the PSD: New tricks for an old dog. Bryen A. Jordan, New York University School of Medicine
Survey of morphine's effect on synaptic membrane proteins by quantitative profiling. Laszlo Prokai, University of North Texas Health Science Center at Fort Worth

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Non-COX-2 inhibitor analogs and the pathways inhibited. Ching-Shih Chen, Ohio State University

Special Sessions

Friday and Saturday

Behavioral Pharmacology Society Meeting (6:00 PM Friday, March 31 – 5:00 PM Saturday, April 1)

(Separate Registration Required)

Saturday Afternoon, April 1

2006 Teaching Institute: How to be a Course Director

(Co-sponsored by the Division for Pharmacology Education and the International Association of Medical Science Educators)

Chair: Jack W. Strandhoy

This course, developed by IAMSE, will give insights on how to effectively organize and manage a basic science course. Information will be presented concerning what students feel are important characteristics of a course director and these responses will be compared to faculty and administrative opinions. A list of helpful suggestions and survival tactics will be provided. The course will be part didactic and part interactive where various problematic student/course director scenarios will be addressed.

Bruce Newton, University of Arkansas for Medical Sciences, College of Medicine

Graduate Student Colloquium: Pointers for Getting Your Point Across: Strategies for Effective Communication

Chairs: Edward J. Bilsky and Myron L. Toews

Effective communication skills are necessary for success in science at all levels; getting your point across succinctly but also clearly and convincingly is often critical. In this Colloquium, students will meet in a small group format with each of five speakers for pointers on communicating effectively with peers, with government officials and administrators, and with the lay public

Communicating with the NIH. Richard T. Okita, NIGMS, NIH

Communicating with the lay public/high school students. Edward J. Bilsky, University of New England

Communicating with Congress/legislators. Janet Yancey-Wrona, Maine Office of Innovation

Communicating in a scientific manuscript as an editor or reviewer. Sam J. Enna, University of Kansas Medical Ctr.

Communicating as part of a project group in industry. Bryan F. Cox, Abbott Laboratories

Bridges to Success in Academia: From Undergraduate Student to Professor and Beyond

(Co-sponsored by the Committee on Minorities and the Committee on Women in Pharmacology)

Chairs: Gonzalo E. Torres and Margarita L. Dubocovich

Graduate Student: Application to graduate school, selection of graduate program and life as a graduate student. Tara Macey, University of Washington Health Sciences Center and Rayna Bauzo, Emory University.

Postdoc: Transition from graduate student to postdoctoral fellow and experiences in finding an ideal lab, and being a postdoc in a lab. Rayna Gonzales, University of California, Irvine

Junior Faculty: Job search, finding the ideal position, and setting up and managing a successful laboratory.

Martha Davila-Garcia, Howard University College of Medicine

Career Advisor/Dept Chair: General Strategies for achieving career goals and success at all levels in academia.

Susan G. Amara, University of Pittsburg School of Medicine

Sunday Morning, April 2 (10:00 AM – 12:00 PM)

Monday Morning, April 3 (8:00 AM – 10:00 AM)

ASPET Women in Pharmacology and APS Women in Physiology Committees Workshop: Mastering the Juggling Act: Laboratory, Life and Leadership Roles

Chairs: Ann M. Schreihof, Deborah Damon and Laura K. Nisenbaum

Juggling research-related duties: How to stop putting out fires and use your time wisely. Ida Llewellyn-Smith, Flinders University, Bedford Park, Australia

Juggling research with service and teaching duties: How much, what kind, and when. Lynn Wecker, University of South Florida

Juggling for the dual career couple: Strategies for maximum job satisfaction. Marilyn J. Cipolla, University of Vermont

Juggling job and family: Balancing home life and careers. Susan F. Steinberg, Columbia University

Monday Afternoon, April 3 (12:30 PM – 2:00 PM)

Public Affairs Committee Workshop: Summer Short Courses in Integrative and Organ Systems Science

Chair: Gerald J. Schaefer, Cleveland Clinic Foundation

The National Institute of General Medical Sciences (NIGMS) is funding four short summer courses that provide specialized training for using intact organ system and in vivo animal models in the conduct of research. The purpose of each short course is to introduce graduate students and Ph.Ds to the knowledge and skills needed for integrative studies of organ systems and intact animals, and the physiological and biochemical responses of these systems to drugs. These critical skills are in short supply. Graduate students and Ph.Ds. with these skills are in great demand in both academic and industrial settings. Attendees at this workshop will hear about the summer courses from the course directors and from students who participated this past summer.

Participants:

David B. Bylund, University of Nebraska Medical Center

Peter C. Preusch, NIH/National Institute of General Medical Sciences

Peter J.R. Cobbett, Michigan State University

Laurence L. Brunton, University of California at San Diego School of Medicine

Adam M. Persky, University of North Carolina at Chapel Hill

Lectures

Sunday Morning, April 2 (8:15 AM – 9:15 AM)

Ray Fuller Lecture in the Neurosciences

“Novel Signaling Paradigms of Monoamine-mediated Behaviors in Animal Models”

Marc Caron, Duke University Medical Center

Sunday Afternoon, April 2 (1:30 PM – 2:30 PM)

John V. Croker Lecture

“Pharmacogenomics: A Journey from Phenotype to Genotype”

Richard M. Weinshilboum, Mayo Medical School

Monday Afternoon, April 3 (1:30 PM – 2:30 PM)

Bernard B. Brodie Award Lecture

“Acetaminophen Metabolism and Hepatotoxicity: 35 Years Since B.B. Brodie”

Frank J. Gonzalez, NCI, NIH

Monday Afternoon, April 3 (1:30 – 2:30 PM)

P.B. Dews Award Lecture

“Reflections on my Career in Psychopharmacology”

Leonard Cook, Temple Med. Sch.

Tuesday Afternoon, April 3 (2:15 – 3:15 PM)

FASEB’s Excellence in Science Award Lecture

“G Proteins and RGS Proteins: Linking Trafficking and Signaling”

Marilyn G. Farquhar, UCSD