ASPET Preliminary Program for Experimental Biology 2003

Symposia

Saturday Morning

Inverse agonism: translation to *in vivo* function
Chairs: James H. Woods and Richard Neubig

Current status of inverse agonism as a pharmacological and therapeutic tool. **Graeme Milligan**, *Univ. of Glasgow, Scotland*

Delta-opioid inverse agonists. **Chris J. Evans**, *UCLA*

Inverse agonists in chemokine receptors. **M.R. Brann**, *Acadia Pharmaceut*.

Inverse agonists and competitive antagonists in benzodiazepine dependent monkeys. **Charles P. France**, *Univ. of Texas Hlth. Sci. Ctr., San Antonio*

Actions of hallucinogens and atypical antipsychotic drugs at serotonin receptors
Chairs: Bryan L. Roth and David R. Sibley

Atomic and molecular mechanisms of 5-HT2A receptor activation, targeting and trafficking. **Bryan L. Roth**, C*ase Western Reserve Univ. Med. Sch.*

RNA editing and genomic polymorphisms: relevance for schizophrenia, atypical antipsychotics and hallucinogens. **Elaine Sanders-Bush**, *Vanderbilt Univ. Med. Sch.*

Functional roles of 5-HT2A receptors in the prefrontal cortex. **Rodrigo Andrade**, *Wayne State Univ. Med. Sch.*

5-HT2A receptors in psychosis and antipsychotic treatments: insights from knockout mice. **Jay Gingrich**, *Columbia Univ.*

Serotonin 2C receptor distribution in the ventral tegmental area. **Marcy J. Bubar**, *Univ. of Texas Med. Br. at Galveston* **(Abstract 3105)**

A pharmacology core curriculum: to be or not to be
Chairs: Patricia B. Williams and Gregory D. Fink

Introduction: More than facts: knowledge, skills and attitudes. **Patricia B. Williams**, *Eastern Virginia Med. Sch.*

The knowledge objectives and essential drug list. **Gary Rosenfeld**, *Univ. of Texas-Houston Med. Sch*.

A view from the top: a chairman speaks. **Kenneth E. Moore**, *Michigan State Univ*.

Teaching medical school pharmacology in the 21st Century – can a core knowledge base be defined? **Eric P. Brass**, *Harbor-UCLA Med. Ctr.*

Beyond medical schools: health professions with prescribing authority. **Jean D. Deupree**, *Univ. of Nebraska Med. Ctr.*

Two pore-domain potassium channels: background currents come to the fore
Chair: Steven J. Feinmark

The K_{2P} channels: dedicated and dynamic potassium leak pathways. **Steven A. Goldstein**, *Yale Univ. Sch. of Med.*

TREK and TASK channels: structure, regulation, pharmacology and implications in disease states. **Michel Lazdunski**, *CNRS, Valbonne, France*

Mechano- and lipid-sensitive two pore-domain potassium channels in the heart and brain. **Donghee Kim**, *Finch Univ. of Hlth. Sci.*

Lipid-dependent modulation of TASK-1 function: is there a role in dysregulation of cardiac rhythm? **Richard Robinson**, *Columbia Univ.*

Functions of TASK channels in the mammalian central nervous system: modulation by protons, neurotransmitters and volatile anesthetics. **Douglas A. Bayliss**, *Univ. of Virginia*

Use of genomic data on drug metabolizing enzymes and drug transporters to assess risk
Chairs: Richard T. Okita and Rebecca Blanchard

Building a pharmacogenetics database from scratch**. Teri E. Klein**, *Stanford Univ*.

Genetic regulation of ABC transporters. **John Schuetz**, *St. Jude Children's Research Med. Hosp*.

Pharmacogenetics of human sulfotransferases. **Rebecca Blanchard**, *Fox Chase Cancer Ctr*.

Cytochrome P450 protein models for predicting metabolic events important in risk assessment, drug design and toxicology. **Jeff Jones**, *Washington State Univ*.

Identification and characterization of polymorphic variants of CYP3A5. **Su Jun Lee**, *NIEHS, Research Triangle Park, NC* **(Abstract 9024)**

Saturday Afternoon

Cannabinoids: pharmacological actions and interactions between endogenous brain cannabinoid and opioid systems
Chair: Steven R. Goldberg

Introduction. Recent progress in cannabinoid research. **Steven R. Goldberg**, *NIH, NIDA, Baltimore*

Preclinical pharmacology of natural and synthetic cannabinoids: tolerance, dependence and behavioral and physiological actions. **B.R. Martin**, *Virginia Commonwealth Univ.*

Endogenous cannabinoid systems and brain-behavior mechanisms. **Daniele Piomelli**, *UCI*

Involvement of endogenous opioid systems in cannabinoid dependence. **Rafael Maldonado**, *Univ. of Pompeu Fabra, Barcelona, Spain*

Cannabinoid dependence in humans: role of endogenous opioid systems. **Margaret Haney**, *New York State Psychiatric Inst. and Columbia Univ.*

New developments in the search for natural and synthetic cannabinoids. **A. Makriyannis**, *Univ. of Connecticut*

Trophic effects of estrogen in the brain: protection for memory, aging and neurodegenerative disease
Chairs: Cynthia M. Kuhn and Rochelle D. Schwartz-Bloom

Rapid signaling events mediate trophic actions of estrogen. **Dominique Toran-Allerand**. *Columbia Univ. Col. of Physicians and Surgeons*

Estrogen and neuroinjury. **Patricia Hurn**. *Johns Hopkins Univ*.

Estrogen is trophic for dopamine neurons: implications for Parkinson's disease and addiction. **Eugene Redmond**, *Yale Univ*.

Estrogen and cognitive performance: basic and clinical findings. **Robert B. Gibbs**, *Univ. of Pittsburgh Sch. of Med.*

Teaching pharmacology to diverse audiences
Chairs: Jack W. Strandhoy and Patangi K. Rangachari

Introduction. **Jack W. Strandhoy**, *Wake Forest Univ. Sch. of Med.*

PBL for undergraduate and graduate students: for the few and the many. **Patangi K. Rangachari**, *McMaster Univ. Hlth. Sci. Ctr.*

Designing facilities and programs to optimize education in the health professions. **O. Theodore Wendel**, *Arizona Sch. of Hlth. Sci.*

Inquiry-based teaching of pathophysiology and pharmacology to 11th and 12th grade students. **Jeffrey L. Osborn**, *Trinity Col. and Academy, Hartford, CT*

Tailoring problem based learning approaches to your audience. **Ann Lambros**, *Wake Forest Univ. Sch. of Med.*

G-protein-coupled receptor kinases: hope or hype for heart failure
Chair: Susan F. Steinberg

The structural basis of subtype specific signaling of beta adrenoceptors in cardiac myocytes. **Brian K. Kobilka**, *Stanford Univ.*

Mechanisms of GRK regulation. **Jeffrey L. Benovic**, *Thomas Jefferson Univ.*

Distinct cardiomyocyte B1- and B2-adrenergic receptor signaling phenotypes to cAMP and other effectors. **Susan F. Steinberg**, *Columbia Univ.*

New roles for GRK mediated beta-adrenergic receptor internalization in heart failure. **Howard Rockman**, *Duke Univ. Med. Ctr.*

Sunday Morning

Developing novel antidepressant drugs
Chair: Irwin Lucki

How antidepressants work: pathways to better drugs. **Alan Frazer**, *Univ. of Texas Hlth. Sci. Ctr., San Antonio*

Cellular and molecular targets for antidepressant drugs. **Julie Blendy**, *Univ. of Pennsylvania*

PDE inhibitors as novel targets for antidepressants. **James O'Donnell**, *Univ. of Tennessee Hlth. Sci. Ctr.*

Pharmacogenetic targets determining antidepressant drug effects. **Irwin Lucki**, *Univ. of Pennsylvania*

Modeling anhedonia: reward deficits reversed by antidepressants. **Athina Markou**, *The Scripps Res. Inst.*

Developmental neurotoxicology induced by NMDA antagonists/GABA agonists
Chair: William Slikker

The importance of the NMDA receptor system to normal and abnormal development. **William Slikker**, *NCTR/FDA, Jefferson, AR*

Commonly used anesthesia protocol causes neuronal suicide in the immature rat brain. **Vesna Jevtovic-Todorovic**, *Univ. of Virginia*

Ethanol induced developmental neurotoxicity: apoptotic mechanism of the fetal alcohol syndrome? **Meena Kumari**, *Kansas State Univ.*

Chronic exposure to sodium channel and NMDA receptor blockers during development in rats and monkeys: long-term effects on cognitive function. **Merle G. Paule**, *NCTR, FDA, Jefferson, AR* **(Abstract 2714)**

NMDA antagonists/GABA agonists exposure during development: unifying mechanism of action, species extrapolation and potential impact on children's health. **John Olney**, *Washington Univ. Med. Sch.*

Non-genomic effects of estrogen in endothelial cells
Chairs: Edward J. Kilbourne and James K. Liao

Estrogen receptor signaling through phosphatidylinositol-3-OH kinase. **James K. Liao**, *Harvard Med. Sch.*

Estrogen stimulates endothelial eNOS through Hsp90 binding. **Jeffrey R. Bender**, *Yale Univ. Sch. of Med.*

Estrogen preserves endothelial cell form and function**. Ellis R. Levin**, *Univ. of California at Long Beach and Long Beach Vet. Affairs Med. Ctr.*

Estrogen receptors and the cell SRFC (steroid receptor fast-action complex). **Philip W. Shaul**, *Univ. of Texas Southwestern Med. Ctr. at Dallas*

Sex hormones and endothelin-TXA2 in Zucker diabetic rats. **Adesuyi L. Ajayi**, *Texas Southern Univ*. **(Abstract 583)**

Monday Morning

Role of GABA-enhancing neurosteroids in neuropharmacology
Chair: Richard W. Olsen

GABA-A receptor subunit specificity in the physiological modulation by neurosteroids. **Richard W. Olsen**, *UCLA*

Neurosteroid effects on GABA-A receptor subunit plasticity: synaptic and extrasynaptic actions. **Sheryl Smith**, *SUNY at Brooklyn*

Can the anxiolytic and antidysphoric profile of SSRIS be related to their ability to increase neurosteroids active at GABA-A receptors? **Alessandro Guidotti**, *Univ. of Illinois at Chicago*

Endogenous GABAergic neurosteroids contribute to ethanol actions: mechanisms and significance. **Leslie Morrow**, *Univ. of North Carolina at Chapel Hill*

Trafficking of ion channels
Chair: Arthur M. Brown

Quality control in the ER: dislocation of integral membrane proteins and their processing in the cytosol. **Ron R. Kopito**, *Stanford Univ.*

Lipid rafts and membrane ion channels. **Michael M. Tamkun**, *Colorado State Univ.*

Ion channel clustering. **Peter G. Shrager**, *Univ. of Rochester*

HERG trafficking: pharmacological and physiological chaperones. **Eckhard Ficker**, *Case Western Reserve Univ.*

Pharmacological management of septicemia
Chair: J. Thomas Peterson

The biology of sepsis and appropriate preclinical models. **Fletcher B. Taylor**, *Oklahoma Univ. Hlth. Sci. Ctr.*

Anti-coagulant mechanisms in the treatment of sepsis. **Charles T. Esmon**, *Oklahoma Univ. Hlth. Sci. Ctr.*

Anti-inflammatory mechanisms in the treatment of sepsis. **Peter A. Ward**, *Univ. of Michigan Med. Sch.*

Establishing therapeutic efficacy and safety in the clinic - lessons learned. **Charles J. Fisher**, *Abbott Labs.*

Regulation and physiological functions of extrahepatic cytosolic sulfotransferases
Chair: Charles Falany

Structure and mechanism of sulfotransferases. **Masahiko Negishi**, *NIH, NIEHS, Research Triangle Park*

Sulfation pharmacogenetics: genotype-to-phenotype studies. **Richard Weinshilboum**, *Mayo Fndn.*

Expression of human sulfotransferases in bacteria, cell lines and mice for studying their role in the activation of mutagens and carcinogens. **Hansruedi Glatt**, *German Inst. for Human Nutrition, Bergolz-Rehbrucke, Germany*

Steroid sulfation in human extrhepatic tissues. **Charles Falany**, *Univ. of Alabama at Birmingham*

Physiologic functions of estrogen sulfotransferase as revealed by gene targeting in the mouse. **Wenchao Song**, *Univ. of Pennsylvania*

Cyclooxygenase-2 and COX-2 inhibitors in cardiovascular disease
Chairs: Leslie J. Crofford and Ben Lucchesi

The place of COXIBs in the treatment of rheumatic diseases. **Leslie J. Crofford**, *Univ. of Michigan*

COX-1 and COX-2-derived prostaglandins in vascular biology. **Tilo Grosser**, *Univ. of Pennsylvania*

Prostaglandins and hypertension: implications for use of COXIBs. **Tom Coffman**, *Duke Univ.*

Does specific inhibition of COX-2 pose a cardiovascular risk or benefit? **Carlo Patrono**, *Univ. of Rome*

Tuesday Morning

Molecular substrates of anxiety: what have we learned from $GABA_A$ receptor heterogeneity?
Chair: Phil Skolnick

Overview. **Phil Skolnick**, *DOV Pharmaceut., Inc.*

Molecular pharmacology of $GABA_A$ receptor heterogeneity. **Hartmut W.M. Lueddens**, *Univ. of Mainz, Germany*

Analysis of $GABA_A$ receptor functions by knock-in point mutations. **Uwe Rudolph**, *Univ. of Zurich*

Subtype selective $GABA_A$ receptor ligands: can the *in vivo* and *in vitro* pharmacologies be reconciled? **Harry June,** *Indiana Univ. - Purdue Univ.*

Searching for the "holy grail": can we develop anxioselective drugs? **Arnold S. Lippa**, *DOV Pharmaceut., Inc.*

Nicotine receptors: connecting basic science to therapeutic potential
Chairs: George J. Christ and Jerry J. Buccafusco
Honorary Chair: John P. Long

Introduction. **Long P. Long**, *Univ. of Iowa Col. of Med.*

Crystal structure of AChBP. **August B. Smit**, *Vrije Univ*., *Amsterdam, The Netherlands*

Phenotypes of nicotinic receptor knock out mice. **Lisa Marubio**, *Baylor Col. of Med*.

Disease relevance: schizophrenia. **Bob Freedman**, *Univ. of Colorado Hlth Sci. Ctr*.

The potential of nicotinic therapy for Alzheimer's Disease and aging-related cognitive impairment. **Edward D. Levin**, *Duke Univ., Med. Ctr*.

Nicotinic drugs improve learning and memory in non-human primates. **Jerry J. Buccafusco**, *Med. Col. of Georgia*

Transgenic models of heart failure and heart failure therapeutics
Chairs: J. David Port and Joan Heller Brown

The role of HDACs in modulating cardiac hypertrophy. **Timothy A. McKinsey,** *Myogen, Inc., Westminister, CO*

Role of G-protein receptor kinases in modulating cardiac function and rescue of heart failure phenotypes. **Walter J. Koch**, *Duke Univ. Med. Ctr*.

Role of G-proteins in the heart failure phenotype. **Gerald W. Dorn**, *Univ. of Cincinnati*

Myocardial hypertrophy and failure induced by altered contractile proteins. **Leslie A. Leinwand**, *Univ. of Colorado*

The PDZ binding motif of the beta2 adrenergic receptor modulates receptor trafficking and signaling in cardiac myocytes. **Yan Xiang**, *Stanford Univ***. (Abstract 8708)**

Ophthalmic drug development: new frontiers or me too?
Chair: Benjamin R. Yerxa

Ocular pharmacology, target diversity and drug development. **Gary Novack**, *PharmaLogic Development, Inc., San Rafael, CA*

Mechanisms in the pathogenesis of age related macular degeneration. **Marco Zarbin**, *UMDNJ*

Preclinical studies in ophthalmology. **Ward Peterson**, *Inspire Pharmaceut., Inc.*

Development of antisense therapies for CMV retinitis and other ophthalmic diseases. **Scott Henry**, *Isis Pharmaceut., Inc.*

Transcriptional suppression of cytochrome P450 genes by endogenous and exogenous chemicals
Chair: David S. Riddick

Positive and negative transcriptional regulation of cytochromes P450 by polycyclic aromatic hydrocarbons. **David S. Riddick**, *Univ. of Toronto*

Down-regulation of constitutive and inducible cytochromes P450 by inflammatory mediators. **Edward T. Morgan**, *Emory Univ.*

DHEA suppresses CYP2C11 expression through a PPAR-independent mechanism. **Russell A. Prough**, *Univ. of Louisville Sch. of Med.*

Bile acid and nuclear receptor regulation of cytochrome P450 gene transcription. **John Y.L. Chiang**, *Northeastern Ohio Univ.*

Suppression of the human sterol 12α hydroxylase (CYP8B1) gene by interleukin-1β (IL-1β). **Asmeen Jahan**, *Northeastern Ohio Univ. Col. of Med*. **(Abstract 7285)**

Tuesday Afternoon

Animal models of neuropsychiatric diseases
Chairs: Frank I. Tarazi and Sabina Berretta

Mechanisms of behavioral hyperactivity in juvenile rats: implications for ADHD. **Frank I. Tarazi**, *Harvard Med. Sch.*

Modeling Huntington's Disease in the mouse: mechanistic and therapeutic insights. **Susan Browne**, *Cornell Univ.*

Role of subthalamic nucleus and substantia nigra pars reticulata in primate parkinsonism. **Thomas Wichmann**, *Emory Univ. Sch. of Med.*

Role of the amygdala in the pathophysiology of schizophrenia: a "partial" rodent model. **Sabina Berretta**, *Harvard Med. Sch.*

Isoform-specific regulation of adenylyl cyclases: a new focus for drug discovery
Chairs: Ross D. Feldman and Paul A. Insel

Stoichiometry and compartmentation of signaling via adenylyl cyclases. **Paul A. Insel**, *UCSD*

Isoform-specific regulation of adenylyl cyclases by GPCRs. **Daniel R. Storm**, *Univ. of Washington*

Tyrosine kinase regulation of adenylyl cyclase isoforms. **Ross D. Feldman**, *John P. Robarts Res. Inst., London, ON*

Development of drugs targeted to specific adenylyl cyclase isoforms. **Yoshihiro Ishikawa**, *UMDNJ*

Vesicle monoamine transporters (VMATs)
Chair: Arnold E. Ruoho

Chemical neuroanatomy of the vesicular amine transporters: autonomous and distributed aminergic phenotypes in the mammalian nervous system.. **Lee E. Eiden**, *NIMH, NIH*

The ligand binding sites and structure of VMAT2. **Arnold E. Ruoho**, *Univ. of Wisconsin Sch. of Med.*

Mechanism of coupling of H+ and substrate fluxes in transporters: EmrE as a model system. **Shimon Schuldiner**, *Hebrew Univ. of Jerusalem, Israel*

Efflux mediated by VMAT2. **Robert H. Edwards**, *UCSF*

VMAT2 as a human gene for narcolepsy and dopaminergic disorders: extended human VMAT2 haplotypes, imprinting and relationships to mouse knockout models. **George R. Uhl**, *NIDA, NIH, Baltimore*

Division Sessions

Sunday Morning

Division for Pharmacology Education Symposium: Who controls and teaches pharmacology in the new integrated curriculum?
Moderators: Gary C. Rosenfeld and Jack W. Strandhoy

Multiple learning formats provide opportunities and challenges to teaching pharmacology. **Jack W. Strandhoy**, *Wake Forest Univ*.

Proposals for curriculum revision at Duke Medical School - their impact on pharmacology education. **J. Victor Nadler**, *Duke Univ. Med. Sch*.

Pharmacology in the medical school curriculum - experiences at Baylor College of Medicine. **Janet L. Stringer**, *Baylor Col. of Med*.

Division for Drug Metabolism Platform Session: Biotransformation and drug transport
Chairs: Michael R. Franklin and Thomas R. Kocarek

James R. Gillette Best Paper Awards and selected contributed paper presentations.

Sunday Afternoon

Division for Toxicology Symposium: The dangers of designer drugs
Chair: Terrence J. Monks

Selective neurotoxic effects of drugs of the amphetamine type. **George Ricaurte**, *Johns Hopkins Univ. Sch. of Med.*

On the chemistry and hepatic metabolism of designer drugs of the ecstasy and new piperazine type. **Hans H. Maurer**, *Univ. of Saarland, Homburg/Saar, Germany*

MDMA metabolism in humans: pharmacodynamic and toxicological implications. **Rafael de la Torre**, *Inst. Municipal D'Investigacio Medica, Barcelona, Spain*

The neurotoxicity of metabolites of ecstasy. **Terrence J. Monks**, *Univ. of Texas at Austin*

Division for Cardiovascular Pharmacology Best Paper Award Presentations
Chairs: Mariana Morris and John Kermode

Division for Clinical Pharmacology Symposium: Adrenergic signaling pathways as a target for pharmacogenetic research
Chair: Terrence F. Blaschke

Genetic variants of adrenergic receptor signaling components: an introductory overview. **Paul A. Insel**, *UCSD*

Assessing the impact of alterations in cellular adrenergic responses at a functional level: the weakest link? **Ross D. Feldman**, *John P. Robarts Res. Inst., London, ON*

In vivo pharmacology of human adrenergic receptor polymorphisms. **C. Michael Stein**, *Vanderbilt Univ*.

Alternative splicing as a mechanism for variation in drug response. **Darrell R. Abernethy**, *NIA, NIH, Baltimore*

Synergistic polymorphisms of the β_1- and α_{2c}-adrenergic receptors and the risk of congestive heart failure. **Kersten Small**, *Univ. of Cincinnati Med. Ctr.*

Division for Behavioral Pharmacology Symposium: **Learning and cognition: behavioral, pharmacological and molecular relationships**
Chair: James E. Barrett

Introduction. **James E. Barrett**, *Memory Pharmaceut*.

Genetic approaches to study learning and memory. **Theodore G. Abel**, *Univ. of Pennsylvania*

Mechanisms of learning in young and aging hippocampus. **John F. Disterhoft**, *Northwestern Univ. Med. Sch*.

Calcium regulation and gene expression in aging-related memory impairment. **Philip W. Landfield**, *Univ. of Kentucky*

Drug development for cognitive enhancement. **Gregory M. Rose**, *Memory Pharmaceut.*

Monday Afternoon

Division for Drug Discovery, Development and Regulatory Affairs Symposium: **Clinical genomics: a source of pre-validated drug targets and smart drugs**
Chair: Benjamin R. Yerxa

Using multiple founder populations to discover new drug targets. **Michael R. Hayden**, *Univ. of British Columbia*

The genealogic approach to finding human drug targets for human disease. **Jeffrey Gulcher**, *deCODE Genetics, Reykjavik, Iceland*

Genetic profiling complex diseases for drug discovery and trials. **Lindsay A. Farrer**, *Boston Med. Ctr*.

Developing haplotypes for personalized medicine and smarter clinical trials. **Clay Stephens**, *Genaissance Pharmaceut., Inc.*

Division for Drug Metabolism Symposium: **Structural domains and motifs: functional implications for drug-sensing transcription factors**
Chair: Masahiko Negishi

Domain analysis of the Ah receptor. **Lorenz Poellinger**, *Karolinska Inst, Stolkholm, Sweden.*

Multiple drug-binding orientations in the crystal structure of the nuclear orphan receptor, PXR. **Matthew R. Redinbo**, *Univ. of North Carolina at Chapel Hill*

Nrf2 and its protein-protein interactions regulate drug-dependent gene induction. **Masayuki Yamamoto**, *Univ. of Tsukuba, Tsukuba, Japan*

Mutational analysis of the nuclear orphan receptor CAR. **Masahiko Negishi**, *NIEHS, NIH, Research Triangle Park*

Division for Molecular Pharmacology Post Doctoral Award Finalists
Chair: Rick Neubig

Milliseconds to medicines: Regulators of G-protein signaling (RGS) as novel drug targets. **Rick Neubig**, *Univ. of Michigan*

Beta-arrestins regulate a RalGDS Ral effector pathway that mediates cytoskeletal reorganization. **Moshmi Bhattacharya**, *Robarts P. Res. Inst., London, ON* **(Abstract 9478)**

Phosphorylation of AGS3 by the tumor suppressor kinase LKB1: a potential mechanism for regulation of AGS3-Giα interaction. **Joe B. Blumer**, *Louisiana State Univ. Hlth. Sci. Ctr.* **(Abstract 8083)**

Prostaglandin E_2 induction of early growth response factor-1 by EP_4 prostanoid receptors via phosphatidylinositol 3-kinase and extracellular signal-regulated kinases. **Hiromichi Fujino**, *Univ. of Arizona Col. of Pharm.* **(Abstract 4907)**

Gq coupled receptor mediated ERK and Akt activation is attenuated by expression of a peptide inhibitor of Gq in aorta vascular smooth muscle cells. **Jihee Kim**, *Duke Univ. Med. Ctr.* **(Abstract 5889)**

Ryanodine receptor phosphorylation and diastolic function are increased by CaMKII in cardiomyocytes. **Tony Zhang**, *UCSD* **(Abstract 7565)**

Division for Systems and Integrative Pharmacology Symposium: **Cocaine neuropharmacology: integrating functional imaging and *in vivo* neurochemistry.**
Chairs: Leonard L. Howell and Michael Nader

Use of PET imaging to characterize cocaine-induced changes in dopamine D_2 receptors in nonhuman primates. **Michael A. Nader**, *Wake Forest Univ. Med. Sch.*

Effects of cocaine self-administration on dopaminergic function determined by *in vivo* microdialysis in conscious nonhuman primates. **Charles W. Bradberry**, *Yale Univ. Sch. of Med.*

Monoamine transporters and cocaine medication development in nonhuman primates: PET imaging and *in vivo* microdialysis. **Leonard L. Howell**, *Emory Univ.*

Cocaine-induced cerebral vasoconstriction determined by fMRI in humans. **Marc J. Kaufman**, *McLean Hosp.*

Neurochemical mechanisms mediating cue-induced cocaine craving in humans determined by PET imaging and fMRI. **Anna Rose Childress**, *Univ. of Pennsylvania*

Division for Neuropharmacology Symposium: Club drugs neuropharmacology: new challenges
Chair: Jerry Frankenheim

The "club drugs" present new challenges. **Jerry Frankenheim**, *NIDA, NIH*

Neurotoxic amphetamines. **Bryan K. Yamamoto**, *Boston Univ*.

Functional consequences of MDMA abuse. **John E. Mendelson**, *UCSF*

GHB physiology and pharmacology. **O. Carter Snead, III**, *Univ. of Toronto*

Hallucinogens: from LSD to mescaline. **Gerard J. Marek**, *Pfizer, Inc.*

Neurotoxicity of NMDA antagonists (ketamine, PCP, N20, ethanol) in the adult and developing brain. **John W. Olney**, *Washington Univ.*

Special Sessions

Friday

Teaching Institute: Challenges in pharmacology graduate education

A classical approach to teaching pharmacology to graduate students. **Barbara S. Beckman**, *Tulane Univ.*

A core curriculum for graduate studies at MUSC. **Perry V. Halushka**, *Med. Univ. of South Carolina*

Experience with a core curriculum for graduate students at LSU/Shreveport: pros and cons. **Sandra Roerig**, *Louisiana State Univ. at Shreveport*

Graduate student panel:

Lawrence P. Carter, *Univ. of Texas Hlth. Sci. Ctr. at San Antonio*, **Ted Price**, *Univ. of Texas Hlth. Sci. Ctr. at San Antonio*, **Laila Elsherif**, *Univ. of Louisville*

Graduate Student Colloquium: ~~Convocation~~: ~~Challenges in pharmacology graduate education~~ Practical tips for success in a pharmacology graduate program and beyond

The importance of networking: establishing lifelines for long-term survival. **Richard De La Garza**, *Albert Einstein Col. of Med.*

Information overload: swimming rather than sinking in the sea of knowledge. **David B. Bylund**, *Univ. of Nebraska Med. Ctr.*

Saturday

Workshop: Securing your future through competitive grant writing
(Sponsored by the Minorities Committee)
Moderator: Sunny E. Ohia

Goal: To provide an opportunity for the panelists to discuss their experiences in securing funding from governmental and non-governmental sources based on winning grant proposals.

Funding opportunities at the predoctoral level. **Ashiwel S. Undie**, *Univ. of Maryland Sch. of Pharmacy*

Funding opportunities at the postdoctoral level. **Richard De La Garza, II**, *Albert Einstein Col. of Med.*

Funding opportunities at the faculty level. **Rita J. Valentino**, *Children's Hosp. of Philadelphia*

Sunday

Symposium: Drug abuse as a gender issue
(Sponsored by the Women in Pharmacology Committee)
Chairs: Linda P. Dwoskin and Kathleen M. Kantak

Response to alcohol and alprazolam in women with potential risk factors for developing substance abuse problems. **Suzette M. Evans**, *Columbia Univ. Col. of P and S*

Sex differences in the anxiety-reducing effects of abused drugs. **Marlene A. Wilson**, *Univ. of South Carolina Sch. of Med.*

Gender differences in substance use disorders. **Kathleen Brady**, *Med. Univ. of South Carolina*

Sex differences in the acquisition, maintenance, reinstatement, and treatment of drug abuse: animal models. **Marilyn E. Carroll**, *Univ. of Minnesota*

Hormonal effects on withdrawal and smoking behavior with and without transdermal nicotine in pre- and post-menopausal women during short-term smoking cessation. **Sharon Allen**, *Univ. of Minnesota*

Sex differences and nicotine reinforcement in animals and humans. **Nadia Chaudhri**, *Univ. of Pittsburgh*

Monday

Symposium: Presentation Skills
(Sponsored by ASPET's Women in Pharmacology Committee and APS' Women in Physiology Committee)

Chairs: Carole M. Liedtke, Siribhinya Benyajati, and Joan M. Lakoski

Introduction. **Carole M. Liedtke**, *Case Western Reserve Univ*.

Oral presentations. **Kim Barrett**, *UCSD*

Interviewing skills. **Ann M. Schreihofer**, *Med. Col. of Georgia*

Poster presentations. **Joan M. Lakoski**, *Univ. of Pittsburgh*

Sharing science with the public. **Mary J.C. Hendrix**, *Univ. of Iowa*

Wrap up. **Sinya Benyajati**, *Univ. of Oklahoma Hlth. Sci. Ctr.*

Lectures

The Torald Sollmann Award in Pharmacology Oration

The Changing Face of Pharmacology: A True Chimera or in Transition. **Palmer W. Taylor**, *UCSD*

Saturday

The Harry Gold Award in Clinical Pharmacology Lecture

Conjugation Pharmacogenetics: Phenotype to Genotype and Back. **Richard M. Weinshilboum**, *Mayo Fndn*.

Sunday

Satellite Meeting – San Diego Marriott Hotel & Marina

Separate Registration Required

STROKE: FROM BENCH TO BEDSIDE

2003 ASPET-Ray Fuller Symposium
Diseases of Aging –3

Organized by: Roberto Levi, *Cornell University* and David J. Pinsky, *Columbia University*

Thursday, April 10

SESSION I: CURRENT PHARMACOLOGICAL TREATMENT OF STROKE: ARE THE HURDLES INSURMOUNTABLE?

- White matter disease in stroke. **Mark P. Goldberg**, *Washington Univ. Sch. of Med.*
- Tissue plasminogen activator and stroke. **Sidney Strickland**, *Rockefeller Univ*.
- ~~Why do stroke trials fail? TBD~~

SESSION II: VASCULAR COMPROMISE AND NEURONAL DEMISE IN STROKE

- Microvascular inflammation and coagulation in ischemic cerebral injury. **David J. Pinsky**, *Columbia Univ*.
- Role of inflammatory genes in ischemic brain injury. **Costantino Iadecola**, *Cornell Univ.*
- Does the NMDA antagonist saga signal the death of excitotoxicity? **Charles F. Stevens**, *Salk Inst.*
- Steroids and eNOS in Stroke. **Michael A. Moskowitz**, *Massachusetts Gen. Hosp*.
- Why do neurons die? **Ted M. Dawson**, *Johns Hopkins Univ.*
- Oxidant stress and DNA damage in stroke. **Pak H. Chan**, *Stanford Univ*.
- Pharmacological neuroprotection in animal models. **Richard J. Traystman**, *Johns Hopkins Univ.*

Friday, April 11

SESSION III: STROKE THERAPY: EYE TOWARDS THE FUTURE

- Primate stroke: interface between mice and men. **E. Sander Connolly**, *Columbia Univ.*
- Nonpharmacologic approach to stroke therapy. Hemicraniectomy: when more is less. **Jeffrey I. Frank,** *Univ. of Chicago*
- Role of hypothermia and albumin as a non-pharmacologic approach to stroke therapy. **Myron D. Ginsberg**, *Univ. of Miami Sch. of Med.*
- Nonpharmacologic approach to stroke therapy: role of growth factors and stem cells. **Seth Finklestein**, *ViaCell, Inc.*
- Stroke therapy: the pharmacological future. **Giora Z. Feuerstein**, *Bristol-Myers Squibb*

Eight Category 1 CME credits towards the American Medical Association Physician's Recognition Award will be offered