ASPET Preliminary Program for Experimental Biology 2004 in Washington, DC

SYMPOSIA

Sunday, April 18

New insights on calcium signaling and vascular function
Chair: Joseph E. Brayden

The role for calcium in coordination of oscillating vascular smooth muscle cells. Christian Aalkjaer, Univ. of Aarhus, Aarhus, Denmark.
Encoding of calcium signals for vascular function. Mark T. Nelson, Univ. of Vermont Col. of Med.
Assessments of smooth muscle calcium regulation using genetic and molecular approaches. Michael I. Kotlikoff, Cornell Univ.
Regulation of vascular tone by transient receptor potential channels. Joseph E. Brayden, Univ. of Vermont Col. of Med.

Pharmacology of ADHD in 2004
Chairs: Monique Ernst and Jonathan L. Katz

The future of genetics in the pharmacology of ADHD. James Kennedy, Ctr. for Addiction and Mental Hlth., Toronto.
New therapeutic targets and animal models of ADHD. Jerry J. Buccafusco, Med. Col. of Georgia.
Novel treatment of ADHD. Lawrence Greenhill, Columbia Univ.
Stimulant effects in the developing brain. Susan Andersen, Harvard Med. Sch.
Functional neuroimaging in ADHD. Monique Ernst, NIH NIMH/MAP.

Phospholipase C-epsilon: A multifunctional signaling protein regulated by both heterotrimeric and Ras superfamily G proteins
Chair: Ken Harden

Mechanisms of receptor-mediated regulation of PLC-epsilon. Grant G. Kelley, SUNY Upstate Med. Univ., Syracuse.
Regulation of PLC-epsilon by G alpha subunits. Jon W. Lomasney, Northwestern Univ.
Rho-mediated activation of PLC-epsilon. Michele R. Wing, Univ. of North Carolina, Chapel Hill.
Function of PLC-epsilon in cardiac function and carcinogenesis. Tohru Kataoka, Kobe Univ., Japan

Mechanisms of adverse drug reactions
Chair: Ron N. Hines

Reactive intermediates as underlying causes of adverse drug reactions. B. Kevin Park, Univ. of Liverpool Med. Sch., U.K.
Felbamate as a model for understanding idiosyncratic drug reactions. Christine M. Dieckhaus, Merck Res. Labs.
Potential role of cytochrome b5 and cytochrome b5 reductase in drug hypersensitivity. Sunil Bajad, Univ. of Wisconsin at Madison.
Pharmacogenomics as a tool to better understand adverse drug reactions. Dan M. Roden, Vanderbilt Univ. Sch. of Med.
Genetic CYP2C9 variants as risk factors for coumadin-induced adverse drug reactions. Allan E. Rettie, Univ. of Washington Sch. of Pharmacy.

Toxicological and health implications of glutathione transport and metabolism
Chair: Larry H. Lash

Hepatic transport of glutathione: Mechanisms and relationship to liver function and pathology. Ned Ballatori, Univ. of Rochester.
Mitochondrial glutathione transport: role in susceptibility to chemically induced apoptosis. Larry H. Lash, Wayne State Univ.
Regulation of glutathione synthesis: Disease models and health implications. Terrance J. Kavanagh, Univ. of Washington.
Transport of glutathione and glutathione conjugates by multidrug resistance proteins. Susan P. Cole, Queen's Univ., Kingston, Ontario.

The pharmacology of eating and energy utilization: Neurocircuity and effectors
Chairs: Timothy H. Moran and Kenny J. Simansky

Regulation of eating by gastrointestinal hormone signals to the brain. Stephen R. Bloom, Imperial Col. Fac. of Med., London, U.K.
Central neural transduction of peripheral signals regulating food intake and energy balance: synaptic physiology of the medial hypothalamus. Michael A. Cowley, Oregon Hlth and Sci. Univ.
How peripheral endocrine signals of metabolic status influence motivational systems in the brain: Insulin, leptin, dopamine and reward. Dianne Figlewicz Lattemann, VA Pugent Sound Hlth. Care System and Univ. of Washington.
Relationship between opioidergic stimulation of eating and G-protein coupling in the reward circuitry. Heather Frost, Drexel Univ. Col. of Med.
From metabolic fluctuation to network action: How glucosensing neurons modulate eating. Barry E. Levin, VA Med. Ctr., East Orange, NJ.

Emerging concepts and compounds in obesity therapeutics
Chairs: Terry J. Opgenorth and Lou A. Tartaglia

The FDA obesity guidance. Patricia Beaston, FDA.
Unraveling the central nervous system pathways regulating body weight homeostasis. Joel K. Elmquist, Harvard Med. Sch.
Hypothalamic regulation of insulin action. Luciano Rossetti, Albert Einstein Col. of Med.
Development of selective thyroid hormone receptor agonists for treatment of obesity and hyperlipidemia. Johan Malm, Karo Bio AB, Huddinge, Sweden.
Endocannabinoids and energy balance: CB-1 receptor antagonists for the treatment of obesity. Andy G. Swick, Pfizer, Inc.
trans-3,4-dimethyl-4-arylpiperidine opioid receptor antagonists as a novel treatment for obesity. M.A. Statnick, Eli Lilly and Co.
MC4 receptor as a potential target for the treatment of obesity. Tung M. Fong, Merck and Co.
APD 356, a novel 5-HT_{2C} agonist for the treatment of obesity. C. Bjenning, Arena Pharmaceut., San Diego.

Future directions in pharmacology graduate training
Chair: Peter C. Preusch

Introduction: Training programs in pharmacology from the NIH perspective. Peter C. Preusch, NIH, NIGMS.
What constitutes a good training program in pharmacology from the reviewer's perspective. James C. Garrison, Univ. of Virginia Sch. of Med.
What the pharmaceutical industry of the 21st century is looking for in a pharmacologist. Robert R. Ruffolo, Wyeth Res.
Reflections on the preparation of pharmacology faculty. Karen M. Lounsbury, Univ. of Vermont and Suzanne B. Bausch, Uniformed Services Univ. of the Hlth. Sci.
Reflections on preparation for industrial pharmacology. Dolly A. Parasrampuria, McNeil Consumer & Specialty Pharmaceut.

Electronic resources for pharmacology education
Chairs: Gary C. Rosenfeld and Jack W. Strandhoy

Introduction and the use of web based Knowledge Objectives to enhance teaching and learning in pharmacology. Gary C. Rosenfeld, Univ. of Texas Hlth. Sci. Ctr., Houston.
Web Based database reference works in teaching graduate pharmacology. David B. Bylund, Univ. of Nebraska Med. Ctr.
HEAL and BEN as mulitmedia database resources for medical education. Robert G. Carroll, East Carolina Univ.
Using computer and PDA resources to enhance pharmacology education. Jack W. Strandhoy, Wake Forest Univ. Sch. of Med.

Neuroimaging: Strategies for application to preclinical neurotoxicology and neuropharmacology
Chair: Bill Slikker

Neuroimaging as a new approach to preclinical neurotoxicology and neuropharmacology. Bill Slikker, Jr., FDA, Natl. Ctr. for Toxicol. Res., Jefferson, Arkansas.
Small animal imaging using positron emission tomography. Arion Chatziioannou, UCLA Sch. of Med.
Investigating brain damage and repair with PET in rodents. Harley Kornblum., UCLA.
Brain T1 magnetic resonance imaging (MRI) is a semi-quantitative estimator of brain manganese concentrations in nonhuman primates (abstract 7436). David C. Dorman, CIIT Ctrs. For Hlth. Res., Research Triangle Park, NC
MRS to assess developmental neurotoxicity. Christine C. Cloak, Brookhaven Natl. Lab.

Monday, April 19

Knockout mouse models for studying in vivo function of cytochrome P450 and other drug metabolizing enzymes
Chair: Xinxin Ding

Using knockout and humanized mice to understand mechanisms of polycyclic hydrocarbon toxicity. Tim Dalton, Univ. of Cincinnati.
The role of CYP1B1 in the disruption of bone marrow hematopoiesis by polycyclic hydrocarbons. Colin R. Jefcoate, Univ. of Wisconsin at Madison.
Functional consequences of microsomal NADPH-cytochrome P450 oxidoreductase deficiency. Anna Shen, Univ. of Wisconsin at Madison.
A conditional P450 reductase knockout mouse model for investigating tissue-selective, P450-mediated drug metabolism and xenobiotic toxicity. Xinxin Ding, State Univ. New York State Dept. of Hlth.
Microarray Analysis of Hepatic Gene Expression in Liver-Specific NADPH-Cytochrome P450 Reductase (<I>Cpr</I>)-Knockout and Global <I>Cpr</I>-Knockdown Mouse Models. Yan Weng, SUNY at Albany (Abstract 4399)

Therapeutic opportunities for histamine H_3 receptor ligands
Chair: Arthur A. Hancock

Molecular pharmacology of the histamine H_3 receptor. Rob Leurs, Vrije Univ., Amsterdam, the Netherlands
Effects of H_3 antagonists in a variety of animal models of learning, memory and attention, and the side-effect liabilities of such compounds. Gerard B. Fox, Abbott Labs.
Effects of novel histamine H_3 receptor antagonists on food intake and body weight in rodents and in larger species. Karin Rimvall, Novo-Nordisc A/S
Role of presynaptic H_3 receptors in myocardial ischemic states. Roberto Levi, Cornell Univ.
Novel compounds interacting with the histaminergic system have antinociceptive effects in animal modelsLindsay B. Hough, Albany Med. Col.

Targeting chemokine receptors in the central nervous system
Chair: Jeffrey K. Harrison

Diverse functions of chemokines in the CNS. Jeffrey K. Harrison, Univ. of Florida.
Modified virally encoded chemokines to probe structure-function of chemokine receptors. Christopher N. Davis, Univ. of Florida Hlth. Sci. Ctr.
Chemokine regulation of lymphocyte and dendritic cell trafficking in experimental autoimmune encephalomyelitis. William J. Karpus, Northwestern Univ.
A genetic approach to understanding roles of chemokines and their receptors in animal models. Richard M. Ransohoff, Cleveland Clinic Fndn.
Development and evaluation of small molecule chemokine receptor antagonists. Richard Horuk, Berlex Biosciences.

Advances in fluorescence methods for receptor studies: 3rd International Symposium
Chair: Ian McGrath

Fluorescence in pharmacology. Ian McGrath, Univ. of Glasgow.
The use of fluorescent ligands in the study of vascular function. Craig Daly, Univ. of Glasgow.
Imaging neurotransmission at the nerve muscle junction. Tom Cunnane, Univ. of Oxford.
Kinetics of uptake and localization of fluorescent phorbol ester and protein kinase C or RasGRP3 as a function of time after phorbol ester addition. (abstract 3939). Derek C. Braun, NCI, NIH.
Control of Ca^{++} in the vascular wall. Christian Aalkjaer, Univ. of Aarhus, Aarhus, Denmark.
Use of fluorescent probes to study ligand-induced conformational changes in receptors. Brian Kobilka, Stanford Univ.

Tuesday, April 20

Early ADME support and the drug discovery process
Chair: Adedayo Adedoyin

Impact of high throughput assays on drug discovery. Adedayo Adedoyin, Aventis Pharmaceut.
Permeability assays on drug discovery. Tycho Heimbach, Pfizer Global R&D.
Assessment of metabolic stability in drug discovery. Michael Sinz, Bristol-Myers Squibb.
High throughput CYP inhibition assays. Larry Wienkers, Pharmacia.

Frontiers in anticoagulant pharmacology: New insights on mechanism of action and emerging novel therapeutics
Chairs: Madhu S.Chintala and Giora Z. Feuerstein

New insights into mechanisms of initiation and propagation of the coagulation cascade. Douglas Monroe, Univ. of North Carolina at Chapel Hill.
Thrombin receptors antagonists (PAR-1) as a novel approach in antiplatelet therapeutics. Madhu S. Chintala, Schering-Plough Res. Inst.
. Future anti-coagulants: Is 9 the winning number? Giora Z. Feuerstein, Merck Res. Labs.
Importance of animal models in thrombosis – research in guiding translation medicine. Ben R. Lucchesi, Univ. of Michigan Med. Sch.

Gender and the pharmacology of eating disorders: Linking molecules and signals to behavior
Chair: Joan M. Lakoski

Estrogen regulation of pituitary leptin. Gwen V. Childs, Univ. of Arkansas for Med. Sci.
On being female: A neuroanatomical perspective of neuropeptide Y receptor and estrogen interactions. Janice H. Urban, Finch Univ./Chicago Med. Sch.
Sex hormones, body weight regulation and food intake. Deborah J. Clegg, Univ. of Cincinnati Sch. of Med.
Gender and dietary nutrient regulation of insulin action. Renee Commerford, Novartis Inst. for Biomedical Res.
A rat model of binge-type eating: What we have learned so far. Rebecca L. Corwin, Penn State Univ.

siRNAs: Research tools/therapeutic molecules?
Chair: Michael T. McManus

Mechanisms of action of siRNAs. Gyorgy Hutvagner, Univ. of Massachusetts Med. Sch.
Mechanistics aspects of rational siRNA design. Anastasia Khvorova, Dharmacon.
Hairpin-delivered siRNAs in cell culture. Dave Turner, Univ. of Mich.
Lentiviral RNAi vectors for the identification and validation of novel therapeutic targets. Peter Sandy, MIT.
SiRNAs – transition to therapeutic molecules in humans. Jolanta Vidugiriene, Promega.

Polymorphisms in signaling cascades and effector molecules
Chair: J. David Port

Polymorphisms in a- and b-ARs; relationship to outcomes in cardiovascular disease. Stephen B. Liggett, Univ. of Cincinnati.
Genomic and posttranscriptional regulation of serotonin 5-HT2 receptor signaling. Elaine Sanders-Bush, Vanderbilt Univ.
Functional consequences of ion channel gene variants: Relationship to inherited arrhythmias. Robert S. Kass, Columbia Univ.
Polymorphisms in neurotransmitter transporters: Impact on transporter structure, function and regulation. Randy D. Blakely, Vanderbilt Univ.

Wednesday, April 21

Environmental agents and ion channel function
Chairs: William D. Atchison and Timothy Shafer

Disruption of cerebellar $GABA_A$ receptor-mediated inhibition by environmental mercurials, a possible contributor to selective neuronal vulnerability. William D. Atchison, Michigan State Univ.
Disruption of function of high-voltage activated calcium channels by environmental agents – implications for developmental function. Timothy Shafer, EPA, Research Triangle Park, NC.
Site-specific actions of ethanol on NMDA receptors. John J. Woodward, Med. Univ. of South Carolina..
Impairment of LTP and spatial learning are associated with disruption in glutamatergic synaptic function produced by environmental type exposure to lead. Tomas R. Guilarte, Johns Hopkins Univ.
Modulation of ligand-gated chloride channels in insect and mammalian neurons. Xilong Zhao, Northwestern Univ.
Inhibition of neuronal nicotinic acetylcholine receptors by the abused solvent, toluene. Ambuja Bale, EPA, Research Triangle Park, NC.

Dopamine receptor blockade in the development of 'atypical' antipsychotic agents
Chairs: Jack Bergman and Joseph Wettstein

The continued utility of dopamine receptor blockers in the treatment of psychosis. Philip G. Janicak, Univ. of Illinois at Chicago.
Dopamine partial agonists as dopamine receptor stabilizers: The next generation of dopamine-based antipsychotic drugs. Nicholas Waters, Carlsson Res. AB, Göteborg, Sweden.
Dissociation rate from D_2 receptors as a predictor of "atypicality" in antipsychotic action. Philip Seeman, Univ. of Toronto.
The role of $5HT_{1A}$ receptor activity in behavioral effects of some "atypical" antipsychotics. Wouter Koek, Univ of Texas Hlth. Sci. Ctr. at San Antonio.
Preclinical identification of serotonergic and glutametergic targets for the development of novel antipsychotics. Mark A. Geyer, UCSD Sch. of Med.

Neuroprotective effects of natural products
Chairs: Nancy Pearson and Dale Birkle

Mitochondrial dysfunction and therapies in Parkinson's disease. Clifford W. Shults, UCSD
Creatine as a neuroprotective treatment in Huntington's disease: Preclinical and early clinical studies. Steven M. Hersch, Harvard Med. Sch.
The multiplicity of actions of fruit polyphenolics in forestalling and reversing the deleterious effects of brain aging and behavior. James A. Joseph, Tufts Univ.
Use of Ginkgo biloba in dementia and Alzheimer's disease: The Gingko in Evaluation of Memory (GEM) Dementia Prevention Trial. Steven T. DeKosky, Univ. of Pittsburgh.

Rescuing mutant receptors and proteins: A new drug development strategy
Chair: P. Michael Conn

Influence of molecular and chemical chaperones on protein folding. William J. Welch, UCSF.
Rescue of mutants of the human gonadotropin releasing hormone receptor: Therapeutic strategies. P. Michael Conn, Oregon Hlth. and Sci. Univ.
Pharmacological chaperones acting on the V2 receptor; potential therapeutic applications. Michel Bouvier, Univ. of Montreal.
Retention of an aggregated mutant protein in the ER causes liver disease: Mechanisms of injury and potential chemoprophylactic strategies. David H. Perlmutter, Univ. of Pittsburgh Sch. of Med. and Children's Hosp. of Pittsburgh..

Protein-protein interactions in cellular signaling cascades: A new frontier for drug discovery
Chair: Haian Fu

Keynote address: Drug discovery at signaling interfaces. James A. Wells, Sunesis Pharmaceut., Inc., S. San Francisco.
Dynamic visualization of biochemical networks in living cells. Stephen Michnick, Univ. of Montreal.
Targeting phosphorylation-dependent protein-protein interactions. Haian Fu, Emory Univ. Sch. of Med.
Small molecule modulation affecting G-protein signaling: A unique approach to the GPCR pathways. Kathleen H. Young, Wyeth Research.

Cancer chemotherapy and drug metabolism
Chair: David S. Riddick

Interactions of anthracyclines with drug-metabolizing enzymes. David S. Riddick, Univ. of Toronto.
Bioreductive pro-drugs: Routes of activation and potential application in gene therapy. Ian J. Stratford, Univ. of Manchester.
Cytochrome P450-based cancer gene therapy. David J. Waxman, Boston Univ.
Role of glutathione conjugation and efflux in cellular resistance to alkylating agents and other reactive electrophiles. Charles S. Morrow, Wake Forest Univ.

Nexuses between dopamine and serotonin systems: Implications for antipsychotic drug actions
Chair: Frank I. Tarazi and John A. Schuetz

Selective dopamine/serotonin receptors mediate actions of antipsychotic drugs. Frank I. Tarazi, Harvard Med. Sch.
Mechanism of actions of atypical antipsychotic drugs: Role of serotonin 5-HT1A agonism. Junji Ichikawa, Vanderbilt Univ. Sch. of Med.

Molecular interaction sites for therapeutic agents targeting dopamine and serotonin receptors. John A. Schetz, Univ. of North Texas Hlth. Sci. Ctr.
Neurophysiological effects of antipsychotics on dopamine and serotonin systems. Kurt Rasmussen, Eli Lilly and Co.

Phosphodiesterases – status as therapeutic targets
Chairs: Larry Burgess and Jim Winkler

A series of sub-nanomolar PDE5 inhibitors leading to a clinical candidate more potent and selective than sildenafil. John E. Macor, Bristol Myers Squibb.
Discovery and development of PDE4 inhibitors. Tim Martins, ICOS Corp.
Discovery and development of cGMP PDE inhibitors. Joe Thompson, OSI Pharmaceut.
Phosphodiesterase 3 – status as a therapeutic target. Vincent C. Manganiello, NHLBI, NIH

DIVISION SESSIONS

Division for Behavioral Pharmacology workshop: Quantitative methods in behavioral pharmacology
Moderator: Jonathan L. Katz

Introduction. Jonathan L. Katz, NIDA, NIH, IRP
The isobole field and its application to quantitating opioid agonist interactions. Ronald J. Tallarida, Temple Univ. Sch. of Med.
Milligrams and isobolograms: Assessing drug intereactions in behavioral pharmacology. Stephen G. Holtzman, Emory Univ.
Opioid agonist interactions in rhesus monkeys: A case study ~~in the~~ of dose-addition analysis and the evaluation of drug combinations. S. Stevens Negus, Harvard Med. Sch.
Self-administration of drug mixtures. W.L. Woolverton, Univ. of Mississippi Med. Ctr.

Division for Cardiovascular Pharmacology Graduate Student and Postdoctoral Scientist Best Paper Competition
Chairs: Steven P. Jones and Richard H. Kennedy

Division for Clinical Pharmacology symposium: Mechanisms of gender effects on human drug response
Chair: David A. Flockhart

Mechanisms of gender effects on pharmacodynamics: Ion channel activity. Steven N. Ebert, Georgetown Univ. Med. Ctr.
Mechanisms of gender effects on pharmacokinetics. J. Christopher Gorski, Indiana Univ. Sch. of Med.
Mechanisms of gender effects on disease: Gender differences in 'intermediate phenotypes' for hypertension. Daniel T. O'Connor, UCSD

Division for Drug Discovery, Development and Regulatory Affairs symposium: Drug discovery and development: From idea to approval
Chair: Ben Yerxa

Drug discovery: Finding new targets and active compounds. H. Jefferson Leighton, BioDesign, Boston, MA
Drug evaluation: Non-clinical investigations of drug candidates. Ben Yerxa, Inspire Pharmaceut.
Drug development: Establishing clinical human safety and efficacy. Karla Jacobus, PPD Develop., Morrisville, NC
Drug approval: The FDA and the regulatory process. Pauliana Hall, PCH Integrated Regulatory Services, Laguna Niguel, CA

Division for Molecular Pharmacology Postdoctoral Award Finalists
Chair: Palmer W. Taylor

A new approach to structure-guided drug design: Fluctuations in the drug target and freeze frame inhibition. Palmer W. Taylor, UCSD.

Division for Neuropharmacology symposium: Cell biology of the catecholamine neuron: A symposium in honor of Julius Axelrod celebrating a decade of molecular exploration of mammalian phenotypes of catecholamine biosynthetic enzyme, transporter and metabolizing enzyme deficiency, and their clinical relevance to neuronal excitability, food- and drug-related behaviors, and neuronal development and degeneration.
Chair: Lee Eiden

Introduction. Solomon Snyder, Johns Hopkins.

Disruption of striatal dopamine signaling causes amphetamine-induced hypophagia. Richard Palmiter, Univ. of Washington.
The vesicular monoamine transporters and other regulated traits of monoamine-secreting cells. Lee E. Eiden, NIMH-IRP, NIH
Regulated trafficking of catecholamine transporters in presynaptic terminals. Randy D. Blakely, Vanderbilt Univ.
COMT: From gene to brain and behavior. Daniel Weinberger, NIMH-IRP, NIH

Division for Pharmacology Education workshop: Team learning: Small-group activities in the large-group lecture hall
Moderators: Charles L. Seidel, Baylor Col. of Med. and Kathryn K. McMahon, Texas Tech. Univ. Hlth. Sci. Ctr.

Lectures remain the main instructional modality because they are efficient and summarize large bodies of material. However, learners are passive recipients of information. To increase active learning, small-groups have been adopted. This allows problem solving and application of knowledge in real-life situations but, demands faculty and facilities and can result in uneven inter-group instruction. Team Learning (TL) combines the strengths of lectures and small-groups. TL consists of three phases. In Phase 1learners acquire required content through self-study, lectures or both. In Phase 2 learners demonstrate their readiness to apply information through tests taken individually and in small-groups followed immediately by faculty feedback. In Phase 3 students solve problems in small-groups in the lecture hall. Keys to this phase are that groups work on the same problem, select their solution from a list, and simultaneously declare their selection. Problems are designed to generate inter-group controversy which faculty exploit as groups orally defend their selections. The rich discussion enables faculty to correct student thinking and model critical thinking.

This two-hour workshop will expose participants to the principles of Team Learning through their participation in a mock course using Team Learning. At key intervals participants will reflect on specific Team Learning principles to learn more about the process and to appreciate how Team Learning may be applied to their specific circumstance. By the end of the workshop participants will be able to describe the three phases of Team Learning, define differences between Readiness Assurance Tests and Group Activity questions and describe the elements of a good Group Activity question.

Division for Systems and Integrative Pharmacology symposium: Calcium mobilization to calcium sensitization: Identifying new pharmacologic targets in smooth muscle
Chairs: George Christ and Chris Wingard

Regulation of Ca^{2+}-mobilization in detrusor muscle. Gerry Herra, Univ. of Vermont Col. of Med.
K^{+} channels, gap junctions and smooth muscle. George J. Christ, Albert Einstein Col. of Med.
Actin cytoskeletal remodeling in smooth muscle. William T. Gerthoffer, Univ. of Nevada Sch. of Med.
ROS and Ca^{2+}-sensitivity in smooth muscle. Keith A. Jones, Mayo Clinic.
EETs and ionic conductance systems in cerebral vascular muscle. David R. Harder, Med. Col. of Wisconsin.
Rho-kinase and PKC sensitization in cavernosal smooth muscle. Chris J. Wingard, Med. Col. of Georgia.

Division for Toxicology symposium: Hepatoxicity: Signaling mechanisms in cell death and survival"
Chair: Harihara M. Mehendale

Mechanisms of acetaminophen hepatotoxicity: Oxidant stress and regeneration. Hartmut Jaeschke, Univ. of Arizona
Inflammation: A susceptibility factor in drug-induced liver injury. Robert A. Roth, Michigan State Univ.
Survival mechanisms in fatty hepatocytes. Anna Mae Diehl, Johns Hopkins, Univ.
Mechanisms of progression and regression in liver injury. Harihara M. Mehendale, Univ. of Louisiana at Monroe

Division for Drug Metabolism Platform Session: Biotransformation and drug transport
Chairs: Michael R. Franklin and Tim S. Tracy

LECTURES AND SPECIAL SESSIONS

Graduate Student Colloquium: Preserving and promoting our discipline: A workshop emphasizing pharmacology student participation
Chairs: Myron L. Toews, Stephanie W. Watts and Barbara S. Beckman

Pharmacology is a basic science discipline that encompasses a wide range of scientific interests, yet possesses the unique focus of studying substances that interact with living systems through chemical processes. As a discipline, pharmacology does not have the profile possessed by others, including physiology, microbiology and immunology. The focus of this workshop will be to utilize the talent and thought of our graduate students, in combination with Graduate Directors from

across the nation, and address questions/issues critical to preserving and, importantly, promoting pharmacology. Small groups will break out with a charged topic and, near the end of the meeting, present their ideas to the group. Where appropriate, these items will be forward to Council of ASPET for discussion.
Possible topics:
1. Summer Undergraduate Programs - does your institution have one? Is it useful in recruiting students to pharmacology?
2. Undergraduate Pharmacology courses - does your institution have one? Is it useful in recruiting students to pharmacology?
3. Incorporating pharmacology into other undergraduate courses (Physiology, micro)
4. Recruiting graduate students
a. What works?
b. What DOESN'T work?
5. Getting our message and identity out to the world (what is our message and how do we relay it?)***
I CONSIDER ISSUE 5 EXTREMELY CRITICAL. We suffer from an amazing lack of PR or understanding, but yet every individual in a developed country is living a life improved because of pharmacology. How do we make the public at large understand how important this is to their lives, and how proper training of students is necessary to ensure continuing development of drugs for future generations?
6. How is pharmacology "better" and/or "different" than other disciplines? How did you find out about pharmacology?
7. How can graduate students be proactive in their departments and schools?
8. How can graduate students be proactive at a higher level?
9. What are resources and affiliations available to pharmacology Graduate students
10. Would interaction with industry in a formal way be of use to your education as a pharmacologist? If so, how do you envision this?

2004 Teaching Institute: Strategies for collaborative/integrative teaching and research relationships between pharmaceutical sciences and pharmacy practice faculties
Chairs: Ed Bilsky and Paula Witt-Enderby

Pharmacy education: Building a strong foundation for practice through science and research. Gayle A. Brazeau, SUNY at Buffalo.
Impact of clinical research on patient care. Milap C. Nahata, Ohio State Univ. Col. of Pharmacy
Coordinated Pharm.D. and Ph.D. programs: Building bridges from the bench to the clinic. Kim L.R. Brouwer, Univ. of North Carolina.

Minorities Committee Symposium: Careers in science: the specifics of how to get where you want to be
Chairs: Richard De La Garza and Margarita L. Dubocovich

The Minorities Committee: Current goals and future objectives. Margarita L. Dubocovich, Northwestern Univ.
An overview of career paths in science. Richard De La Garza, II, Albert Einstein Col. of Med.
A career in academia. Sunny Ohia, Univ. of Houston.
A career in industry. Marlene L. Cohen, Creative Pharmacology Solutions LLC.
A career in government science. Jean Lud Cadet, NIH, NIDA, IRP, Baltimore.
A career as a college professor. Shubhik K. DebBurman, Lake Forest Col.
A career in science editing. Barbara B. Van Renterghem, Eaton Publishing.

Public Affairs Workshop: Scientific and Regulatory Challenges Involving Dietary Supplements and Botanical Products
Chair: Rudolph Juliano

Speakers:
Mark McClellan, Commissioner, Food and Drug Administration
Paul M. Coates, Director, Office of Dietary Supplements, NIH
Stephen E. Straus, Director, National Center for Complementary and Alternative Medicine, NIH

Topics to be addressed include: how to promote a stronger scientific foundation at the FDA and the need to promote better health through better research; how new collaborations with NIH will help to improve our understanding of the underlying mechanisms of action and help to improve safety and efficacy of these products; research opportunities for the extramural community; and regulatory perspectives on the Dietary Supplement Health & Education Act of 1994 (DSHEA).

Public Affairs Workshop: Systems and Integrative Biology
Chair: David Bylund

Speakers:
Jerry J. Buccafusco, Medical College of Georgia
Gerald Schaefer, Wil Research Laboratories, Inc.
Stanley J. Wiegand, Regeneron Pharmaceuticals
Steve Zeisel, Univ. North Carolina
Irv Zucker, Univ. Nebraska
Peter C. Preusch, NIGMS, NIH

The advent of molecular biology has produced a vast wealth of information on human health and disease. However, there has been a diminishment in the number and ability of trained investigators – and students pursuing training and research – in the integrative and organ systems sciences. Science cannot effectively study disease or treatments for a disease simply by using isolated molecules, cells, or organs. Speakers will give their perspectives on the challenges and opportunities for enhancing the integrative & organ systems sciences by addressing its impact on both academic and industrial concerns.

Short Course: A beginner's guide to RNAi
Chair: Michael T. McManus

Biology of RNA interference in mammals. Michael T. McManus, MIT
How to use siRNAs. Gyorgy Hutvagner, Univ. of Massachusetts Med. Sch.
How to make and use pol III hairpins. Dave Turner, Univ. of Michigan.
How to make and package lentiviral RNAi vectors. Peter Sandy, MIT.

Bernard B. Brodie Award Lecture
Structural and functional diversity in heme monoxygenases. Thomas L. Poulos, Univ. of California, Irvine.

P.B. Dews Award Lecture
The origin and development of behavioral pharmacology. Joseph V. Brady, Johns Hopkins Univ. Sch. of Med.

John V. Croker Lecture
Does-response expectations in therapeutics, James Black Fndn., London, U.K.
Speaker: Sir James Black

SATELLITE MEETINGS (Separate Registration Required)

Friday, April 16

Pharmacotherapy of obesity: Targets and tools for the 21st century
An ASPET-Ray Fuller Symposium
Chairs: Kenny Simansky and Timothy Moran

Framing the problems for research in obesity and the role of NIH in progress toward solutions. Philip F. Smith, NIDDK, NIH.
A clinical view of the obesity epidemic and current pharmacologic treatments. F. Xavier Pi-Sunyer, Saint Luke's/Roosevelt Hosp.
The new neuroendocrinology of energy homeostasis. Michael W. Schwartz, Univ. of Washington.
The pharmacology of melanin concentrating hormone antagonists in the regulation of eating and body weight. Timothy J. Kowalski, Schering Plough Res. Inst.
Melanocortins receptors as targets for the development of novel anti-obesity agents. Russell J. Sheldon, P&G Pharmaceut.
Molecular physiology of adipocyte signaling and lipolysis. Sheila Collins, Duke Univ. Med. Col.
Fatty acid synthase inhibitors as therapeutic tools: Basic science and clinical outlook. Frank Kuhajda, Johns Hopkins Univ. Sch. of Med.
Serotonergic mechanisms regulating eating and satiation. Kenny J. Simansky, Drexel Univ. Col. of Med.
Serotonergic 5-HT_{2c} receptor agonists as novel therapeutic agents for obesity. Keith Miller, Bristol Myers Squibb.
Peripheral peptidergic mechanisms regulating food intake. Timothy H. Moran, Johns Hopkins Univ. Sch. of Med.
CCK-1R receptor agonists: A promising approach for the treatment of obesity. Jerzy R. Szewczyk, GlaxoSmithKline.

Saturday, April 17

Second RGS Protein Colloquium
Chairs: Vadim Arshavsky and David P. Siderovski

RGS proteins: Past, present, future. David P. Siderovski, Univ. of North Carolina at Chapel Hill.
Mechanisms of feedback inhibition by RGS protein induction and turnover. Henrik G. Dohlman, Univ of North Carolina at Chapel Hill.
RGS protein control of centrosome movement during mitosis in C. elegans embryos. Michael R. Koelle, Yale Univ.
Role of the RGS domain in G protein-coupled receptor kinase function. Jeffrey L. Benovic, Thomas Jefferson Univ.
RGS insensitive G proteins as probes of physiological RGS function. Richard R. Neubig, Univ. of Michigan
Regulation of vascular smooth muscle relaxation and blood pressure by RGS2. Michael E. Mendelsohn, Tufts Univ.
Investigation of RGS proteins toward modulation of neurobiological disorders. Kathleen H. Young, Wyeth Res.
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