

UNIVERSITY OF
LOUISVILLE[®]

SCHOOL OF MEDICINE

Department of Pharmacology & Toxicology

2011 Annual Report



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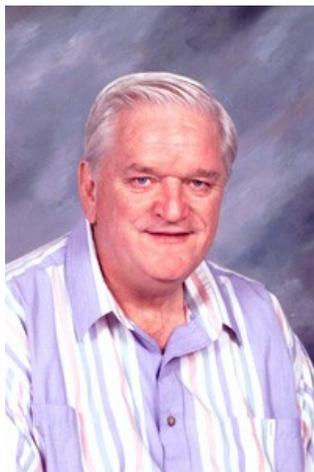
Department of Pharmacology and Toxicology-2011

MISSION

The Department of Pharmacology and Toxicology is committed to academic excellence and to the attainment of regional, national, and international recognition for the quality of its educational, research, and service activities. Guided by the University of Louisville Strategic Plan (The 2020 Plan) to continue our path to national prominence, the mission of the Department of Pharmacology and Toxicology focuses on five broad objectives:

- Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, nursing, and other health care professional students. Emphasis is placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.
- Advance biomedical knowledge through high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville 2020 Plan.
- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who will provide and advance biomedical education, research, and service.
- Provide instruction of the highest quality in pharmacology and toxicology that is appropriate for students at the undergraduate, graduate, and postgraduate levels.
- Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

FACULTY RETIREMENTS



Leonard C. Waite, PhD

Professor Emeritus of Pharmacology and Toxicology

Professor Len Waite retired and was appointed Professor Emeritus effective July 1. He provided exemplary leadership, teaching, and service to the University of Louisville for 40 years. Dr. Waite served as Director of the Department of Pharmacology and Toxicology graduate program for 25 years and served on the graduate committees of over 20 students. In addition to biomedical graduate students, Dr. Waite directed a large and diverse array of undergraduate, graduate, and professional students in the Schools of Arts & Sciences, Dentistry, Medicine, and Nursing. Dr. Waite was recognized for his excellence in teaching by the School of Dentistry and by the University by receipt of the President's Award for Distinguished Service. His willingness to devote such leadership and teaching efforts to such a large and broad array of our educational programs at the University of Louisville is testament to his talent, work ethic and dedication.

FACULTY PROMOTIONS



La Creis R. Kidd, Ph.D. was promoted to associate professor with tenure and her endowed chair appointment as Our Highest Potential in Cancer Research was renewed.

NEW FACULTY APPOINTMENTS (Primary appointments)



Igor S. Lukashevich, MD, PhD, DSci
Professor of Pharmacology & Toxicology

Igor was recruited from the University of Maryland with appointment effective September 1 in partnership with the Center for Predictive Medicine. His research interests include novel vaccine technologies (virus-like-particle vectors; reassortant vaccines, infectious DNA vaccination); molecular biology and pathogenesis of viral hemorrhagic fevers.

NEW FACULTY APPOINTMENTS (Associate appointments)



Levi J. Beverly, PhD
Assistant Professor of Medicine (Division of Hematology and Oncology)

Research Interests:

Regulation of anti-apoptotic proteins in cancer progression and treatment



Hermann B. Frieboes, PhD
Assistant Professor of Bioengineering

Research Interests:

1) Develop and apply realistic, predictive biocomputational models integrated with clinical and laboratory data to study cancer growth and treatment; 2) Design of patient-specific therapies; and 3) Design of multiscale biocomputational models to describe the complex interaction between cancer treatment and the immune system.



Yiru Guo, PhD
Associate Professor of Medicine (Division of Cardiovascular Medicine)

Research interests:

Cardio-thoracic and vascular surgery, physiology, and pharmacology. Research focuses on: (i) elucidating the mechanisms of ischemic- pharmacologic- and exercise-induced preconditioning by using the ischemia/reperfusion model in genetically engineered animals, (ii) studying protection of ischemic myocardium by using gene and/or cell therapy, and (iii) elucidating adaptations to ischemia/reperfusion injury in the aging heart.



Steven P. Jones, PhD

Associate Professor of Medicine (Division of Cardiovascular Medicine)

Research Interests:

Metabolic signaling in the cardiovascular system



Colleen B. Jonsson, PhD

Professor of Microbiology and Immunology

Research Interests:

Molecular virology of emerging negative-strand RNA viruses; natural history, ecology, evolution and treatment.



Walter H. Watson, PhD
Assistant Professor of Medicine (Division of Gastroenterology, Hepatology and Nutrition)

Research Interests:

Oxidative stress and redox signaling; Mechanistic toxicology; Alcoholic and nonalcoholic fatty liver disease

NEW FACULTY APPOINTMENTS (Adjunct appointments)

John C. Lipscomb, PhD, DABT, F.A.T.S., Adjunct Associate Professor

PhD (1991), Pharmacology and Toxicology, University of Arkansas for Medical Sciences
Toxicologist, U.S. Environmental Protection Agency, Office of Research and Development,
National Center for Environmental Assessment, Cincinnati, OH

APPOINTMENTS (administration)

David W. Hein was re-appointed Department Chair for a five year term following a comprehensive review. He was also appointed Interim Chair of the Department of Microbiology and Immunology.

William M. Pierce, Jr. was appointed Executive Vice President for Research and Innovation following a nationwide search.

RESIGNATIONS (Joint appointment)

Irene Litvan (primary appointment in the Department of Neurology) resigned her position, August 31 to accept the Tasch Endowed Professor in Parkinson Disease Research and Director of the Movement Disorders Program at the University of California-San Diego.

FACULTY HONORS

- **Aruni Bhatnagar** received an additional appointment as the Smith and Lucille Gibson Chair in Medicine

- **Lu Cai** was appointed councilor of OVSOT.
- **David W. Hein** received the President's Award from the University of Wisconsin-Eau Claire.
- **Y. James Kang** received the Distinguished Society Award from the Society of Experimental Biology and Medicine.
- **La Creis R. Kidd** was promoted to Associate Professor with tenure and her endowed chair appointment was renewed.
- **Igor S. Lukashevich** was appointed University Scholar.
- The top student award in the Dental Pharmacology and Therapeutics course will honor **Professor Len Waite**.

GRADUATE STUDENT HONORS

- **Shyam S. Bansal** received the KC Huang Outstanding Graduate Student Award.
- **Alex Belshoff** received a graduate student poster award at the Brown Cancer Center annual retreat.
- **Amanda Lasnik** received a third place masters student research award at Research!Louisville.
- **Carmine Leggett** received a first place doctoral student research award at Research!Louisville and received an NIH travel award to participate in a graduate student symposium.
- **Lori Millner** was an invited speaker at the St. Jude National Graduate Student Symposium and presented a poster by invitation at the ERA of Hope DOD Breast Cancer Research Conference.
- **Clarisse Muenyi** received a 3rd place graduate student award at SOT Metals Specialty Section.
- **Olive Ngalame** received an SOT graduate student travel.
- **Robin Schmidt** was selected to give an oral research presentation at the OVSOT meeting.

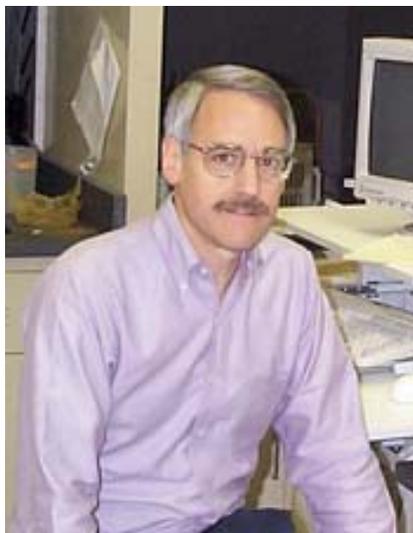
FACULTY WITH PRIMARY APPOINTMENTS



Gavin E. Arteel, PhD

Professor and Associate Chair for Research
Ph.D., Toxicology, University of North Carolina-Chapel Hill (1997).

Research Interests: Mechanisms of oxidative stress; mechanisms of alcohol-induced hepatitis, pancreatitis, and hepatocellular carcinoma.



Frederick W. Benz, PhD

Professor
Ph.D., Pharmacology, University of Iowa (1970).

Research Interests: Biochemical pharmacology and toxicology; biochemical mechanisms of drug action and toxicity.



Jian Cai, PhD

Assistant Professor

Ph.D., Pharmacology and Toxicology, University of Louisville (1999).

Research Interests: Application of mass spectrometry in biomedical research. Drug and metabolite identification and quantification. Protein identification and post-translational modification. Hemoglobin adducts as biomarkers of chemical exposure and pathogenesis.



Theresa S. Chen, PhD

Professor

Ph.D., Pharmacology, University of Louisville (1971).

Research Interests: Biochemical toxicology; role of glutathione in aging toxicology; general and specific toxicity of environmental pollutants.



Keith R. Davis, PhD

Professor

Ph.D., Molecular, Cellular and Developmental Biology, University of Colorado (1985)

Research Interests: Development of plant-made pharmaceuticals, activation of gene expression by oxidative stress, and the role of innate immunity in cancer initiation and progression.



Ramesh C. Gupta, PhD

Professor and Agnes Brown Duggan Chair of Oncological Research

Ph.D. Analytical/Physical Chemistry, University of Roorkee (1972)

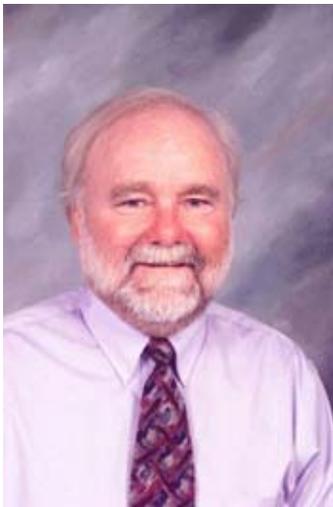
Research Interests: Development and identification of intermediate biomarkers to investigate etiology and prevention of human cancers resulting from both environmental and endogenous exposures.



David W. Hein, PhD

Professor and Peter K. Knoefel Chair of Pharmacology and Toxicology
Ph.D., Pharmacology, University of Michigan (1982).

Research Interests: Molecular pharmacogenetics; molecular epidemiology; functional genomics; genetic predisposition to chemical carcinogenesis and drug toxicity; molecular genetics; environmental toxicology.



Harrell E. Hurst, PhD

Professor
Ph.D., Toxicology, University of Kentucky (1978).

Research Interests: Analytical toxicology and kinetics with emphasis on qualitative and quantitative techniques, including gas chromatography, high pressure liquid chromatography and GC/mass spectrometry.



Y. James Kang, PhD

Professor

Ph.D., Cell Biology and Zoology, Iowa State University (1989).

Research Interests: Molecular and cardiac toxicology. Transgenic and knock-out animal models to study oxidative injury and antioxidant systems in the heart. Biological functions and toxicological significance of metallothionein and glutathione in vivo.



La Creis R. Kidd, PhD, MPH

Associate Professor and Our Highest Potential Endowed Chair in Cancer Research

Ph.D., Toxicology, Massachusetts Institute of Technology (1997).

Research Interests: Gene-gene and gene-environmental interactions; polymorphic xenobiotic metabolizing enzymes and prostate cancer susceptibility; cancer health disparities.



Igor S. Lukashevich, MD, PhD, DSci

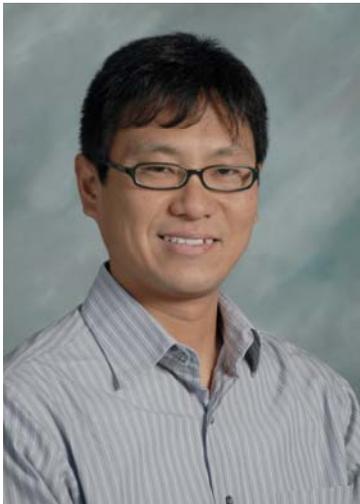
Professor of Pharmacology & Toxicology

M.D., Minsk Medical Institute, Belarus (1973);

Ph.D., Institute of Virology, Academy of Medical Science, Moscow Russia (1976);

D.Sc., Institute of Virology, Academy of Medical Science, Moscow Russia (1987)

Research Interests: Novel vaccine technologies (virus-like-particle vectors; reassortant vaccines, infectious DNA vaccination); molecular biology and pathogenesis of viral hemorrhagic fevers.

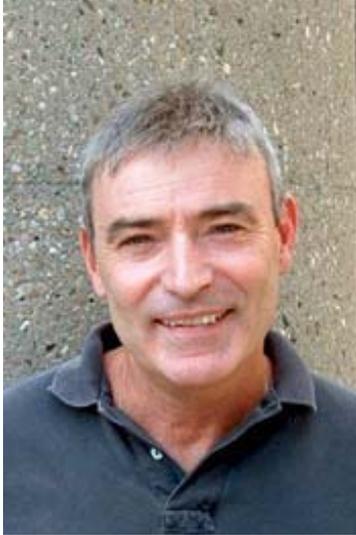


Nobuyuki Matoba, PhD

Assistant Professor

Ph.D., Applied Life Sciences, Kyoto University, Japan (2001).

Research Interests: Development of vaccines and antivirals, mucosal immune response to foreign substances, and plant biotechnology for human health.



W. Glenn McGregor, MD

Professor

M.D., University of Michigan (1976).

Research Interests: Molecular biology of DNA damage, repair and mutagenesis; molecular mechanisms of mutagenesis induced by model carcinogens; molecular mechanisms of replication of DNA templates containing well-defined site specific damage.



Steven R. Myers, PhD

Associate Professor

Ph.D., Pharmacology, University of Kentucky (1986).

Research Interests: Drug metabolism, metabolism of xenobiotics and chemical carcinogens; use of hemoglobin as biomarker in exposure to xenobiotics.



Donald E. Nerland, PhD

Professor

Ph.D., Medicinal Chemistry, University of Kansas (1974).

Research Interests: Biochemical toxicology; metabolism of drugs and environmental pollutants.



Kenneth E. Palmer, PhD

Associate Professor

Ph.D., Microbiology, University of Cape Town (1997)

Research Interests: Development of vaccines and antiviral proteins to prevent and treat viral diseases that predispose people to development of cancer.

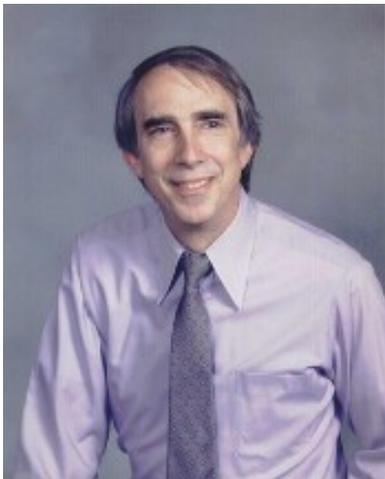


William M. Pierce Jr, PhD

Professor

Ph.D., Pharmacology and Toxicology, University of Louisville (1981).

Research Interests: Mechanisms of bone formation and resorption; design of novel drugs for management of osteoporosis; biomolecular mass spectrometry; proteomics in structural biology.



Peter P. Rowell, PhD

Professor and Vice Chair for Graduate Education

Ph.D., Pharmacology and Therapeutics, University of Florida (1975).

Research Interests: Neuropharmacology; effect of drugs on brain neurotransmitters and receptors.



Uma Sankar, PhD

Assistant Professor

Ph.D., Molecular, Cellular, and Developmental Biology, Ohio State University (2003).

Research Interests: Role of calcium/calmodulin-dependent protein kinase signaling in hematopoietic stem cell biology and cancer.



Zhao-Hui (Joe) Song, PhD

Professor

Ph.D., Pharmacology, University of Minnesota (1992).

Research Interests: Molecular pharmacology; cloning and functional characterization of novel G protein-coupled receptors; molecular mechanisms of action and structure-function relationships of cannabinoid (marijuana) receptors.

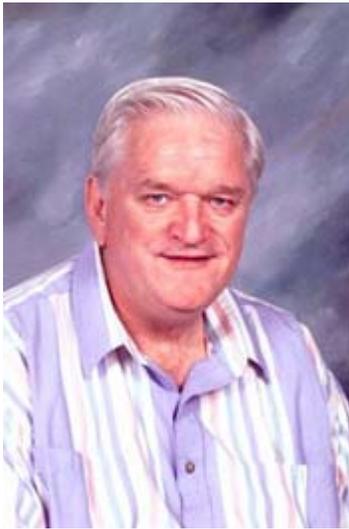


J. Christopher States, PhD

Professor and Graduate Director: Recruitment and Admissions

Ph.D., Molecular Biology and Pathology, Albany Medical College/Union University (1980).

Research Interests: Molecular biology and molecular genetics of DNA damage and repair in humans; mechanisms of chemoresistance; arsenic toxicity and cell cycle disruption.



Leonard C. Waite, PhD

Professor Vice-Chair for Education

Ph.D., Pharmacology, University of Missouri (1969).

Research Interests: Endocrine pharmacology; mechanism of action of hormones; pharmacological modulation of hormone action; mineral homeostasis.



Walter M. Williams, MD, PhD

Professor

Ph.D., Pharmacology, University of Louisville (1970); M.D., University of Louisville (1974).

Research Interests: Studies of drug elimination (metabolism and excretion).

FACULTY WITH JOINT APPOINTMENTS



George R. Aronoff, MD

Professor of Medicine and Professor of Pharmacology and Toxicology

M.D., Indiana University (1975).

Research Interests: Effects of uremia on drug disposition in humans; drug nephrotoxicity and renal drug metabolism, artificial intelligence.



Shirish Barve, PhD

Professor of Medicine and Professor of Pharmacology and Toxicology
Ph.D., Molecular Pathogenesis, University of Kentucky (1990).

Research Interests: Effects of alcohol on molecular mechanisms of cytokine action, gene expression and liver injury.



Aruni Bhatnagar, PhD

Professor of Medicine and Professor of Pharmacology and Toxicology
Ph.D., Chemistry, University of Kanpur (1985).

Research Interests: Cardiovascular toxicology; oxidative mechanisms of cardiovascular disease; lipid peroxidation in atherosclerosis; gene expression; secondary complications of diabetes.



Haribabu Bodduluri, PhD

Professor of Microbiology & Immunology and Professor of Pharmacology & Toxicology
Ph.D., Biochemistry, Indian Institute of Science (1983).

Research Interests: Signal transduction and chemoreceptors. Role of leukotriene receptors in inflammation and host response.



Jason A. Chesney, MD, PhD

Associate Professor of Medicine and Associate Professor of Pharmacology and Toxicology
Ph.D., Biomedical Sciences/Immunology, University of Minnesota (1997)
M.D., University of Minnesota (1998).

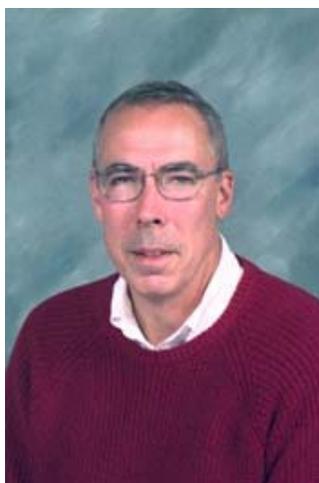
Research Interests: Novel regulators of cancer cell metabolism; identification of emerging viruses and the development of immune-based therapies against widely metastatic cancers.



Albert R. Cunningham, PhD

Associate Professor of Medicine and Associate Professor of Pharmacology and Toxicology
Ph.D., Environmental and Occupational Health, University of Pittsburgh (1998)

Research Interests: Structure-Activity Relationship Modeling: Carcinogens,
Chemotherapeutics, and Molecular Targets.



John W. Eaton, PhD

James Graham Brown Professor of Medicine and Professor of Pharmacology & Toxicology
Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969).

Research Interests: Biological oxidation/reduction reactions with special emphasis on
inflammatory diseases and neoplasia.



Paul N. Epstein, PhD

Professor of Pediatrics and Professor of Pharmacology and Toxicology
Carol B. McFerran Chair in Pediatric Diabetes Research
Ph.D., Pharmacology, Baylor College of Medicine (1981).

Research Interests: Molecular mechanisms of diabetogenesis. The use of transgenic animals to study genetics and molecular mechanisms in vivo.



Richard E. Goldstein, MD, PhD

Professor of Surgery and Professor of Pharmacology and Toxicology
vonRoenn Family Chair in Surgical Endocrinology
M.D., Thomas Jefferson University (1982)
Ph.D., Molecular Physiology and Biophysics, Vanderbilt University School of Medicine (1994).

Research Interests: Surgical endocrinology; surgical oncology.



Evelyne Gozal, PhD

Associate Professor of Pediatrics and Associate Professor of Pharmacology and Toxicology
Ph.D., Toxicology, University of Southern California (1997).

Research Interests: Signal transduction pathways involved in neuronal cell survival and neuronal cell death during hypoxia; cellular mechanisms underlying brain adaptation to chronic and intermittent hypoxia; identification of the kinases and transcription factors activated by hypoxia, leading to gene induction and to adaptation to oxygen deprivation.



Theo Hagg, MD, PhD

Professor & Endowed Chair of Neurological Surgery and Professor of Pharmacology & Toxicology
M.D., University of Leiden (1985)
Ph.D., Neurosciences, University of California-San Diego (1998)

Research Interests: Neurotrophic factor receptors and endogenous stem cells as drug targets to develop repair strategies for neurological disorders, including spinal cord injury.



Michal Hetman, MD, PhD

Associate Professor of Neurological Surgery and Pharmacology and Toxicology
Endowed Professor of Molecular Signaling

M.D., Warsaw Medical School (1994)

Ph.D., Experimental and Clinical Medicine, Polish Academy of Sciences (1997)

Research Interests: Role of signaling kinases in neuronal repair and demise.



Brad B. Keller, MD

Professor of Pediatrics, Pharmacology and Toxicology, and Bioengineering Kosair Charities
Chair and Chief, Division of Pediatric Heart Research

M.D., Pennsylvania State University (1985)

Research Interests: Cardiovascular bioengineering: Development of 3D tissues for heart repair and regeneration



Chi Li, PhD

Assistant Professor of Medicine and Assistant Professor of Pharmacology and Toxicology
Ph.D, Molecular Biology, Columbia University (1998)

Research Interests: Mechanisms of apoptotic pathways initiated from different intracellular organelles. Molecular and cellular mechanisms that affect inflammation and immunity.



Irene Litvan, MD

Professor of Neurology and Professor of Pharmacology and Toxicology
Raymond Lee Leiby Professor of Parkinson Disease Research
M.D., Universidad de la Republica (1979)

Research Interests: Etiology and treatment of Parkinsonian, Dementia, and Dystonia movement disorders.



Craig J. McClain, MD

Professor of Medicine and Professor of Pharmacology and Toxicology
M.D., University of Tennessee-Memphis (1972)

Research Interests: Role of cytokines in liver injury and other forms of hepatotoxicity, interactions with nutrition and toxicology.



Kelly M. McMasters, MD, PhD

Sam and Lolita Weakley Endowed Professor of Surgical Oncology
Professor of Pharmacology and Toxicology
Ph.D., Cell and Developmental Biology, Rutgers University (1988)
M.D., University of Medicine and Dentistry of New Jersey (1989)

Research Interests: Adenoviral vector cancer gene therapy. Development of vectors that selectively replicate in cancer cells. Mechanisms of E2F-1-induced apoptosis.



Donald M. Miller, MD, PhD

James Graham Brown Professor of Medicine Professor of Pharmacology and Toxicology
M.D., Duke University (1973); Ph.D., Biochemistry, Duke University (1973)

Research Interests: Molecular and clinical oncology; modulation of oncogene expression;
triplex DNA based gene therapy; treatment of melanoma.



Chin K. Ng, PhD

Associate Professor of Radiology and Associate Professor of Pharmacology and Toxicology
Ph.D., Medical Physics, University of Wisconsin (1989)

Research Interests: Development, evaluation, and kinetic studies of radiopharmaceuticals; the
use of molecular imaging for biomedical research.



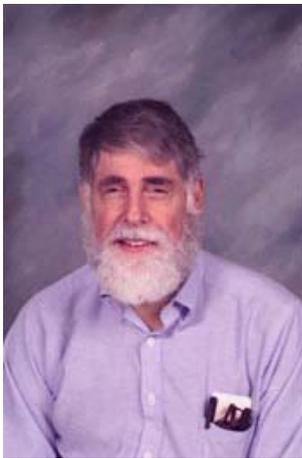
M. Michele Pisano, PhD

Professor of Molecular, Cellular and Craniofacial Biology

Professor of Pharmacology and Toxicology

Ph.D., Anatomy, Thomas Jefferson University (1985)

Research Interests: Molecular developmental toxicology; gene-environment interactions in normal and abnormal embryonic development; growth factor directed cellular signal transduction in embryonic cell growth and differentiation.



George C. Rodgers, MD, PhD

Professor of Pediatrics and Professor of Pharmacology and Toxicology

Humana Chair of International Pediatrics

Ph.D., Organic Chemistry, Yale University (1964); M.D., State University of New York (1975).

Research Interests: Toxicokinetics in drug overdoses and pharmacokinetics in pediatric disease states.



Jesse Roman, MD

Professor and Chair of Medicine and Professor of Pharmacology and Toxicology
M.D., University of Puerto Rico School of Medicine (1983)

Research Interests: Extracellular matrices and integrin receptors in lung development, injury, and repair; Role of nicotinic acetylcholine receptors and control of matrix expression in lung; Lung tissue remodeling in tobacco- and ethanol-related lung disorders; Control of lung carcinoma growth by extracellular matrices



Janice E. Sullivan, MD

Professor of Pediatrics and Professor of Pharmacology and Toxicology
M.D., University of Minnesota (1988)

Research Interests: Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.



Brian (Binks) W. Wattenberg, PhD

Associate Professor of Medicine and Associate Professor of Pharmacology & Toxicology
Ph.D., Biological Chemistry, Washington University (1981)

Research Interests: Sphingosine-kinase and lipid signaling. Trafficking of tail-anchored proteins.



Hong Ye, PhD

Associate Professor of Medicine and Associate Professor of Pharmacology and Toxicology
Ph.D., Biophysics, Keele University (1998)

Research Interests: Research to understand the structure and mechanism of tumorigenesis, with focus on Notch signaling pathway and chromosome DNA damage. X-ray crystallography, in combination with other biochemical and biophysics methods to understand the function of various molecular complexes.



Wolfgang Zacharias, PhD

Professor of Medicine and Professor of Pharmacology and Toxicology
Ph.D., Biochemistry, Philipps-University, Marburg, Germany (1980)

Research Interests: Ribozymes for gene therapy in rheumatoid arthritis; involvement and roles of cathepsins in oral cancers; gene expression profiling with DNA microarray chip technology.

V. FACULTY WITH ASSOCIATE APPOINTMENTS



Levi J. Beverly, PhD

Assistant Professor of Medicine (Division of Hematology and Oncology)

Research Interests: Regulation of anti-apoptotic proteins in cancer progression and treatment



Michael E. Brier, PhD

Professor of Medicine

Ph.D., Industrial and Physical Pharmacy, Purdue University (1986).

Research Interests: Clinical pharmacokinetics/dynamics; Drug dosing in renal failure



Lu Cai, MD, PhD

Associate Professor of Pediatrics and Radiation Oncology

Ph.D., Radiation Biology/Oncology, Norman Bethune University of Medical Sciences (1987)

Research Interests: Diabetic cardiomyopathy and nephropathy



Matthew C. Cave, MD

Assistant Professor of Medicine (Division of Gastroenterology, Hepatology, and Nutrition)
M.D., University of Kentucky (2001)

Research Interests: Steatohepatitis and liver cancer related to environmental and occupational chemical exposures; Complementary and alternative medicine in liver disease; Alcoholic and nonalcoholic fatty liver disease; Treatment of Hepatitis C.



Daniel J. Conklin, PhD

Associate Professor of Medicine (Cardiology)
Ph.D., University of Notre Dame (1995).

Research Interests: Environmental cardiology; cardiovascular toxicology



Teresa Whei-Mei Fan, PhD

Professor of Chemistry

Ph.D., Biochemistry, University of California-Davis (1983)

Research Interests: Metabolomics, proteomics, ecotoxicology, contaminant bioavailability, transport, biotransformation, and bioremediation



Hermann B. Frieboes, PhD

Assistant Professor of Bioengineering

Research Interests: 1) Develop and apply realistic, predictive biocomputational models integrated with clinical and laboratory data to study cancer growth and treatment; 2) Design of patient-specific therapies; and 3) Design of multiscale biocomputational models to describe the complex interaction between cancer treatment and the immune system.



Yiru Guo, PhD

Associate Professor of Medicine (Division of Cardiovascular Medicine)

Research Interests: Cardio-thoracic and vascular surgery, physiology, and pharmacology. Research focuses on: (i) elucidating the mechanisms of ischemic- pharmacologic- and exercise-induced preconditioning by using the ischemia/reperfusion model in genetically engineered animals, (ii) studying protection of ischemic myocardium by using gene and/or cell therapy, and (iii) elucidating adaptations to ischemia/reperfusion injury in the aging heart.



Ben Jenson, MD

**Professor and Senior Scientist, James Graham Brown Cancer Center
M.D., Baylor College of Medicine (1966)**

Research Interests: Translational immunology: humoral responses to prevent infection by papillomavirus.



Steven P. Jones, PhD

Associate Professor of Medicine (Division of Cardiovascular Medicine)

Research Interests: Metabolic signaling in the cardiovascular system



Colleen B. Jonsson, PhD

Professor of Microbiology and Immunology

Research Interests: Molecular virology of emerging negative-strand RNA viruses; natural history, ecology, evolution and treatment.



David A. Scott, PhD

Associate Professor of Periodontics, Endodontics & Dental Hygiene
Ph.D., Microbiology and Immunology, McGill University (1997)

Research Interests: Tobacco-induced alterations to microbial-associated molecular patterns of *Porphyromonas gingivalis*; Tobacco-induced alterations to innate-pathogen interactions; Tobacco alkaloid amplification of endogenous anti-inflammatory pathways; Identification of gingivitis- and periodontitis-specific infrared molecular signatures



David J. Tollerud, MD

Professor and Chair of Environmental and Occupational Health Sciences
M.D., Mayo Medical School (1978); M.P.H., Harvard Medical School (1990)

Research Interests: Occupational and environmental health; Occupational toxicology; molecular epidemiology.



Walter H. Watson, PhD
Assistant Professor of Medicine (Division of Gastroenterology, Hepatology and Nutrition)

Research Interests:

Oxidative stress and redox signaling; Mechanistic toxicology; Alcoholic and nonalcoholic fatty liver disease.

Faculty with Emeritus Appointments

- **Carr, Laurence A.**, Professor Emeritus; Ph.D., Michigan State University (1969).
- **Dagirmanjian, Rose**, Professor Emerita; Ph.D., University of Rochester (1960).
- **Darby, Thomas D.**, Adjunct Professor Emeritus; Ph.D., Medical College of South Carolina (1957).
- **Jarboe, Charles H.**, Professor Emeritus; Ph.D., University of Louisville (1956).
- **Scharff, Thomas G.**, Professor Emeritus; Ph.D., University of Rochester (1956).
- **Waddell, William J.**, Professor and Chair Emeritus; M.D., University of North Carolina (1955).
- **Waite, Leonard C.**, Professor Emeritus, Ph.D., University of Missouri (1969).

Faculty with Adjunct Appointments

- **Lipscomb, John C.**, Adjunct Associate Professor of Pharmacology and Toxicology; Ph.D., Pharmacology and Toxicology, University of Arkansas for Medical Sciences (1991).
- **Wang, Yang**, Adjunct Associate Professor of Pharmacology and Toxicology; M.D., Jiangxi Medical College (1982); Ph.D., Physiology, University of Toronto (1993).

Office Staff

Name	Position
Carpenter, Sharon	Administrative Assistant
Greca, Edie	Unit Business Manager Research Facilitator (Primary appointment in Department of Medicine; Part time in Department of Pharmacology and Toxicology)
McClain, Marion	Administrative Assistant
Rubin-Teitel, Heddy	Unit Business Manager (Primary appointment in Department of Medicine; Part time in Pharmacology and Toxicology)
Tatum, Shiloh	

Graduate Students

Name

Adcock, Scott
Al-Maqtari, Tareq
Arnold, Shelia
Avila, Diana
Baldauf, Keegan
Bansal, Shyam Sunder
Barton, Chris
Belshoff, Alex
Bourcy, Katie
Cao, Pengxiao
Chambers, Elana
Chen, Wei Yang (Jeremy)
Cheng, Pei-Hsin (Penny)
Donde, Hridgandh
England, Christopher
Eno, Colins
Fioret, Daniel
Greenwell, Caleb
Hallgren, Justin
Jones, Dominique
Kumar, Pritesh
Lasnik, Amanda
Leggett, Carmine
Massey, Veronica

Mathews, Stephanie
McAllister, Ryan
Millner, Lori
Moghe, Akshata
Muenyi, Clarisse
Ngalame Ntube, Nini Olive
Patil, Madhuvanti
Risner, Benjamin
Rogers, Erica
Russell, Gilandra
Schmidt, Robin
Shidal, Christopher
Stallons, L. Jay
Stepp, Marcus
Vicary, Glenn
Wahlang, Banrida
Wechman, Stephen
Wu, Huihui

2011 Entering Class of Graduate Students



Diana Avila

Home town: Bogata, Columbia
B.S. Biology, Florida International University



Christopher England

Home town: Elizabethtown, KY
B.S., Biochemistry, Bellarmine University



Caleb Greenwell

Home town: Louisville, KY
B.S. (cum laude), Biology, Univ. of Louisville



Dominique Jones

Home town: Durham, NC
B.A, Biochemistry, Smith College



Chris Shidal

Home town: Paducah, KY

B.S. Biology, University of Kentucky



Marcus Stepp

Home town: Floyds Knobs, IN

B.S., Biochemistry, Rose-Hulman Institute of Technology



Stephen Wechman

Home town: Georgetown, KY

B.S., Biology, Georgetown College

Postdoctoral Fellows

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PUBLICATIONS

1. Adams TB, Gavin CL, McGowen MM, Waddell WJ, Cohen SM, Feron VJ, Marnett LJ, Munro IC, Portoghese PS, Rietjens IM, Smith RL. The FEMA GRAS assessment of aliphatic and aromatic terpene hydrocarbons used as flavor ingredients. *Food Chem Toxicol.* Oct;49(10):2471-94. 2011 (Epub 2011 Jul 2.)
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E-pubs:

Cai:

1. Millner LM, Doll MA, Cai J, States JC, Hein DW. NATb/NAT1*4 promotes greater arylamine N-acetyltransferase 1 mediated DNA adducts and mutations than NATa/NAT1*4 following exposure to 4-aminobiphenyl. *Mol Carcinog*. 2011 Aug 11; PMID:21837760; PMCID: PMC3217153

2. Millner LM, Doll MA, Cai J, States JC, Hein DW. Phenotype of the Most Common "Slow Acetylator" Arylamine N-Acetyltransferase 1 Genetic Variant (NAT1*14B) Is Substrate-Dependent. *Drug Metab Dispos*. 2012 Jan; 40 (1):198-204. PMID:22010219

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2. Millner LM, Doll MA, Cai J, States JC, Hein DW. Phenotype of the Most Common "Slow Acetylator" Arylamine N-Acetyltransferase 1 Genetic Variant (NAT1*14B) is Substrate-Dependent. *Drug Metab Dispos.* 2011 Oct 18. doi: 10.1124/dmd.111.041855 (Epub ahead of print)

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Gupta:

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ABSTRACTS

Arteel:

National/International:

1. Avila D, Mohammad MK, Zhang JW, Arteel GE, McClain CJ, Barve S, Joshi-Barve S (2011) Multiple cell-death mechanisms are triggered in hepatotoxicity induced by acrolein, an environmental pollutant and lipid peroxidation product. *Hepatology* 54:510A.
2. Massey VL, Beier JI, Schmidt R, Zhong H, Arteel GE (2011) Integrin inhibitor cyclo-RGDfV blunts enhanced LPS-induced liver injury caused by ethanol in mice. *Hepatology* 54:970A.
3. Schmidt R, Falkner JC, Beier J and Arteel G (2011) Sulforaphane prevents acetaminophen-induced hepatic injury in mice. *The Toxicologist* 120:99.
4. Tan M, Schmidt RS, Beier JI, Zhong H, States JC, and Arteel GE (2011) Chronic low dose arsenic exposure enhances hepatic injury induced by high fat diet in mice. *The Toxicologist* 120:429.

Local/Regional:

1. Massey VL, Beier JI, Schmidt RH, Zhong H and Arteel GE (2011) Ethanol sensitization to LPS-induced liver injury: protection by the integrin inhibitor, cycloRGDfV. OVSOT annual meeting, Dayton, OH.
2. Baldauf KJ, Jokinen JD, Beier JI and Arteel GE (2011) Acetaldehyde dehydrogenase 2 (ALDH2) activation protects hepatocytes from mitochondrial damage and death caused by 4-hydroxynonenal. OVSOT annual meeting, Dayton, OH.
3. Massey VL, Beier JI, Schmidt RH, Zhong H and Arteel GE (2011) Integrin $\alpha\beta3$ mediates ethanol-enhanced liver damage caused by LPS. Research! Louisville.
4. Baldauf KJ, Jokinen JD, Beier JI and Arteel GE (2011) Acetaldehyde dehydrogenase 2 (ALDH2) activation protects hepatocytes from mitochondrial damage and death caused by 4-hydroxynonenal. Research! Louisville.
5. Schmidt RS, Tan M, Ding X, Zhong H, and Arteel GE (2011) Sulforaphane prevents liver injury caused by high-fat diet and olanzapine. Research! Louisville.
6. Schmidt RS, Tan M, Ding X, Zhong H, and Arteel GE (2011) High fat diet exacerbates olanzapine-induced liver injury: protection by sulforaphane. OVSOT annual meeting, Dayton, OH.

Cai:

1. Benz FW, Cai J, Nerland DE, and Hurst HE. Biomarkers of acrylonitrile exposure: Second

order rate constants for the reactions of acrylonitrile with the most reactive sites in human hemoglobin. *SOT 2011 Annual Meeting*, Washington, DC. March 6-10, 2011.

2. Tong MG, Yang X, Luo C, Cai J, Powell WD, Soltau JB, Liebmann JM, Ritch R, and Tezel G. Immunoproteomic Analysis of Serum Antibody Complexes in Glaucoma Patients. *ARVO 2011 Annual Meeting*, Fort Lauderdale, FL. May 1-5, 2011.

3. Tezel G, Yang X, Luo C, Cai J, and Powell DW. A Cell-Specific Proteomic Approach to Astrocyte Responses in Experimental Glaucoma. *ARVO 2011 Annual Meeting*, Fort Lauderdale, FL. May 1-5, 2011.

4. Luo C, Yang X, Cai J, Powell DW, and Tezel G. Comparative Analysis of Neuronal Injury and Proteomic Outcomes of Glaucomatous Neurodegeneration in TNF Receptor-1 (TNFR1) Knockout versus Wild-Type Mice. *ARVO 2011 Annual Meeting*, Fort Lauderdale, FL. May 1-5, 2011.

5. Yang X, Luo C, Cai J, Powell DW, Kuehn MH, and Tezel G. A20 Zinc Finger Protein in the Regulation of TNF- α Signaling in Human Glaucoma. *ARVO 2011 Annual Meeting*, Fort Lauderdale, FL. May 1-5, 2011.

6. Litchfield LM, Cai J, Pierce Jr. WM, Appana SN, Bates PJ, Datta S, Kulesza P, Young LS, and Klinge CM. Identification and functional characterization of COUP-TFII nucleolin interaction in breast cancer cells and tumors. *AACR 2011, Advances in Breast Cancer Research: Genetics, Biology, and Clinical Applications*. San Francisco, CA. October 12-15, 2011.

Chen:

1. Song, M et al. Copper deficiency-induced mitochondrial dysfunction exacerbates liver injury and fibrosis in a bile duct ligation rat model *Digestive Disease Week* (Control ID: 1038071). 2011

2. Song M et al., Chronic alcohol drinking exacerbates liver injury in high fructose diet fed mice. *Digestive Disease Week 2012* (Control ID: 1299458)

Gupta:

1. Aqil F, Jeyabalan J, Kausar H, Bansal S, Russell G, Singh I, Vadhanam M & **Gupta RC**. Sustained-release, multi-layer polymeric implants for heat-labile compounds. *Proc. Am. Assoc. Cancer Res.* 52: 4631, 2011.

2. Aqil F, Munagala R, Jeyabalan J, Vadhanam M & **Gupta RC**. Enhanced bioactivity of punicalagins by polymeric implants against benzo[a]pyrene-induced DNA adducts *in vivo*. *Proc. Am. Assoc. Cancer Res.* 52: 3711, 2011.

3. Bansal S, Kausar H, Vadhanam M, Aqil F, Jeyabalan J, Rai S, Ravoori S & **Gupta RC**. *Proc. Am. Cancer Res.* 52: 1863, 2011.
4. Cao P, Kausar H & **Gupta RC**. Potent chemotherapeutic activity of green tea polyphenols, blueberry anthocyanidin mixture and cisplatin: Synergistic effects. *Proc. Am. Cancer Res.* 52: 4627, 2011.
5. Jeyabalan J, Aqil F, Ravoori S, Vadhanam M & **Gupta RC**. Steady DNA adduct accumulation by dibenzo[a,l]pyrene implants. *Proc. Am. Cancer Res.* 52: 5557, 2011.
6. Kausar H & **Gupta RC**. Berry anthocyanidins inhibit key events of lung cancer metastasis: Effects on miRNA and protein targets. *Proc. Am. Cancer Res.* 52: 3693, 2011.
7. Vadhanam M, Aqil F, Ravoori S & **Gupta RC**. Bioavailability of ellagic acid/ellagitannins from black raspberry and pomegranate. *Proc. Am. Cancer Res.* 52: 4603, 2011.
8. Munagala R, Vadhanam M, Kausar H, Bansal S, Aqil F, Jeyabalan J, Ravoori S & **Gupta RC**. MicroRNA 'signature' during estrogen-mediated mammary carcinogenesis. *Proc. Am. Cancer Res.* 52: 3456, 2011.
9. Ravoori S, Higashi R, **Gupta RC** & Vadhanam M. Molecular targets of total methanolic and ethyl acetate fraction of triphala in colon cancer. *Proc. Am. Cancer Res.* 52: 3709, 2011.
10. **Gupta RC**, Jeyabalan J, Kausar H, Aqil F, Vadhanam M & Ravoori S. Chemopreventive and chemotherapeutic potential of blueberry and black raspberry against lung cancer using mouse models. *Proc. Am. Cancer Res.* 52: 4597, 2011.
11. **Gupta RC**, Kausar H, Jeyabalan J & Aqil F. Blueberry diet and blueberry bioactives inhibit lung cancer and enhance the activity of PACLITAXEL. Phytochemical Soc. of North America, 50TH Anniversary Meeting, Kona, December 2011. (Oral presentation)

Hein:

1. Millner, L.M., Doll, M.A., Cai, J., States, J.C. and Hein, D.W.: Effects of N-acetyltransferase 1 (*NAT1*10*) polymorphisms in NATb and NATa derived mRNA constructs on DNA adducts and mutations from 4-aminobiphenyl. *Proceedings of the Annual Meeting of the Society of Toxicology*, Abstract # 2908, Washington, DC, March 2011.
2. Millner, L.M., Doll, M.A., States, J.C. and Hein, D.W.: Differences in arylamine-induced mutagenesis with N-acetyltransferase 1 alternative mRNA isoforms. *Proceedings of the St. Jude National Graduate Student Symposium*, Memphis, Tennessee, March 2011.
3. Gibson, T., Bracci, P., Chiu, B., Hein, D., Hjalgrim H., Krickler, A., Nieters, A., Rothman, N., Sampson, J., De Sanjose, S., Skibola, C., Slager, S., Smedby, K., Vajdic, C., Wang, S., Zhang, Y., Zheng, T., and Morton, L. for the InterLymph Consortium. Smoking, N-acetyltransferase 2 and risk of non-Hodgkin lymphoma: an InterLymph pooled analysis. 3rd

North American Congress of Epidemiology, Montreal Quebec, Canada; *American Journal of Epidemiology* 177 (Suppl 11): S255, 2011.

4. Carrithers, A.L., Doll, M.A., and Hein, D.W.: NAT1 metabolism of alkylamines by genetic variants of human N-acetyltransferase 1. Summer Undergraduate Research Program, University of Louisville, Louisville, Kentucky, August 2011.
5. Millner, L.M., Doll, M.A., States, J.C. and Hein, D.W.: Alternative N-acetyltransferase transcripts promote altered arylamine DNA adducts and mutations following exposure to 4-aminobiphenyl: Implications on regulation and breast cancer. *Proceedings of the DOD Breast Cancer Research Program-Era of Hope Meeting*, P19-13, Orlando, Florida, August 2011.
6. Aya, S., Doll, M. and Hein, D.W.: E-cadherin mRNA expression in congenic rat rapid and slow acetylator lines. Ohio Valley Society of Toxicology summer student meeting, Louisville, Kentucky, August 2011.
7. Carrithers, A.L., Doll, M.A., and Hein, D.W.: NAT1 metabolism of alkylamines by genetic variants of human N-acetyltransferase 1. Ohio Valley Society of Toxicology summer student meeting, Louisville, Kentucky, August 2011.
8. Leggett, C.S., Doll, M.A, States, J.C., Trent, J.O., and Hein, D.W.: Identification and characterization of novel arylamine N-acetyltransferase small molecule inhibitors. Ohio Valley Society of Toxicology summer student meeting, Louisville, Kentucky, August 2011.
9. Hein, D.W.: Genetic modifiers of cancer risk from tobacco carcinogens. *Proceedings of the Ninth Annual Conference of the International Society for the Prevention of Tobacco Induced Diseases*, p. 28, Vienna, Austria, September 2011.
10. Aya, S., Doll, M. and Hein, D.W.: E-cadherin mRNA expression in congenic rat rapid and slow acetylator lines. *Proceedings of Research!Louisville*, MED-15, Louisville, Kentucky, October 2011.
11. Leggett, C.S., Doll, M.A, States, J.C., Trent, J.O., and Hein, D.W.: Small molecule inhibition of arylamine N-acetyltransferase 1: A novel molecular target for cancer prevention. *Proceedings of Research!Louisville*, GRD-51, Louisville, Kentucky, October 2011.
12. Millner, L.M., Linder, M.W., Hein, D.W. and Valdes Jr., R.: A novel single-cell separation technology (DEPArray™) useful for biomarker discovery. *Proceedings of Research!Louisville*, PRF-54, Louisville, Kentucky, October 2011.
13. Leggett, C.S., Doll, M.A, States, J.C., Trent, J.O., and Hein, D.W.: Identification and characterization of novel arylamine N-acetyltransferase small molecule inhibitors. Sixth Annual NIH National Graduate Student Research Conference, Bethesda, Maryland, October 2011.

14. Carrithers, A.L., Doll, M.A., and Hein, D.W.: NAT1 metabolism of alkylamines by genetic variants of human N-acetyltransferase 1. *Proceedings of the 10th Annual James Graham Brown Cancer Center Retreat*, Abstract #44, Louisville, Kentucky, October 2011.
15. Leggett, C.S., Doll, M.A., States, J.C., Trent, J.O., and Hein, D.W.: Small molecule inhibition of arylamine N-acetyltransferase 1: A novel molecular target for cancer prevention. *Proceedings of the 10th Annual James Graham Brown Cancer Center Retreat*, Abstract #70, Louisville, Kentucky, October 2011.
16. Hein, D.W.: Launch of the professional and undergraduate student cancer research program at the University of Louisville. *Proceedings of the 10th Annual James Graham Brown Cancer Center Retreat*, Abstract # 45, Louisville, Kentucky, October 2011.
17. Carrithers, A.L., Doll, M.A., and Hein, D.W.: NAT1 metabolism of alkylamines by genetic variants of human N-acetyltransferase 1. *Proceedings of Annual Meeting of the Kentucky Academy of Science*, Murray, Kentucky, November 2011.

Hurst:

1. Myers, S.R. and Hurst, H. E., Kinetics of formation of epoxide adducts of polycyclic aromatic hydrocarbons in vitro and in vivo with hemoglobin, The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.

Kang:

1. Kang YJ. Copper in cardiovascular pathogenesis and regeneration. International Conference of Trace Elements in Men and Animals (TEMA)-14, China, Sept 19-24, 2011.
2. Kang YJ. Advances in heart failure and regeneration. The 22nd Great Wall International Congress of Cardiology, Beijing, China, Oct 13-16 2011.
3. Kang, YJ. Mechanistic insights into copper-integrated bioactive materials for the therapy for myocardial infarction. China Heart Congress, Beijing, China, Aug 11-14, 2011.
4. Kang YJ. The role of metallothionein on mitochondrial oxidative stress in diabetic cardiomyopathy. The FASEB Journal, Proceedings of 2011 Annual Meeting of Experimental Biology, Washington DC, Apr 9-13, 2011.
5. Zhan L, Feng W, Bourcy K, Eaton JW, and Kang YJ. Cytochrome c oxidase is essential for copper supplementation-induced regression of hypertrophic cardiomyopathy in mice. Proceedings of the 50th Annual Meeting of the Society of Toxicology, Washington DC, March 6-10, 2011.

Kidd:

First/Corresponding Author National Posters:

1. James Rudd, Nicholas Sinnott-Armstrong, Jason Moore, Gaolin Zheng, ClarLynda Williams-DeVane, **LaCreis Kidd**. Support for Larger Epistatic Modeling Using an OpenCL Implementation of Multifactor Dimensionality Reduction, Rocky Mountain Bioinformatics Conference, Lake Tahoe, NV, December 2011.

2. **LaCreis R. Kidd**, PhD; Dominique Jones, BS; Camille C.R. Ragin, PhD; Maria D. Jackson, PhD; Norma McFarlane-Anderson, PhD; Rafael Flores-Obando, MSc; Seian Morrison, PhD; James Rudd, BS; Kevin S. Kimbro, PhD. Chemokine-associated SNPs Prostate Cancer in Men of African Descent. Caribbean Exploratory Research Center (CERC) Health Disparities Institute in St Thomas, St. Thomas Virgin Islands, USA, October 19-21, 2011.

3. Camille C.R. Ragin, Dominique Jones, Maria D. Jackson, Norma McFarlane-Anderson, Rafael Flores-Obando, MSc, Seian Morrison, Kevin S. Kimbro, **LaCreis R. Kidd**. Inflammatory Cytokine SNPs and Prostate Cancer in Black men. Caribbean Exploratory Research Center (CERC) Health Disparities Institute in St Thomas, St. Thomas Virgin Islands, USA, October 19-21, 2011.

4. **LaCreis R. Kidd**, Sydney C. Beache, Jie Zhang, Tiva VanCleave, James Rudd, Guy N. Brock, K.S. Kimbro. Chemokine-associated Genetic Variants as Predictors of Prostate & Breast Cancer Outcomes among European-Americans. Annual AACR Meeting, Orlando, FL, April 2011.

5. **LaCreis R. Kidd**, Dominique Jones, Camille Ragin, Maria Jackson, Seian Morrison, Rafael Flores-Obando, Kevin Kimbro. Chemokine-associated Genetic Variants as Predictors of Prostate Cancer Outcomes among men of African Descent. The Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved, Grand Hyatt Washington, Washington, DC, September 18-21, 2011.

6. Zhang J, **Kidd LR**, Brock GN. Comparison of Approaches for Detecting Gene-Gene Interactions for Survival Data. 10th Annual UT-ORNL-KBRIN Bioinformatics Summit, Memphis, TN, April 1-3, 2011.

7. Kevin S. Kimbro, Camille C.R. Ragin, Maria D. Jackson, Norma McFarlane-Anderson, Rafael Flores-Obando, MSc; Seian Morrison, James Rudd, Kevin S. Kimbro, **LaCreis R. Kidd**. Innate Immunity-associated SNPs and Prostate Cancer in Men of African Descent, Transgenomics of Cancer, San Francisco, CA, October 16, 2011.

First/Corresponding Author Local Posters:

1. Dominique Jones, Camille Ragin, Maria Jackson, Seian Morrison, Rafael Flores-Obando, Kevin Kimbro, **LaCreis R. Kidd**. Chemokine-Associated Genetic Variants as Predictors of Prostate Cancer Outcomes Among Men of African Descent. Research Louisville, October 10-14, 2011.

Lukashevich:

1. Xiaohong Jiang, Peter J. Bredenbeek, **Igor S. Lukashevich**. Cloning and Expression of Lassa Virus Antigens in YF17D Vector. 2011. Abstract. In: NIAID Workshop on Emergence and Re-Emergence of Arboviral Infections of Global Health Importance”, September 15-16, 2011. Rockville, MD, USA.
2. Irina Tretyakova, Ruth Florese, **Igor Lukashevich**, Peter Pushko. Next generation TC-83 vaccine: Improvement by using silent mutations. 2011. Abstract. In: NIAID Workshop on Emergence and Re-Emergence of Arboviral Infections of Global Health Importance”, September 15-16, 2011. Rockville, MD, USA.
3. Juan C Zapata, Gabriel Bedoya, Marco Goicochea, Joseph Bryant, David C Pauza, Lisa Sadzewicz, Luke Tallon, Garry Myers, Claire Fraser-Liggett, **Igor Lukashevich**, Maria S Salvato. Genetic stability of a Lassa vaccine candidate (ML29) in vaccinated animals. 2011. XV Congress of Virology, 11-16 September 2011, Sapporo Conventional Center. Program and Abstracts, p. 129.

Matoba:

1. Hamorsky K, Sankaran S, Davis K, Palmer K, **Matoba N**. “Highly efficient production of recombinant cholera toxin B subunit for mass vaccination against cholera” The Gordon Conference Tropical Infectious Diseases, March 13 – 18, Galveston, TX – *selected for an oral presentation*
2. Lasnik A, **Matoba N**, Palmer K. Investigation of the immunogenicity of griffithsin-based vaginal microbicides for HIV prevention. Research!Louisville October 2011
3. Husk A, Sankaran S, Hamorsky K, Palmer K, **Matoba N**. “Protein Engineering of the Mannose-Specific Lectin Actinohivin for Enhanced Antiviral Activity and Recombinant Producibility” James Graham Brown Cancer Center Retreat, October 28, Louisville, KY
4. Hamorsky K, Kouokam J, Bennett L, Davis K, Palmer K, **Matoba N**. “Investigation of Immunomodulatory Activity of Plant-derived Cholera Toxin B” James Graham Brown Cancer Center Retreat, October 28, Louisville, KY
5. Bennett L, Hamorsky K, **Matoba N**. “Utilization of Plant-derived Cholera Toxin B Subunit for Mass Vaccination against Cholera” 2011 Kentucky Academy of Science Annual Meeting, held at Murray University, Murray, KY, November 4 – 5, 2011

Myers:

1. Myers, S.R., Ahmed, M.T., Moustafa, N., and Ghada, G., Biomarkers of Environmental Pollution in Egypt. The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.

2. Myers, S.R., Biomarkers and Pharmacogenetics of Maternal and Fetal Tobacco Exposure: Effect of Maternal Smoking on Fetal Growth and Delivery, The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.
3. Myers, S.R. and Hurst, H. E., Kinetics of formation of epoxide adducts of polycyclic aromatic hydrocarbons in vitro and in vivo with hemoglobin, The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.
4. Myers, S.R., Amniotic Fluid Polycyclic Aromatic Hydrocarbons: A Potential Biomarker of First Trimester Exposure to PACs, The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.
5. Myers, S.R. and Yang, J., Measuring Prenatal Tobacco Exposure in Newborn Blood Spots via Assessment of Polycyclic Aromatic Hydrocarbons, The 23rd International Symposium on Polycyclic Aromatic Compounds, Muenster, Germany, Sept. 4th – 8th, 2011.

Palmer:

1. Kouokam JC, **Palmer KE**. Bioavailability and safety profile of the potent anti-HIV lectin after parenteral administration in a murine model. *Protection from HIV: Targeted Intervention Strategies Keystone Symposium*. March 20-25, 2011, Whistler, BC, Canada.
2. Husk A, Sankaran S, Hamorsky K, **Palmer KE**, Matoba N. Protein engineering of actinohivin for enhanced antiviral activity and recombinant producibility. *Proceedings of the J G Brown Cancer Center Retreat* October 2011.
3. Hamorsky K, Sankaran S, Davis K, **Palmer KE**, Matoba N. Highly efficient production of recombinant cholera toxin B subunit for mass vaccination against Cholera. *Proceedings of the J G Brown Cancer Center Retreat* October 2011.
4. Lasnik AB, Matoba N, **Palmer KE**. Investigation of the immunogenicity of griffithsin-based microbicides for HIV prevention. *Research!Louisville*. October 2011. *This poster won 3rd place in the Masters Student Category.*
5. Kouokam JC, **Palmer KE**. Mucosal distribution of the potent anti-HIV lectin Griffithsin after systemic administration. *Research!Louisville*. October 2011.
6. Barton CL, Garbett N, Chaires JB, **Palmer KE**. Endogenous serum protein binding profile and thermodynamic impact of antiviral lectin griffithsin on the serum interactome. *Research!Louisville*. October 2011.
7. Hamorsky K, Sankaran S, Davis K, **Palmer KE**, Matoba N. Highly efficient production of recombinant cholera toxin B subunit for mass vaccination against cholera. *The Gordon Conference Tropical Infectious Diseases*, March 13 – 18, Galveston, TX

8. Hamorsky K, Kouokam J, Bennett L, Davis K, **Palmer KE**, Matoba N. “Investigation of Immunomodulatory Activity of Plant-derived Cholera Toxin B” James Graham Brown Cancer Center Retreat, October 28, Louisville, KY

Sankar:

1. Cary, R. and Sankar U. “CaMKK2 as a Dual Action Inhibitor of Age and Malignancy-Induced Osteolysis”. 10th Annual Brown Cancer Center Retreat, October 28, 2011, The Olmstead, Louisville, KY. ***Won 2nd Place, Roving Research Prize.***

2. Wilkerson, DC., Cates J and Sankar U. “Gfer Contributes to Mitochondrial Homeostasis Through Interactions with Drp1”. 10th Annual Brown Cancer Center Retreat, October 28, 2011, The Olmstead, Louisville, KY.

Song:

1. Z.-H. Song, A. Kumar. The Effects of Prototypical Synthetic Cannabinoid Agonists on Aqueous Humor Outflow Facility Asia ARVO, Singapore, January, 2011

2. Jagjeet Singh, Zhuanghong Qiao, Jian Cai, William Pierce, Zhao-Hui Song, Patricia H. Reggio. The Cannabinoid CB2 Receptor/Gi complex: Evidence from Crosslinking and Computational Studies that CB2 Signals as an Activated Dimer. Biophysical Society Annual Meeting, Baltimore, MD, March, 2011

3. Akhilesh Kumar, Zhuanghong Qiao, Pritesh Kumar, Zhao-Hui Song. Effect of almitylethanolamide on Aqueous Humor Outflow. The Association for Research in Vision and Ophthalmology Annual Meeting, Fort Lauderdale, FL, May, 2011

4. Pritesh Kumar and Zhao-Hui Song. Homogenous Time Resolved Fluorescence (HTRF): Optimization and Validation of a Cell-Based cAMP Screening. International Cannabinoid Research Society Conference, St Charles, IL, July, 2011

5. Jagjeet Singh, Zhao-Hui Song and Patricia H. Reggio. The Cannabinoid CB2 Receptor/Gi complex: Crosslinking and Computational Studies Suggest that CB2 Signals as an Activated Dimer. International Cannabinoid Research Society Conference, St Charles, IL, July, 2011

6. Pritesh Kumar and Zhao-Hui Song. Homogenous Time Resolved Fluorescence (HTRF): Optimization and Validation of a Cell-Based cAMP Screening Technology for the Cannabinoid Receptors CB1 and CB2. Research Louisville, October 2011

States:

Published Abstracts:

1. Tan, M, Schmidt, RH, Zhong, H, States, J, Arteel, GE. Chronic low - dose arsenic exposure enhances hepatic injury induced by high fat diet in mice Abstract # 2002. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 120, Number S-2, March 2011

2. Rogers, EN, States, J. Curcumin regulates cell cycle progression in response to BPDE - induced DNA damage. Abstract # 2235. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 120, Number S-2, March 2011
3. Muenyi, CS, States, VA, Masters, JH, Fan, T, Helm, W, States, J. Sodium arsenite and hyperthermia alter expression of XPA, XPC, and MSH2 in response to cisplatin - induced DNA damage and increase accumulation of platinum in ovarian cancer. Abstract # 1991. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 120, Number S-2, March 2011
4. Nglame, N, Feil, ME, Micciche, AF, States, J. Delayed temporal increase of hepatic Hsp70 in ApoE - / - mice with accelerated atherosclerosis induced by in utero arsenic exposure Abstract # 2199. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 120, Number S-2, March 2011
5. States J, Ouyang M, Helm C. Systems approach to identifying potential environmental exposures playing a role in ovarian carcinogenesis [abstract]. In: Proceedings of the 102nd Annual Meeting of the American Association for Cancer Research; 2011 Apr 2-6; Orlando, Florida. Philadelphia (PA): AACR; 2011. Abstract nr 1326.
6. Ngalame, NO, Srivastava, S, States, JC. (2011) Dose Response Effects of *In Utero* Arsenic Exposure on Atherosclerotic Lesion Formation and Inflammation in ApoE-/- Mice. Birth Defects Res Part A 91(5): 358.

Others:

1. Feil ME, Ngalame NNO, States JC. Effects of in utero exposure to arsenic on expression of Hsp70 in livers of ApoE-/- mice at various stages of development. Posters at the Capitol, Frankfort, KY, February 10, 2011.
2. Fugate M, Moore JB, Ellis SR, States JC. Arsenic exposure induces aneuploidy and slows growth in yeast. Posters at the Capitol, Frankfort, KY, February 10, 2011.
3. States VA, Muenyi CS, Masters JH, Helm CW, States JC. Arsenic Alters the Expression of DNA Repair Proteins and Platinum Accumulation in Vivo After Murine Hyperthermic Intraperitoneal Chemotherapy (HIPEC). Posters at the Capitol, Frankfort, KY, February 10, 2011.
4. France C, Trent JO, Taylor BF, States JC. Inhibition Of The Anaphase Promoting Complex: A Potential Novel Mitosis Disrupter For Paclitaxel Resistant Cancers. Research!Louisville, University of Louisville, Louisville, KY, October 10-14, 2011.
5. Leggett CS, Doll MA, States JC, Trent JO, Hein DW. Small molecule Inhibition of Arylamine N-Acetyltransferase 1: A Novel Molecular Target for Cancer Prevention. Research!Louisville, University of Louisville, Louisville, KY, October 10-14, 2011.

6. France C, Trent JO, Taylor BF, States JC. Inhibition Of The Anaphase Promoting Complex: A Potential Novel Mitosis Disrupter For Paclitaxel Resistant Cancers. Brown Cancer Center, 10th Annual Retreat, Louisville, KY, October 28, 2011.

7. Leggett CS, Doll MA, States JC, Trent JO, Hein DW. Small molecule Inhibition of Arylamine N-Acetyltransferase 1: A Novel Molecular Target for Cancer Prevention. Brown Cancer Center, 10th Annual Retreat, Louisville, KY, October 28, 2011.

Pharmacology and Toxicology Grants—Active (Total of 85)

Arteel:

Agency/ Number	Title	Role	PI	Project Period	Direct Awards	Award F&A
RC2 AA019385	Biomarkers for Steatohepatitis	Co-I	McClain	09/30/09-08/31/11	\$1,038,509	\$498,485
R01 AA010154	TNF α and recovery from alcoholic liver injury	Subcon. PI	Diehl (Duke)	09/01/09-12/31/11	\$94,767 (subcon)	\$45,488
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/09-06/30/14	\$1,918,730	\$119,015
R21 ES016367	Priming of liver disease by arsenic exposure	PI	Arteel	05/01/09-09/30/11	\$275,000	\$131,000
P01 AA017103	Alcohol liver disease and alcohol-nutrient interactions	Director, animal core	McClain	09/30/08-08/31/12	\$912,162	\$437,838
P30 ES014443	Center for Environmental Genomics and Integrative Biology	Member	Ramos	06/04/07-03/31/11	n/a	N/a
R01 AA003624	Control of drug and ethanol metabolism	PI	Arteel	05/02/06-04/30/12	\$922,158	\$442,636

Benz:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
DoD US Army W81XWH-10-2-0143	Biomarkers of Exposure and Mechanism of Action of Toxic Industrial Chemicals (TICs)	PI	Benz	9/27/2010 – 9/26/2012	\$558,000

Cai:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
IB080452 (KSTC)	Pharmacodynamics of Bone Targeted Drugs. Part B	PI	Cai	5/09-12/11	No cost extension

R01 EY013813- 07 (NIH)	TNF-alpha in Cell Death & Neuroprotection in Glaucoma	Co-I	Tezel	8/07-7/12	\$1,850,000
R01 HL094419- 01A1 (NIH)	O-GlcNAc Signaling in Heart Failure	Co-I	Jones	8/09-6/13	\$ 1,942,775
DoD US Army W81XWH- 10-2-0143	Biomarkers of Exposure and Mechanism of Action of Toxic Industrial Chemicals (TICs)	Co-I	Benz	9/27/2010 – 9/26/2012	\$558,000

Chen:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
NIH/NIAAA R01 AA015970	S-adenosylchomocysteine in liver disease	CoPI	McClain	9/30/05 – 6/30/11	\$357,500
NIDCR R03 DE019177	A novel murine model of chronic inflammatory periodontitis.	CoPI		5/1/09-4/30/11	\$250,000
R21 ES016367	ARRA Priming of liver disease by arsenic exposure	CoPI		05/01/09- 04/30/11	\$275,000
NIH/NIDDK RO1- DK072032	Podocytes and oxidative stress in diabetic kidney	CoPI	Epstein	9/01/05-7/31/11	\$250,000

Davis:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
DoD/USAM RMC W81XWH- 09-2-0022	Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	Co-PI	Donald Wilkinson	03/15/09 - 03/14/12	\$1,680,000
Kentucky Renewable Energy Consortium	Production of High-Value Cellulase from Tobacco	Co-PI	Eric Berson	10/1/09 - 03/31/11	\$100,476
Owensboro Grain*	Development of Lunasin as a Chemoprevention Agent	PI	Keith Davis	05/01/10 - 11/01/2012	\$ 316,388

U of L Clinical & Translational Science Pilot Grant Program	Development of the Soy Peptide Lunasin as a Chemoprevention Agent	PI	Keith Davis	06/01/2010 to 05/31/2011	\$89,122
Kentucky Soybean Promotion Board	Development of the Soybean- Derived Peptide Lunasin as a Chemoprevention Agent	PI	Keith Davis	07/1/2010 to 06/30/2011	\$68,000
Alpha-1 Foundation	Scalable Plant-Based Expression of Alpha-1 Antitrypsin	PI	Keith Davis	07/1/2010 to 06/30/2011	\$40,000
DoD/USAM RMC W81XWH- 10-2-0082- CLIN 1	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Donald Wilkerson	08/23/2010 to 08/22/2013	\$1,751,000
Kentucky soybean Promotion Board	Continued Development of the Soybean-Derived Peptide Lunasin as an Anticancer Agent	PI	Keith Davis	7/1/2011 to 6/30/2012	\$78,059
DoD/USAM RMC W81XWH- 10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Donald Wilkerson	9/30/2011 to 10/29/2015	\$1,748,000

Gupta:

Agency/ Number	Title	Role	PI	Project Period	Budget Award (Total)
NCI CA- 118114	Breast Cancer Chemoprevention Strategies	PI	Gupta	04/07-02/12	\$1,416,820
NCI CA- 125152	Breast Cancer Chemoprevention Potential of Common Spices	PI	Gupta	07/07-06/12	\$1,406,000
KY Lung Cancer Res. Board	Activation of the Par-4 Extrinsic Pathway for Suppression of Lung Cancer	PI	Gupta	12/10-11/12	\$150,000
US Highbush Blueberry Council	Prevention of Breast Cancer by Blueberry	PI	Gupta	09/11-12/12	\$91,431 (Direct only)

Hein:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
NIEHS (T32-ES011564)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/09 - 06/30/14	\$2,037,745
NCI R25CA011564	University of Louisville Cancer Education Program	PI	Hein	09/14/11-08/31/16	\$1,543,610
NIEHS T35 ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/11 – 03/31/16	\$175,814
NIH (P30-ES014443)	Center for Environmental Genomics and Integrative Biology	Investigator	Ramos	06/04/07 – 03/31/12	\$4,440,000
BC083107 DoD Breast Cancer Research Program	N-acetyltransferase 1 polymorphism and breast cancer risk	Mentor	Millner	09/29/08 – 09/28/11	\$92,442
NIEHS T35 ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/06 – 03/31/11	\$158,355
NCI Contract HHSN261201100383P	Study of Candidate Xenobiotic Metabolism Genes and Renal Cancer	PI	Hein	09/01/11–08/30/12	\$7,913
UofL; Clinical and Translational Pilot Program	Understanding and predicting individual cancer risk	PI	Hein	06/01/10-05/31/11	\$50,000

Hurst:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
DoD US Army W81XWH-10-2-0143	Biomarkers of Exposure and Mechanism of Action of Toxic Industrial Chemicals (TICs)	Co-I	F.W. Benz	9/27/10 – 9/26/12	\$558,000

Kang:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
NHLBI, 2R01 HL063760	Oxidative stress and heart failure by copper restriction	PI	Kang	07/01/07-06/30/12	\$1,480,000

NIAAA R01 AA018844	Adipose tissue lipolysis and alcoholic fatty liver	Co-I	Zhou, Z	09/30/09- 09/30/14	\$1,850,00
NIAAA, P01 AA017103	Alcohol Liver Disease and Alcohol-Nutrient Interaction	member	McClain C	10/01/08- 09/30/12	\$2,500,000

Kidd:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
P20	Innate Immunity Markers as Predictors of Prostate Cancer Outcomes	PI	Kimbro /Kidd	9/1/10-5/31/11	\$126,343
Intramural Clinical & Translational Science Pilot	Innate Immune Response Predictors of Prostate Cancer Outcomes	PI	Kidd	7/1/10-6/30/11	\$49,980
NIH, NIEHS T32- ES011564	UofL Environmental Health Science Training Program	Mentor	Hein	07/1/09-06/30/14	\$1,999,550
R25- CA134283- 01A1	University of Louisville Cancer Education Program	Co-I Co-PD Mentor	Hein	12/1/10-11/30/15	\$1,560,990

Lukashevich:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
NIH/NIAID 7 R01 AI093450-02	Development of New Bivalent Cross-Protective Arenaviral Vaccines	PI		2012-2016	\$565,490/y r (direct)
NIH/NIAID 1R43AI0948 63-02	Novel DNA-Launched Attenuated Vaccine for VEE Virus	PI of sub	P. Pushko	2012-2013	\$129,334
NIH/NIAID R43 AI094700	Trivalent Arenaviral Vaccine Based on Virus-Like Particle Vectors (VLPVs)	PI of sub	P. Pushko	2012	\$41,333
NIH/NIAID 1R03AI0941 59-01A1	A novel DNA-launched live attenuated Chikungunya vaccine	PI of sub	P. Pushko	2012-2013	\$25,000
NIH/NIAID R43AI08892 31	Infectious DNA Vaccine for Yellow Fever	PI of sub	P. Pushko	2012	\$20,000

Matoba:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
UofL CTSPGP Basic Award/2000	A broad-spectrum vaccine against enveloped viruses	PI	Matoba	04/15/10 – 04/14/11	\$49,020 (total direct costs)
NIH NIAID Microbicide Innovation Program V (R21/R33)/1 R21AI08858 5-01	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	06/10/10 – 05/31/12	\$275,000 (total direct costs)
DoD/USAM RMC/W81X WH-09-2- 0022	Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	Subproj ect PI	Donald Wilkers on	03/15/09 – 003/14/12	\$1,680,000 (total direct costs)
DoD/USAM RMC/W81X WH-10-2- 0082- CLIN 1	Plant-Based Expression Systems for New Vaccines and Therapeutics	Subproj ect PI	Donald Wilkers on	08/23/2010 to 08/22/2013	\$1,751,000 (total direct costs)
DoD/USAM RMC/W81X WH-10-2- 0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Subproj ect PI	Donald Wilkers on	9/30/2011 to 10/29/2015	\$1,748,000 (total direct costs)
UofL Office of the Vice President for Research IRIG Research Initiation Grant/50721	Prophylactic potential of plant-produced cholera toxin B subunits in experimental colitis	PI	Matoba	06/01/11 – 05/31/12	\$5,000 (total direct costs)
Brown Cancer Center Helmsley Trust Program /G2142	Immunotherapeutic potential of plant-made CTB against colitis and colon cancer	PI	Matoba	07/18/11 – 07/17/12	\$80,000 (total direct costs)

UofL Office of the VPR IRIG Competitive Enhancement Grant/50730	Development of a recombinant entry/fusion-bispecific inhibitor toward a topical HIV-1 microbicide.	PI	Matoba	10/01/11 – 09/30/12	\$15,000 (total direct costs)
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Myers:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
U-Ca Tobacco-Related Dis. Res. Prog./ 17RT-0138	Measuring prenatal tobacco exposure in newborn blood spots	Co-I	Juan Yang	07/01/08 - 06/30/12	\$506,927

Nerland:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
DoD US Army W81XWH-10-2-0143	Biomarkers of Exposure and Mechanism of Action of Toxic Industrial Chemicals (TICs)	Co-I	Benz	9/27/2010 – 9/26/2012	\$558,000

Palmer:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
National Institutes of Health/NIAID AI 076169	Antiviral lectins as microbicides	PI	Palmer	04/15/2008-03/31/2013	\$1,760,728
National Institutes of Health/NIAID AI 076169S1	Administrative supplement: Antiviral lectins as microbicides	PI	Palmer	07/01/2010-03/31/2012	\$522,561
University of Louisville EVR Clinical and Translational Research Award	Selection of a Novel Pan-Oncogenic HPV Vaccine	PI	Palmer	07/01/2010-12/31/2011	\$200,000
Harry B and Leona M Helmsley Charitable Trust	Pan-oncogenic HPV vaccine	PI	Palmer	08/01/2011-07/31/2012	\$165,000

National Institutes of Health/NIAID R21 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	Co-I	Matoba	06/01/2010-5/31/2012	\$409,750
DoD/USAMRM C W81XWH-09-2-0022	Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	Co-PI	Wilkinson	03/15/09-03/14/12	\$1,680,000
DoD/USAMRM C W81XWH-10-2-0082- CLIN 1	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Wilkinson	08/23/2010-08/22/2013	\$1,751,000
DoD/USAMRM C W81XWH-10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Wilkinson	9/30/2011-10/29/2015	\$1,748,000

Sankar:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
DoD/USAMRM C W81XWH-09-2-0022	Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	Sub-Project PI	Wilkinson	03/15/09 - 03/14/12	\$1,680,000
DoD/USAMRM C W81XWH-10-2-0082- CLIN 1	Plant-Based Expression Systems for New Vaccines & Therapeutics <u>Sub-Project:</u> Ca ²⁺ /Calmodulin dependent protein kinases in early embryonic neuronal development	Sub-Project PI	Wilkinson	08/23/10 – 08/22/13	\$1,751,000 Sub-project: \$389,505
DoD/USAMRM C W81XWH-10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines & Therapeutics <u>Sub-Project:</u> Ca ²⁺ /Calmodulin dependent protein kinases in vaccine-related immunogenicity	Sub-Project PI	Wilkinson	9/30/2011-10/29/2015	\$1,748,000
NIH/1RO1AI07616 9-01A2	Antiviral lectins as microbicides	Co-I	Palmer	04/01/08 – 03/31/12	\$1,760,628 (total costs)
NIH NIAID Microbicide Innovation	Plant-produced Actinohivin as a Candidate HIV	Co-I	Matoba	06/10/10 – 05/31/12	\$275,000 (total direct costs, and

Program V (R21/R33) 1R21AI088585- 01	Microbicide				pending for \$900,000 direct costs for R33 phase)
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Song:

Agency/ Number	Title	Role	PI	Project Period	Budget Award
R01 DA11551- 09	Structure and Function of CB2 Cannabinoid Receptor	PI	Song	5/1/04-4/30/11	\$1,286,104
R01EY13632	Cannabinoid Receptors- Potential Targets for Novel Antiglaucoma Drugs	PI	Song	8/1/09-7/31/12	\$740,000
T32ES11564	UofL Environmental Health Sciences Training Program	Mentor	Hein	7/1/09-6/30/14	\$ 2,037,745

States:

AgencyNumber	Title	Role	PI	Project Period	Budget Award
NIEHS, R21- ES015812-02	Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease	PI	States	04/01/08 – 03/31/11	NCE
UofL SoMRC	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	12/1/2011 – 12/31/2012	\$15,000
NIEHS, P30- ES04443	Center for Environmental Genomics and Integrative Biology	Dep. Director	Ramos	06/04/07 – 03/31/12	\$1,292,306 (Annual)
NIEHS, R01- ES017260-03	Atherogenic Mechanisms Of Arsenic	Co-I	Srivasta va	06/15/09 – 03/31/14	\$329,670 (Annual)
NIEHS, R21- ES016367-02	Priming Of Liver Disease By Arsenic Exposure	Co-I	Arteel	05/01/09 – 04/30/12	\$221,131 (Annual)
NIH-NCI, R25CA134283- 01A2	University Of Louisville Cancer Education Program	Mentor	Hein	09/14/11 – 08/31/16	\$299,335 (Annual)
NIH-NIEHS, T32ES011564	UofL Environmental Health Sciences Training Program,	Mentor	Hein	07/01/09- 06/30/14	\$337,852 (Annual)
NIH-NIEHS, T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/06 – 03/31/16	\$34,334 (Annual)

Pharmacology and Toxicology Grants –Submitted (Total of 50)

Arteel:

Agency/ Number	Title	Role	PI	Project Period	Directs	F&A
NIAAA	Ethanol: Uterine Lipids and Receptivity	Collaborator	Neal	04/01/11-03/31/16	\$300,000	\$150,000
NIAAA	Control of drug and ethanol metabolism	PI	Arteel	04/01/11-03/31/16	\$1,250,000	\$622,083
NIEHS	Influence of diet and GI tract flora on arsenic sensitivity	PI	Arteel	4/1/12-3/31/14	\$300,000	\$150,000
NIAAA	Receptor-mediated effects of ethanol related lung tissue injury/repair	Collaborator	Roman	07/01/11-06/30/16	\$1,250,000	\$622,083
NIAAA	Effect of dietary fat on the hepatotoxicity of environmental arsenic	Collaborator	Watson	04/01/12-03/31/14	\$300,000	\$150,000
NIAAA	Nutrition, gut flora/intestinal dysfunction in alcohol-induced organ injury	Core Leader	McClain	07/01/12-06/30/17	\$6,000,000	\$3,000,000

Cai:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
NIH/R21	Characterization/Novel Vascular System	Co-I	Kang	10/30/10-1/7/13	\$411,250
NIH/ R01 renew	TNF-alpha in Cell Death & Neuroprotection in Glaucoma	Co-I	Tezel	4/1/12-3/31/17	\$1,874,375
NSF/preproposal	Center for Primo-Vascular System	Co-I	Kang	6/1/13-5/30/18	N/A
DOD/ preapplication	Characteristics and Roles of Primo Vascular System in Breast Cancer	Co-I	Kang		N/A
NIH/R01	Oxidative stress in glaucoma	Co-I	Tezel	7/1/12-6/30/17	\$1,875,000
NIH/Pioneer	Primo Vascular System	Co-I	Kang	9/30/12-7/31/17	\$2,500,000
NIH/R21 resubmission	Characterization of a Novel Vascular System by Proteomics and Molecular Imaging	Co-I	Kang	7/1/12-6/30/14	\$397,960

Davis:

Agency/Number	Title	Role	PI	Project Period	Budget Request
Kentucky soybean Promotion Board	Continued Development of the Soybean-Derived Peptide Lunasin as an Anticancer Agent	PI	Keith Davis	7/1/2011 to 6/30/2012	\$78,059
DoD/USAMRMC W81XWH-10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Donald Wilkerson	9/30/2011 to 10/29/2015	\$1,748,000

Gupta:

Agency/Number	Title	Role	PI	Project Period	Budget Request (Direct cost only)
NCI CA-162417	Sustained, Target Delivery for Treatment of Cervical Pathologies	PI	Gupta	04/12-09/13	\$84,546
NCI CA-166306	Prevention & Treatment Strategies of Lung Cancer Recurrence	PI	Gupta	04/12-03/17	\$1,696,283
NCI ES-021608	Role of miRNAs in Hormonal Breast Cancer	PI	Gupta	04/12-03/14	\$275,000
NCI ES-021769	Role of Estrogen in Lung Cancer	PI	Gupta	07/12-06/17	\$1,613,137
NCI CA169311	Inhibition of Breast Cancer by Berry Bioactives	PI	Gupta	07/12-06/17	\$1,745,956
NCI CA-169366	Novel Combination Therapy for Management of Ovarian Cancer	Co-I	Kakar	07/12-06/17	\$1,526,923
NCAAM/NCI AT007428	Inhibition of Lung Cancer by Berry Polyphenols	PI	Gupta	07/12-06/17	\$1,684,076
NCI CA-171327	Prophylactic Treatment of Lung Cancer by Natural Compounds	PI	Gupta	07/12/06/14	\$303,737

Hein:

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIEHS R25ES020701	UofL R25 Environmental Health Sciences Research Program	PI	Hein	05/01/11-04/30/16	\$297,000
NIEHS R03ES020927	NAT2 genetic variants, inhibitors, and genotoxicity	PI	Hein	09/01/11-08/31/13	\$149,584
NCI R25	UofL Program of Distinction in Student Cancer Research	PI	Hein	04/01/12-03/31/17	\$1,620,000

NCI Contract HHSN26120110 0383P	Study of Candidate Xenobiotic Metabolism Genes and Renal Cancer	PI	Hein	09/01/11- 08/30/12	\$7,913
NIH (P30- ES014443)	Center for Environmental Genomics and Integrative Biology	Investig ator	Ramos	04/01/12- 03/31/17	\$8,225,250
DOD/CDMRP Post-doctoral fellowship	Genetic variation in immune components of rat mammary cancer susceptibility	Co- Mentor	Devap atla	09/01/12- 08/31/15	\$419,316

Kidd:

Agency/ Number	Mechanism/Title	Role	PI	Project Period	Total Budget Requested
Department of Defense/ Grant10893442	Prostate Cancer Health Disparity/ Understanding the Role of Genetics in Susceptibility and Disease Progression of Prostate Cancer Among Men of African Ancestry	Qualifie d Collabor ator	Camill e	9/30/12 - 9/30/15	\$600,000
NIMHD Resource-Related Minority Health and Health Disparities Research	U24/Health Disparities Data Coordinating and Analytical Center (DCAC)	Co-PI	Kidd/ Kimbr o	9/1/11- 8/31/16	\$4,859,196
NIMHD/1 R01 MD007073-01	R01/Role of Obesity in Renal Injury	Consulta nt	Pointe r	4/01/12 – 03/31/17	\$1,750,000

Matoba:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
NIH NIAID R21	HIV vaccine potential of a cholera toxin subunit displaying high-mannose glycans	PI	Matob a	07/01/11- 06/30/13	\$275,000 (total direct costs) <i>-Not funded, to be resubmitte d</i>
UofL Office of the Vice President for Research IRIG Research Initiation Grant	Prophylactic potential of plant- produced cholera toxin B subunits in experimental colitis	PI		06/01/11- 05/31/12	\$5,000 <i>-Awarded</i>

Brown Cancer Center Helmsley Trust Program	Immunotherapeutic potential of plant-made CTB against colitis and colon cancer	PI		07/18/11-07/17/12	\$80,000 (total direct costs) -Awarded
UofL Office of the Vice President for Research IRIG Competitive Enhancement Grant	Development of a recombinant entry/fusion-bispecific inhibitor toward a topical HIV-1 microbicide.	PI			\$15,000 -Awarded
NIH NIAID MIP V R33 phase	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI		06/1/12 – 05/31/15	\$900,000 direct costs -Pending

Palmer:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
DoD/UAMRMC W81XWH-10-2-0082-CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Co-PI	Wilkinson	9/30/10-10/29/15	\$1,748,000
Harry B and Leona M Helmsley Charitable Trust	Pan-oncogenic HPV Vaccine	PI	Palmer	8/1/11-7/31/12	\$165,000

Sankar:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
American Cancer Society Research Scholar Award	Anti-Proliferative Kinases in Hematopoietic Stem Cell Homeostasis.	PI	Sankar	07/01/10-06/30/16	\$928,191 Total costs

Song:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
NIH/R01EY1363 2	Cannabinoid Receptors-Potential Targets for Novel Antiglaucoma Drugs	PI	Song	8/1/09-7/31/11 (submitted quarterly report)	\$740,000

NIH/R01 EY022679-01	Cannabinoids and Glaucoma	PI	Song	7/1/12- 6/30/17	\$1,875,000
NIH/1R21DK096 466-01	Searching New Ligands for GPR119	PI	Song	7/1/12- 6/30/14	\$412,500

States:

Agency/ Number	Title	Role	PI	Project Period	Budget Request
KSEF	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	7/1/2011- 6/30/2013	\$100,000
KLCRP	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	12/1/11 – 11/30/13	\$150,000
NIH-NCI 1R01CA170340- 01	Targeting the Anaphase Promoting Complex (PQ18)	PI	States	07/01/12 - 06/30/16	\$1,500,000
NIH-NIEHS 1R01ES020849- 01	Whole Life Arsenic-exposure: Hepatic Dysfunction and Vascular Disease	PI	States	12/1/11 – 11/30/16	\$1,842,889
NIH-NIEHS 1R21	Influence of diet and GI tract flora on arsenic sensitivity	Co-I	Arteel	04/1/12 – 03/31/14	\$449,625
NIH-NIEHS 1R01ES020769- 01	Mitochondrial Dysfunction Induced by Arsenic: Diet Interactions	Co-I	Watson	9/1/11 to 8/31/16	\$1,872,917
NIH-NIEHS P30 ES04443- 05A1	Center for Environmental Genomics and Integrative Biology	Dep. Director	Ramos	4/1/2012 – 3/30/2017	\$8,250,000

INVITED SCIENTIFIC PRESENTATIONS

Arteel:

1. Research seminar, 01/11 "PAI-1 and fibrin metabolism in hepatic inflammation and injury." University of Essen, Essen, Germany
2. Research seminar, 01/11 "PAI-1 and fibrin metabolism in hepatic inflammation and injury." University of Regensburg, Regensburg, Germany
3. Research seminar, 08/11 "New projects and directions." University of Louisville Alcohol Research Center (ULARC) meeting, Louisville, KY.
4. Research seminar, 10/11 "Hepatic regeneration in the chronicity of liver diseases." The Cleveland Clinic, Cleveland, OH.

5. Research seminar, 10/11 "Fibrin and the balance between (hepatic) life and death." RTI International, Research Triangle Park, NC.

Davis:

1. Production of recombinant forms of lunasin with enhanced anticancer activity using transient expression in tobacco. 2011. Fourth International Conference on Plant-Based Vaccines & Antibodies, Porto, Portugal

2. Development of the soy peptide lunasin as an anticancer agent. 2011. Albion College, Albion, Michigan

3. Development of the soy peptide lunasin as an anticancer agent. 2011. Spalding University, Louisville, Kentucky

4. Development of the soy peptide lunasin as an anticancer agent. 2011. Kentucky Wesleyan College, Owensboro, Kentucky

Gupta:

1. Keynote speaker, Nanomedicine Conference, Sullivan University, Louisville, September 2011.

2. 16th World Congress on Advances in Oncology and 10th International Symposium on Molecular Medicine, Greece, October 2011 (Canceled)

Hein:

1. *Pharmacogenetics: Past, Present and Future*. Pulmonary, Critical Care and Sleep Disorders Medicine, Department of Medicine, University of Louisville School of Medicine, Louisville, Kentucky, January 2011.

2. *Genes, Smoking, and Cancer Risk*. Ninth Annual Conference of the International Society for the Prevention of Tobacco Induced Diseases. Vienna, Austria, September 2011.

3. *Pharmacogenomic Investigations in Cryopreserved Human Hepatocytes: Understanding Functional Effects of Single Nucleotide Polymorphisms and Genotype/Phenotype Relationships for Human N-Acetyltransferase 2*. Annual meetings of the North American Hepatocyte Research Association, Atlanta, Georgia, October 2011.

Kang:

1. Oct 15, 2011, Invited Speaker, The 22nd Great Wall International Congress of Cardiology, Symposium "Cardiovascular Translational Medicine and Application" Beijing, China, Oct 13-16. "Advances in heart failure and regeneration"

2. Sept 20, 2011, Invited Speaker, International Conference of Trace Elements in Men and Animals (TEMA)-14, Symposium “Trace Elements on cardiovascular Function and Disease” Enshi, China, Sept 19-24, 2011. “Copper in cardiovascular pathogenesis and regeneration”
3. Aug 14, 2011, Invited Speaker, China Heart Congress “Cell Transplantation and Cardiac Regeneration: From Bench to Bedside” Beijing, China, Aug 11-14, 2011. “Mechanistic insights into copper-integrated bioactive materials for the therapy for myocardial infarction.”
4. Apr 13, 2011, Invited Speaker, American Society for Investigative Pathology Annual Meeting at Experimental Biology symposium “Mechanisms of cellular stress in disease” Washington DC, Apr 9-13, 2011. “The role of metallothionein on mitochondrial oxidative stress in diabetic cardiomyopathy”

Matoba:

1. “Microbicide development based on a mannose cluster-specific lectin” Kentucky BioProcessing, LLC, KY, August 23, 2011.

Myers:

1. “Biomarkers of Environmental Pollution: Polycyclic Aromatic Hydrocarbons”, University of Cairo, Cairo, Egypt, January, 2011
2. “Biomarkers of Environmental Pollution to Cancer”, Fayoum University, Fayoum, Egypt, January, 2011

Sankar:

1. ”Tale of Two Kinases: CaMKs II and IV Feud over Leukemia Cell Proliferation.” *The Poa Pratensis Molecular Targets Program and Brown Cancer Center*; University of Louisville, KY, March 2011

States:

1. “Hepatic gene expression changes associated with in utero arsenic exposure accelerated atherosclerosis in the ApoE-Knockout mouse”, Department of Molecular and Cellular Craniofacial Biology, University of Louisville, Louisville, KY (9/20/2011)
2. “Translating experimental findings to arsenic exposure induced human health problems”, 7th and Final PRAMA Workshop on Arsenic Contamination in Ground Water: Exposure Assessment, Health Effects and Mitigation, Indian Institute of Chemical Biology, Kolkata, India, Nov 18-19, 2011
3. “Arsenic-Induced Keratosis and p53 Mutation”, All India Congress of Cytology and Genetics, Magadh University, Bodhgaya, India, November 21-23, 2011

Song:

1. "CB2 polymorphism and cannabinoid-induced immune suppression.", Department of Immunology, School of Basic Medical Sciences, Peking University Health Science Center, Beijing, China, October, 2011

DEPARTMENTAL COURSES

- Medical Pharmacology course to second year medical students. Dr. Mike Williams served as course director.
- Pharmacology and Dental Therapeutics course to dental students. Dr. Len Waite served as course director.
- Pharmacology course to second year students in the Dental Hygiene Program. Dr. Steve Myers served as course director.
- Basic Pharmacology course for undergraduate students. Dr. Leonard Waite served as course director.
- The Department team taught several courses for graduate students. The individual courses and course directors included:
 - PhTx 660 – Principles of Drug and Chemical Action (Dr. Benz)
 - PhTx 606 – Pharmacology Seminar (Dr. Nerland)
 - PhTx 661 – Molecular Toxicology (Drs. McGregor and Prough)
 - PhTx 625 – Scientific Writing (Dr. Gavin Arteel)
 - PhTx 655 – Neuropharmacology (Drs. Rowell and Song)
 - PhTx 656 – Cardiovascular and Renal Pharmacology (Drs. Benz and Williams)
 - PhTx 657 – Endocrine and Metabolic Pharmacology (Dr. Arteel)
 - PhTx 658 – Selective Toxicity and Chemotherapy (Drs. Hurst and Nerland)
 - PhTx 672 – Research Methods in Pharmacology & Toxicology I (Drs. Song and States)
 - PhTx 673 – Research Methods in Pharmacology & Toxicology II (Drs. Song and States)
 - PhTx 674 – Research Methods in Pharmacology & Toxicology III (Drs. Song and States)
 - PhTx 675 – Research Methods in Pharmacology & Toxicology IV (Drs. Song and States)

KC HUANG MEMORIAL LECTURE

"Xenobiotic metabolising enzymes from a comparative genomic perspective" was presented September 2 by Dr. Sotiria Boukouvala, Senior Lecturer of Molecular Genetics, Department of Molecular Biology and Genetics, Democritus University of Thrace, Greece.

STANDING COMMITTEES– 2011

Graduate Student Affairs and Curriculum Committee

Dr. Peter Rowell (Chair)
Dr. Glenn McGregor (2012)
Dr. Uma Sankar (2011)
Dr. Gavin Arteel (2010)
Clarisse Muenyi

Graduate Student Admissions and Recruitment Committee

Dr. Chris States (Chair)
Dr. Steve Myers (2012)
Dr. La Creis Kidd (2011)
Dr. Paul Epstein (2010)

SIBUP/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Joe Song (2012)
Dr. Don Nerland (2011)
Dr. Harrell Hurst (2010)

Teaching Evaluation Committee

Dr. Mike Williams (Chair)
Dr. Harrell Hurst (2012)
Dr. Len Waite (2011)
Dr. Fred Benz (2010)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Gavin Arteel (2012)
Dr. Fred Benz (2011)
Dr. Steve Myers (2010)

Core Laboratories/Research Committee

Dr. Gavin Arteel (Chair)
Dr. Jian Cai (2012)
Dr. Glenn McGregor (2011)
Dr. Theresa Chen (2010)

Events Committee

Dr. Len Waite (Chair)
Dr. Glenn McGregor (2012)
Dr. Nobuyuki Matoba (2011)
Dr. LaCreis Kidd (2010)
Graduate Student Representative

Information Technology Committee

Dr. Gavin Arteel
Dr. Fred Benz
Dr Harrell Hurst

Faculty Search Committee

Dr. David Hein
Dr. La Creis Kidd
Dr. William Pierce, Jr.
Dr. Chris States

Department Graduates

	Name	Degree	Mentor	Thesis/Dissertation Title
228	Pritesh Kumar	M.S.	Zhao-Hui (Joe) Song, Ph.D.	Searching for novel ligands for cannabinoid and related receptors
227	Benjamin M. Risner	M.S.	Richard Goldstein, M.D., Ph.D.	Pharmacists as mid-level healthcare providers and the clinical results of a pharmacist-led diabetes disease management program
226	Stephanie A. Mathews	Ph.D.	Shirish Barve, Ph.D.	Role of HDACs and SAM in interferon-alpha signaling and epigenetic regulation of anti-HCV gene expression
225	Erica N. Rogers	Ph.D.	J. Christopher States, Ph.D.	The role of curcumin in response to BPDE-induced DNA damage in human lung epithelial cells

224	Katherine S. Bourcy	Ph.D.	Y. James Kang, Ph.D.	Mechanistic insights into copper-induced regression of heart hypertrophy
223	Ntube Nini Olive Ngalame	Ph.D.	J. Christopher States, Ph.D.	Arsenic-induced developmental changes in the liver and adult cardiovascular disease
222	Shelia A. Arnold	Ph.D.	Theo Hagg, M.D., Ph.D.	Roles of 5HT1A receptor in CNS neurogenesis and ADAM21 in spinal cord injury
221	Clarisse S. Muenyi	Ph.D.	J. Christopher States, Ph.D.	Mitigating cisplatin resistance in ovarian cancer
220	Lori M. Millner	Ph.D.	David W. Hein, Ph.D.	Functional analysis of N-acetyltransferase (<i>NAT1*14B</i> and <i>NAT1*10</i>) in complete NATb and NATa mRNA
219	Pei-Hsin Cheng	M.S.	Kelly M. McMasters, M.D., Ph.D.	Adenovirus-induced cyclin E activates CDK2 for virus replication
218	Lindsey Jay Stallons	Ph.D.	J. Christopher States, Ph.D.	DNA polymerase iota promotes G2/M checkpoint activation and genetic stability after UV-induced DNA damage
217	Shyam Sunder Bansal	Ph.D.	Ramesh C. Gupta, Ph.D.	Development and evaluation of polymeric implants of curcumin for enhanced chemopreventive activity
216	Christopher L. Barton	M.S.	Kenneth E. Palmer, Ph.D.	Profile of systemic treatment with the antiviral lectin griffithsin in guinea pigs
215	Pengxiao Cao	Ph.D.	Ramesh C. Gupta, Ph.D.	Prevention and treatment of lung cancer by green tea polyphenols
214	Gilandra K. Russell	Ph.D.	Ramesh C. Gupta, Ph.D.	Sustained systemic delivery of chemopreventive agents in inhibiting dibenzo[<i>a,l</i>]pyrene-induced DNA adducts in the lungs of A/J mice
213	Jianxun Wang	Ph.D.	Paul N. Epstein, Ph.D.	Cardiac abnormalities after transaortic constriction are worsened by changing glucose metabolism and benefited by repair of mitochondrial DNA
212	Robin H. Schmidt	M.S.	Gavin E. Arteel, Ph.D.	Sulforaphane prevents acetaminophen-induced hepatic injury in mice

2011 PhD Graduates



Shelia A. Arnold, PhD



Shyam Sunder Bansal, PhD



Lori M. Millner, PhD



Clarisse S. Muenyi, PhD



Ntube Nini Olive Ngalame, PhD



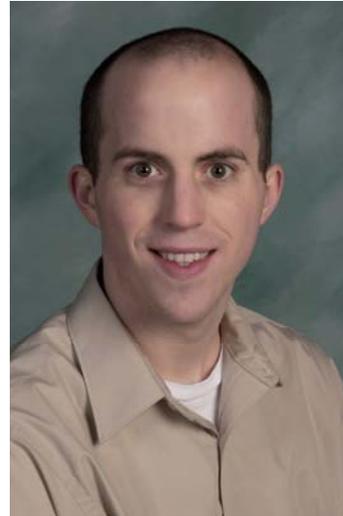
Erica N. Rogers, PhD



Gilandra K. Russell, PhD



Katherine S. Bourcy, PhD



Lindsey Jay Stallons, PhD



Pengxiao Cao, PhD



Jianxun Wang, PhD

2011 MS Graduates



Christopher L. Barton



Benjamin M. Risner



Pei-Hsin (Penny) Cheng



Robin H. Schmidt



Pritish Kumar