

UNIVERSITY OF
LOUISVILLE[®]

SCHOOL OF MEDICINE

*Department of
Pharmacology & Toxicology*

2010 Annual Report



UNIVERSITY OF
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Department of Pharmacology and Toxicology-2010

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.

NEW FACULTY APPOINTMENTS (Joint appointments)



Brad Keller, MD

Professor of Pediatrics and Vice Chair of Pediatrics

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



Jesse Roman, MD

Professor and Chair of Medicine

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

NEW FACULTY APPOINTMENTS (Associate appointments)



Matthew C. Cave, MD

Assistant Professor of Medicine (Division of Gastroenterology, Hepatology, and Nutrition)

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.



Ben Jenson, MD

Professor and Senior Scientist, James Graham Brown Cancer Center

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

FACULTY PROMOTIONS



Gavin E. Arteel, Ph.D. was promoted to professor.



Hong Ye, Ph.D. was promoted to associate professor of Medicine (Division of Hematology/Oncology) and Pharmacology and Toxicology with tenure.

FACULTY HONORS

- **Dr. Gavin Arteel** was appointed as Distinguished University Scholar.
- **Dr. Ramesh Gupta** was reappointed as Distinguished University Scholar.
- **Dr. David Hein** was elected to the Academy of Pharmacology Educators, American Society for Pharmacology and Experimental Therapeutics.
- **Dr. Nobuyuki Matoba** received a Scholarship Award at the 2010 International Microbicide Conference (Pittsburgh, PA).
- **Dr. Zhao-hui (Joe) Song** was reappointed as University Scholar.
- **Dr. Walter (Mike) Williams** received the Golden Apple Award from the medical students and was nominated by the School of Medicine for the Board of Trustees Alumni Award.

- **Dr. John Eaton** received the President's Outstanding Scholarship, Research, and Creative Activity Award.
- **Dr. Donald Miller** received the President's Faculty Award in Service

GRADUATE STUDENT HONORS

- **Nicole Lavender** was selected as the KC Huang Outstanding Graduate Student.
- **Robin Schmidt** received first place in Best Platform Award at the annual OVSOT meeting
- **Akshata Moghe** received the Battelle Research Award at the annual OVSOT meeting
- **Keegan Bauldauf** received a third place master's student award at Research!Louisville.
- **Erica Rogers** received an outstanding leadership award from the Society of Toxicology
- **Clarisse Muenyi** received a third place graduate student award in the Metals Specialty Section of the Society of Toxicology
- **Lori Millner** and **Carmine Leggett** received CGeMM travel awards to for oral presentations at the 5th Interntional Workshop in Arylamine N-acetyltransferases held in Paris.
- **Stephanie Mathews** received a third place award at Research!Louisville

POSTDOCTORAL HONORS

- Juliane Arteel was selected for oral student presentation, JSH single topics conference, Tokyo, Japan.

CURRICULAR AND POLICY ACTIONS

- Curricular requirements for the two Masters tracks (academic MS and research MS) were discussed and a consensus was reached that the didactic requirements should be the same for all MS students.
- Students in the Pharmacology and Toxicology doctoral program, in consultation with their mentor and dissertation committee, may take or be required to take additional elective classes beyond the core course requirements in order to better prepare them for their doctoral research. Doctoral students generally take one to three elective courses.

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)

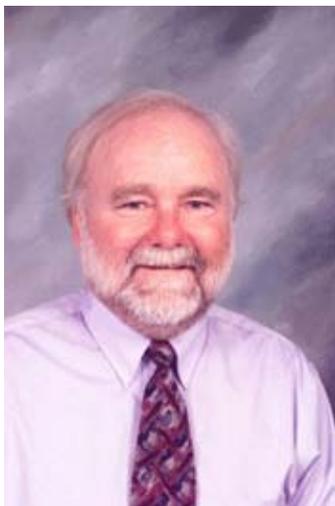
Research Interests: Development and identification of intermediate biomarkers to investigate etiology and prevention of human cancers resulting from both environmental and endogenous exposures.



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.

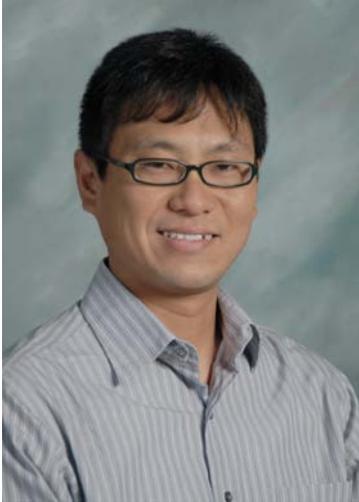


La Creis R. Kidd, PhD, MPH

Assistant 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.



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.

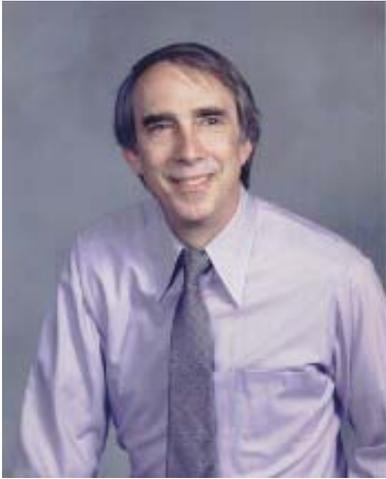


William M. Pierce Jr, PhD

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.

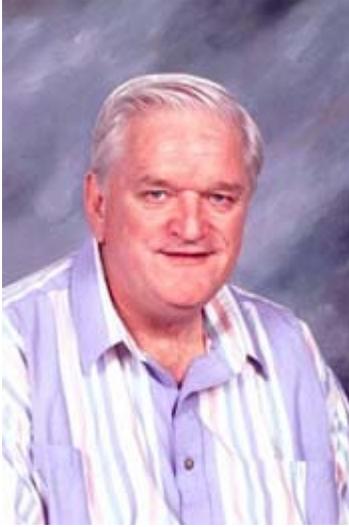


J. Christopher States, PhD

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).

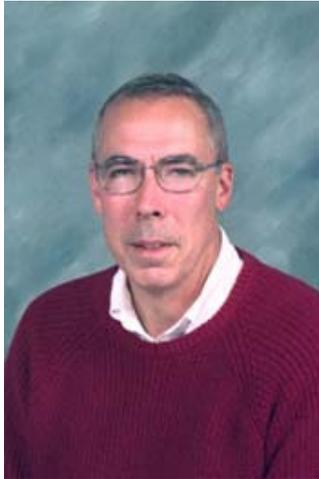
Research Interests: Novel regulators of cancer cell metabolism; identification of emerging viruses and the development of immune-based therapies against widely metastatic cancers.



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.

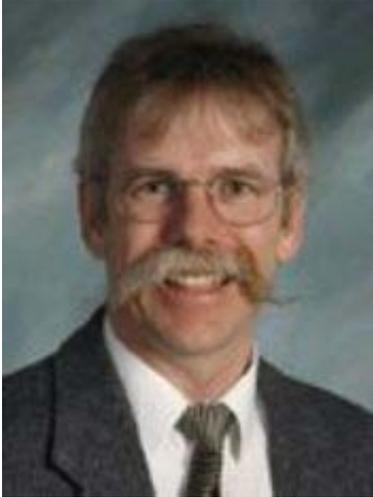


Evelyne Gozal, PhD

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)

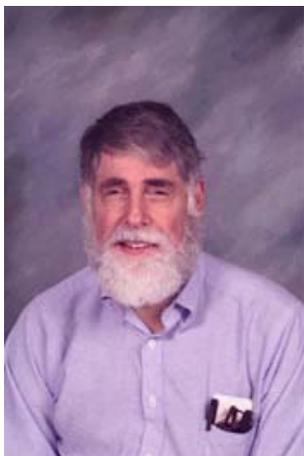
Research Interests: Development, evaluation, and kinetic studies of radiopharmaceuticals; the use of molecular imaging for biomedical research.



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.

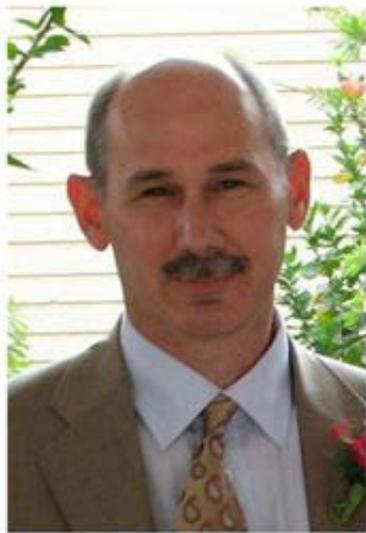


Wolfgang Zacharias, PhD

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



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



C. William Helm, MD

Associate Professor of Obstetrics, Gynecology and Women's Health

MB, BChir, Cambridge University (1977)

Research Interests: Ovarian cancer



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.



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.

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).

Faculty with Adjunct Appointments

- **Hayes, A. Wallace**, Adjunct Professor of Pharmacology and Toxicology; Ph.D., Auburn University (1967).
- **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
McClain, Marion	Research Facilitator
Rubin-Teitel, Heddy	Administrative Assistant
Tatum, Shiloh	Unit Business Manager

Graduate Students

Name

Adcock, Scott
Al-Maqtari, Tareq
Arnold, Shelia
Bagshaw, Isabelle
Baldauf, Keegan
Bansal, Shyam Sunder
Barton, Chris
Belshoff, Alex
Bourcy, Katie
Cao, Pengxiao
Chambers, Elana
Chen, Wei Yang
Cheng, Pei-Hsin (Penny)
Donde, Hridgandh
Eno, Colins
Fioret, Daniel
Hallgren, Justin
Kamga, Christelle
Kumar, Pritesh
Lasnik, Amanda
Lavender, Nicole
Leggett, Carmine
Massey, Veronica
Mathews, Stephanie
McAllister, Ryan
Millner, Lori
Moghe, Akshata
Moktar, Afsoon

Muenyi, Clarisse
Ngalame Ntube, Nini Olive
Patil, Madhuvanti
Philipose, John
Risner, Benjamin
Rogers, Erica
Russell, Gilandra
Schmidt, Robin
Stallons, L Jay
Vicary, Glenn
Wahlang, Banrida
Wu, Huihui
Yang, Lu
Zajack, Matthew

New Graduate Students

Ryan McAllister
Wei-Yang (Jeremy) Chen
Hridgandh Donde
Daniel Fioret
Tareq Al-Maqtari
Veronica Massey
Glenn Vicary
Banrida Wahlang

Postdoctoral Fellows

Hina Amanullah
Farrukh Aqil
Juliane Arteel
Xiang Ding
Calvin Kouokam
Akhilesh Kumar
Radha Munagala
Zhuanhong Qiao
Li Zhan

Graduates

Name	Degree	Mentor	Thesis/Dissertation Title
Nicole A. Lavender	Ph.D.	La Creis R. Kidd, Ph.D.	The role of genetic and environmental oxidative stress factors in prostate cancer

Lu Yang	Ph.D.	Paul N. Epstein, Ph.D.	Adriamycin nephrotoxicity is reduced by metallothionein over-expression and kidney gene expression is modified by diabetes in the OVE26 diabetic model
Afsoon Moktar	Ph.D.	Ramesh C. Gupta, Ph.D.	Cigarette smoke, DNA damage and repair in human cervical and vaginal cells <i>in vitro</i> and <i>ex vivo</i>
Carmine S. Leggett	M.S.	David W. Hein, Ph.D.	Effects of CYP1A2, NAT1, and NAT2 genetic variants in nucleotide excision repair-deficient human fibroblasts: Implications for toxicological risk from environmental arylamines
Matthew R. Zajack	M.S.	J. Christopher States, Ph.D.	Arsenic in drinking water causes gene expression changes in the liver related to inflammation and metabolic dysfunction and accelerates atherosclerosis in APOE-/- mice
Akshata Moghe	M.S.	Shirish Barve, Ph.D.	Curcumin reactivates epigenetically silenced tumor suppressor gene tissue factor pathway inhibitor-2 in hepatocellular carcinoma cells
Madhuvanti Patil	M.S.	Shirish Barve, Ph.D.	Role of the transmethylation pathway in the regulation of cell death in T leukemic cells
Colins O. Eno	M.S.	Chi Li, Ph.D.	Mechanism of regulation of apoptosis by the BCL-2 proteins BCL-XL and BCL-XS
Christelle K. Kamga	Ph.D.	Yang Wang, M.D., Ph.D.	GSH transport through the dicarboxylate carrier: A key component in UCP4-mediated antioxidants effects in neuronal-like PC12 cells
John Philipose	Ph.D.	Michele Pisano, Ph.D.	Craniofacial anomalies: sensitivity of the neural crest to altered folate metabolism
Aisha Isabelle Bagshaw	M.S.	Aruni Bhatnagar, Ph.D.	Potential cardiotoxic impact of aldehydes in the progression of atherosclerosis

PUBLICATIONS

1. Aiyer HS, Gupta RC. Berries and ellagic acid prevent estrogen-induced mammary tumorigenesis by modulating enzymes of estrogen metabolism. *Cancer Prev Res (Phila)* 2010 Jun;3(6):727-737.
2. Aluise CD, Robinson RA, Beckett TL, Murphy MP, Cai J, Pierce WM, Butterfield DA. Preclinical Alzheimer disease: brain oxidative stress, Abeta peptide and proteomics. *Neurobiol Dis* 2010 Aug;39(2):221-228.
3. Banerjee M, Banerjee N, Ghosh P, Das JK, Basu S, Sarkar AK, States JC, Giri AK. Evaluation of the serum catalase and myeloperoxidase activities in chronic arsenic-exposed individuals and concomitant cytogenetic damage. *Toxicol Appl Pharmacol* 2010 Nov 15;249(1):47-54.

4. Beier JI, Arteel GE. Ethanol-induced hepatotoxicity. In: Roth R, Ganey P, eds. *Comprehensive Toxicology*. 2 ed. Oxford: Academic Press, 2010. 421-435.
5. Beier JI and McClain CJ. Mechanisms and cell signaling in alcoholic liver disease. (review) *Biol Chem*. 2010, 391(11):1249-1264.
6. Benford ML, VanCleave TT, Lavender NA, Kittles RA, Kidd LR. 8q24 sequence variants in relation to prostate cancer risk among men of African descent: a case-control study. *BMC Cancer* 2010;10:334.
7. Cao P, Cai J, Gupta RC. Effect of green tea catechins and hydrolyzable tannins on benzo[a]pyrene-induced DNA adducts and structure-activity relationship. *Chem Res Toxicol* 2010 Apr 19;23(4):771-777.
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1. Benz, F.W., Cai, J., Nerland, D.E., Hurst, H.E. and Pierce, W.M. Second order rate constants for the in vitro reaction of the toxic industrial chemical acrylonitrile with the most reactive sites in human blood. Abstract #1848, 49th Annual Meeting, Society of Toxicology, Salt Lake City, UT, March 7-11, 2010 (*Toxicological Sciences* 114: No. 1-Supplement, 393).

2. Cai, J., Benz, F.W., Nerland, D.E., Hurst, H.E. and Pierce, W.M. Human serum albumin Cys34 adducts as a biomarker for exposure to unknown reactive chemicals, Abstract #2724, 58th ASMS Conference on Mass Spectrometry and Allied Topics, Salt Lake City, UT, May 23-27, 2010.

3. Benz, F.W., Cai, J., Nerland, D.E., Hurst, H.E. and Pierce, W.M. Acrylonitrile, adduct, mass spectrometry, biomarker, toxic industrial chemicals. Abstract #P101-014, XII International Congress of Toxicology, Barcelona, Spain, 19-23 July 2010 (*Toxicology Letters* 196S: S41).

Cai:

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2. Tezel G, Yang X, Luo C, Cai J, Pierce WM, and Kuehn MH. Proteomic analysis of human retina: Ocular hypertension versus glaucoma. *ARVO 2010 Annual Meeting*, Fort Lauderdale, FL, May 2-6, 2010.
3. Wilburn DB, Bowen KE, Gregg RG, Cai J, Feldhoff PW, Houck LD, and Feldhoff RC. An inversion in molecular paradigm: using conserved UTRs to characterize a hypervariable family of vertebrate courtship pheromones. *Evolution 2010*, Portland, OR, Jun 25-29, 2010.
4. Benz FW, Cai J, Nerland DE, Hurst HE, and Pierce WM. Acrylonitrile, adduct, mass spectrometry, biomarker, toxic industrial chemicals. *XII International Congress of Toxicology*, Barcelona, Spain, Jul 19-23, 2010 (*Toxicology Letters* 196S: S41).

Chen:

1. Song, M., et al. Palmitate induced Interleukin-8 Production from Hepatic Stellate Cells is Toll-Like Receptor 4 Dependent. *Digestive Disease Week 2010*. (Control ID: 783426).
2. Song M et al., High fructose feeding induces copper deficiency: A novel mechanism for obesity related fatty liver. *Hepatology* 52 (4 Suppl), 1058A, 2010.
3. Song, M, Chen T, Zhang J, McClain C. Copper deficiency exacerbates bile duct ligation-induced liver fibrosis in rats. *Research! Louisville* p.21, 2010.
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Gupta:

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2. Bansal SS, Kausar H, Aqil F, Vadhanam MV & Gupta RC. Polymeric Implants Enhance Bioavailability of Curcumin by Providing a Continuous ("24/7") Delivery System. *Proc. Am. Assoc. Cancer Res.* 51: 1880, 2010.
3. Aqil F, Jeyabalan J, Gupta A, Sharma RJ, Sidana J, Singh IP & Gupta RC. Chemopreventive potential of 'jamun' (Indian blackberry) against estrogen-mediated mammary carcinogenesis. *Proc. Am. Assoc. Cancer Res.* 51: 5688, 2010.

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6. Kausar H, Jeyabalan J, Aqil F, Chabba D, Sidana J, Singh IP & Gupta RC. Synergistic anti-cancer activities of berry anthocyanidins on human lung cancer cells. *Proc. Am. Assoc. Cancer Res.* 51: 1884, 2010.
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8. Jeyabalan J, Cao P, Vadhanam MV & Gupta RC. Novel polymeric implants for low-dose, continuous exposure to carcinogens. *Proc. Am. Assoc. Cancer Res.* 51: 3457, 2010.
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17. Gupta RC, Bansal S, Aqil F, Cao P, Jeyabalan J, Russell G, Kausar H, Munagala R, Ravoori S & Vadhanam M. Continuous ("24/7") systemic delivery of chemopreventive agents by

polymeric implants – a novel concept. Abstract, Internatl. Biennial Conference on New Developments in Drug Discovery from Natural Products and Traditional Medicines, November 20-24, 2010.

Hein:

1. Millner, L.M., Doll, M.A., States, J.C. and Hein, D.W.: Differences in arylamine-induced mutagenesis associated with N-acetyltransferase 1 alternative mRNA isoforms. *Proceedings of the Twelfth Annual Midwest DNA Repair Symposium*, p. 67, Louisville, Kentucky, May 2010.
2. Garcia-Closas, M., Hein, D.W., Silverman, D., Malats, N., Yeager, M., Jacobs, K., Doll, M.A., Figueroa, J.D., Baris, D., Schwenn, M., Kogevinas, M., Johnson, A., Chatterjee, N., Moore, L.E., Moeller, T., Real, F.X., Chanock, S. and Rothman, N.: A single nucleotide polymorphism tags variation in the arylamine N-acetyltransferase 2 phenotype in populations of European background. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 11, Paris, France, September 2010.
3. Hein, D.W., Boukouvala, S., Grant, D., Minchin, R.F. and Sim, E.: Current nomenclature of human arylamine N-acetyltransferases. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 17, Paris, France, September 2010.
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5. Hein, D.W. and Doll, M.A.: Associations between N-acetyltransferase 2 (NAT2) single nucleotide polymorphisms (SNPs) and haplotypes with catalytic activity in cryopreserved human hepatocytes: Recommendations for NAT2 genotyping. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 21, Paris, France, September 2010.
6. Doll, M.A., Bendaly, J., Millner, L.M. and Hein, D.W.: Difference between human slow N-acetyltransferase-2 alleles in levels of 4-aminobiphenyl-induced DNA adducts and mutagenesis. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 24, Paris, France, September 2010.
7. Leggett, C.S., Barker, D.F., Doll, M.A., Millner, L.M., States, J.C., and Hein, D.W.: Construction and functional characterization of nucleotide excision repair-deficient SV40-transformed human fibroblasts expressing human CYP1A2 and NAT2 genetic variants. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 25, Paris, France, September 2010.
8. 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 Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 33, Paris, France, September 2010.
9. Millner, L.M., Doll, M.A., States, J.C., and Hein, D.W.: Functional effects of NAT1*14 polymorphism in a Natb mRNA construct. *Proceedings of the Fifth International Workshop on the Arylamine N-acetyltransferases*, p. 55, Paris, France, September 2010.

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11. Leggett, C.S., Barker, D.F., Doll, M.A, Millner, L.M., States, J.C., and Hein, D.W.: Functional Effects of CYP1A2, NAT1, and NAT2 genetic variants in nucleotide excision repair-deficient human fibroblasts: Implications for toxicological risk from environmental arylamines. *Proceedings of Research!Louisville*, GRM-12, Louisville, Kentucky, October 2010.
12. Millner, L., Doll, M.A., States, J.C., and Hein, D.W.: Functional effects of NAT1*14B polymorphism in a NATb mRNA construct. *Proceedings of Research!Louisville*, GRD-46, Louisville, Kentucky, October 2010.
13. Doll, M.A., Zang, Y., Moeller, T., and Hein, D.W.: Codominant expression of N-acetylation and O-acetylation activities catalyzed by N-acetyltransferase 2 in human hepatocytes. *Proceedings of Research!Louisville*, RS-99, Louisville, Kentucky, October 2010.
14. Zhu, Y., States, J.C., Wang, Y., and Hein, D.W.: Functional effects of genetic polymorphisms in the N-acetyltransferase 1 coding and 3' untranslated regions. *Proceedings of Research!Louisville*, RA-94, Louisville, Kentucky, October 2010.
15. Hein, D.W. and Doll, M.A.: Effects of N-acetyltransferase 2 (NAT2) single nucleotide polymorphisms (SNPs) and haplotypes towards catalytic N-acetyltransferase activity in cryopreserved human hepatocytes: Recommendations for NAT2 genotyping. *Proceedings of Research!Louisville*, F-15, Louisville, Kentucky, October 2010.
16. Roach, D., Doll, M.A., Li, D. and Hein, D.W.: Gene environmental interactions and pancreatic cancer risk. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.
17. Leggett, C.S., Barker, D.F., Doll, M.A, Millner, L.M., States, J.C., and Hein, D.W.: Functional Effects of CYP1A2, NAT1, and NAT2 genetic variants in nucleotide excision repair-deficient human fibroblasts: Implications for toxicological risk from environmental arylamines. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.
18. Millner, L., Doll, M.A., States, J.C., and Hein, D.W.: Functional effects of NAT1*14B polymorphism in a NATb mRNA construct. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.
19. Doll, M.A., Zang, Y., Moeller, T., and Hein, D.W.: Codominant expression of N-acetylation and O-acetylation activities catalyzed by N-acetyltransferase 2 in human hepatocytes. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.
20. Zhu, Y., States, J.C., Wang, Y., and Hein, D.W.: Functional effects of genetic polymorphisms in the N-acetyltransferase 1 coding and 3' untranslated regions. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.

21. Hein, D.W. and Doll, M.A.: Effects of N-acetyltransferase 2 (NAT2) single nucleotide polymorphisms (SNPs) and haplotypes towards catalytic N-acetyltransferase activity in cryopreserved human hepatocytes: Recommendations for NAT2 genotyping. *Proceedings of the 9th Annual James Graham Brown Cancer Center Retreat*, Louisville, Kentucky, November 2010.

Hurst:

1. Benz, F.W., Cai, J., Nerland, D.E., Hurst, H.E. and Pierce, W.M., Second order rate constants for the in vitro reaction of the toxic industrial chemical acrylonitrile with the most reactive sites in human blood. Abstract #1848, *49th Annual Meeting, Society of Toxicology*, Salt Lake City, UT, March 7-11, 2010 (*Toxicological Sciences* 114: No. 1-Supplement, 393).

2. Gupta, R.C., Vadhanam, M.V., Hurst, H.E., Meireles, S.I., Clapper, M., and Gairola, C.G. Modulation of estrogen metabolism by berry phytochemicals and its potential role in cigarette smoke-mediated lung carcinogenesis, UK-UL Lung Cancer Retreat, University of Kentucky College of Pharmacy, Lexington, KY, March 27, 2010.

3. Cai, J., Benz, F.W., Nerland, D.E., Hurst, H.E. and Pierce, W.M., Human serum albumin Cys34 adducts as a biomarker for exposure to unknown reactive chemicals, Abstract #2724, *58th ASMS Conference on Mass Spectrometry and Allied Topics*, Salt Lake City, UT, May 23-27, 2010.

4. F. Benz, F, J. Cai, D. Nerland, H. Hurst and W. Pierce. Acrylonitrile, adduct, mass spectrometry, biomarker, toxic industrial chemicals. Abstract #P101-014, *XII International Congress of Toxicology*, Barcelona, Spain, 19-23 July 2010 (*Toxicology Letters* 196S: S41).

Kang:

1. Kang YJ. Copper regulation of VEGF signaling pathways in hypertrophic cardiomyocytes. The International Copper Meeting 2010, Alghero, Sardinia, Italy, Oct 16-21, 2010.

2. Kang YJ. Copper promotion of myocardial regeneration. The 6th Annual Meeting of Regenerative Medicine of China, SuZhou, China, Sept 17-18, 2010.

3. Kang YJ. Copper promotes vascularization and regeneration in ischemic myocardium. The International Anatomical Sciences and Cell Biology Meeting, Singapore, May 26-29, 2010.

4. Kang YJ. Copper integrated bioengineered material in myocardial regeneration. The China National Biomaterial Conference, Chengdu, China, April 15-18, 2010.

5. Zhan L, Yao Y, Xue W, Feng W, Bourcy K, Zhou Z, Eaton JW, and Kang YJ. Recovery of cytochrome c oxidase activity is required for copper supplementation-induced regression of hypertrophic cardiomyopathy in mice. *Proceedings of the 49th Annual Meeting of the Society of Toxicology*, Salt Lake City, March 7-11, 2010.

6. Bourcy K, Feng W, and Kang YJ. Association of vascular endothelial growth factor receptor-1 with cGMP-dependent protein kinase-1 is involved in copper-induced regression of human cardiac myocyte hypertrophy in cultures. *Proceedings of the 49th Annual Meeting of the Society of Toxicology*, Salt Lake City, March 7-11, 2010.

Kidd:

FIRST/CORRESPONDING AUTHOR NATIONAL POSTERS

1. Kimbro, K.S., Oprea, G.M., Burns, B.G., VanCleave, T.T., Tang, W., Bouzyk, M., Kidd, L.R. Innate Immunity-related Sequence Variants as Predictors of Breast Cancer Risk among Women of African Descent, American Society of Clinical Oncology, Chicago, Illinois, June 4, 2010.
2. Kidd, L.R., VanCleave, T.T., Tang, W., Bouzyk, M., Lavender, N.A., Kimbro, K.S. Innate Immunity-related Sequence Variants as Predictors of Prostate Cancer Risk among Men of African Descent. 101th Annual American Association for Cancer Research Conference, Washington, DC, April 18, 2010.
3. Lavender, N.A., Kimbro, K.S., Tang, W., Vancleave, T.T., Bouzyk, M., Kidd, L.R. Oxidative Stress Response Sequence Variants as Predictors of Prostate Cancer Risk and Aggressive Disease among men of European and African Descent. 101th Annual American Association for Cancer Research Conference, Washington, DC, April 18, 2010.

FIRST/CORRESPONDING AUTHOR LOCAL POSTERS

1. Lavender, N., Komolafe, O.O., Brock, G., Moore, J.H., VanCleave, T., Srivastava, D.S., Benford, M.L., States, J.C., Kittles, R., Kidd, L.R. Variant Base & Nucleotide Excision Repair Alleles and Prostate Cancer Risk among African American Men, Midwest DNA Repair Symposium, Louisville, KY, May 2010.

Matoba:

1. Matoba N, Husk A, Barnett B, Pickel M, Arntzen C, Takahashi A, Tanno K, Montefiori D, Hanson C and Tanaka H. "Initial Feasibility Analysis of the Mannose Cluster-specific Lectin Actinohivin as a Candidate HIV-1 Microbicide" The Second International Conference on Modern Mucosal Vaccines, Adjuvants & Microbicides, April 28 – 30, 2010, Dublin, Ireland
2. Matoba N, Husk A, Barnett B, Arntzen C, Montefiori D, Cao H, Hanson C and Tanaka H. "In Vitro Anti-HIV-1 Efficacy Profile and Plant-based Recombinant Expression of Actinohivin, an Env Mannose Cluster-specific Lectin" 2010 International Microbicide Conference, May 22 – 25, 2010, Pittsburgh, PA – *I received a Scholarship Award to attend the conference.*
3. Husk A, Sankaran S, Palmer KE, Matoba N. "HIV-1 Neutralization Profile and Plant-Based Recombinant Expression of Actinohivin and Derivatives: Comparing Potency and gp120 Binding Affinity for Monomer and Dimer Molecules" Research!Louisville, University of Louisville, October 2010. – *Mr. Husk, Research Technologist in my laboratory, received Grand Prize in the Professional Staff category.*
4. Husk A, Sankaran S, Palmer KE, Matoba N. "HIV-1 Neutralization Profile and Plant-Based Recombinant Expression of Actinohivin and Derivatives: Comparing Potency and gp120 Binding Affinity for Monomer and Dimer Molecules" James Graham Brown Cancer Center 9th Annual Retreat, University of Louisville, November, 2010.
5. Hamorsky K, Sankaran S, Walker J, Palmer K, Matoba N. "Evaluation of Plant-derived N-mannosylated Cholera Toxin B subunits on Mucosal Immunogenicity" James Graham Brown Cancer Center 9th Annual Retreat, University of Louisville, November, 2010.

6. Humphrey A, Hamorsky K, Metts B, Sankaran S, Bomsel M, Matoba N. "Creation of an anti-HIV Microbicide Using IgA177" 2010 Kentucky Academy of Science Annual Meeting, held at Western Kentucky University, Bowling Green, KY, November, 2010 – *Ms. Humphrey, an undergraduate intern in my laboratory, received **First Place** in the Health Sciences category.*

McGregor:

1. L. J. Stallons, T. Kalbfleisch, A. Cambon, S. Datta, and W. G. McGregor. Systems biology reveals altered polo-like kinase signaling in polymerase iota-deficient cells after UV. Research! Louisville October 2010.
2. J. C. Greenwell, L.J. Stallons, H-G. Zhang, and W. G. McGregor. Y-family polymerases alter serum cytokine levels after ultraviolet radiation. Research! Louisville October 2010.
3. W. Badger, S. Eid, A. Berdis, J. Daly, M. Diaz, W. G. McGregor. The role of translesion synthesis and nucleotide excision repair in the tolerance and excision of non-natural nucleotides. Research! Louisville October 2010
4. AC. Klarer, K. Yaddanapudi, W. G. McGregor, and Sucheta Telang. PFKFB3 is required for resistance to apoptosis under hypoxia. Research! Louisville October 2010.

Myers:

1. Gravari, E., Radmacher, P. G., Adamkin, D. H., and **Myers, S. R.** Amino acid profiles in infants less than 1250 g receiving total parental nutrition. Journal of Neonatal and Perinatal Medicine, Research Louisville, 2010

Nerland:

1. Benz, F.W., Cai, J., Nerland, D.E., Hurst, H.E. and Pierce, W.M., Second order rate constants for the in vitro reaction of the toxic industrial chemical acrylonitrile with the most reactive sites in human blood. Abstract #1848, 49th Annual Meeting, Society of Toxicology, Salt Lake City, UT, March 7-11, 2010 (Toxicological Sciences 114: No. 1-Supplement, 393).
2. Cai, J., Benz, F.W., Nerland, D.E., Hurst, H.E. and Pierce, W.M., Human serum albumin Cys34 adducts as a biomarker for exposure to unknown reactive chemicals, Abstract #2724, 58th ASMS Conference on Mass Spectrometry and Allied Topics, Salt Lake City, UT, May 23-27, 2010.
3. F. Benz, F. J. Cai, D. Nerland, H. Hurst and W. Pierce. Acrylonitrile, adduct, mass spectrometry, biomarker, toxic industrial chemicals. Abstract #P101-014, XII International Congress of Toxicology, Barcelona, Spain, 19-23 July 2010 (Toxicology Letters 196S: S41).

Sankar:

1. Cary, R., Willcut, B. and Sankar U. "Restriction of Small Cell Lung Cancer Survival and Proliferation by Inhibition of Calcium/Calmodulin-Dependent Protein Kinase IV". 96th Annual Meeting of the Kentucky Academy of Sciences, November 13, 2010, Bowling Green, KY. (***Poster won First Place Award at the KAS meeting**).
2. Todd L. R. and Sankar U. "A Novel Gfer-Drp1 Link in Preserving Mitochondrial Dynamics and

Function in Pluripotent Embryonic Stem Cells” Ninth Annual Brown Cancer Center Retreat, November 5, 2010; The Olmstead, Louisville, KY.

3. Teng E. C., Todd L. R., Ribar T.J., DeMascio L., Lento W., Means A. R and Sankar U. 2010. Gfer inhibits Jab1-mediated degradation of p27^{kip1} to restrict proliferation of Hematopoietic Stem Cells. Ninth Annual Brown Cancer Center Retreat, November 5, 2010; The Olmstead, Louisville, KY.

4. Monaco S., Rusciano M. R., Gomathinayagam R., Todd L. R., Cates, J., Maione A. S., Rossi G., Illario M.* and Sankar U*. 2010. Calmodulin-Dependent Protein Kinases II and IV Cross-Talk to Regulate Leukemia Cell Proliferation. Ninth Annual Brown Cancer Center Retreat, November 5, 2010; The Olmstead, Louisville, KY.

5. Willcut, B., Cary, R., Todd, L. and Sankar U. “A requirement for calcium/calmodulin-dependent protein kinase IV in the maintenance of small cell lung carcinoma”. Research! Louisville, October 12, 2010, Louisville, KY.

6. Todd L. R., Damin, N. M. and Sankar U. “A Novel Gfer-Drp1 Link in Preserving Mitochondrial Dynamics and Function in Pluripotent Stem Cells” 8th Annual Meeting of the International Society for Stem Cell Research, June 16-20, 2010, Moscone West, San Francisco, CA.

Song:

1. Z H Song and Z Qiao, Abnormal-Cannabidiol-Induced Increase in Aqueous Humor Outflow, The Association for Research in Vision and Ophthalmology Annual Meeting, Fort Lauderdale, FL, May, 2010.

2. J Hallgren, Z Qiao and Z H Song, Effect of GPR3 Single Nucleotide Polymorphisms on Gamma Secretase Assembly, Research Louisville, October 2010

3. P Kumar, Z Qiao, Z H Song, Characterization of the 2nd Extracellular Loop of Cannabinoid Receptor 2
Research Louisville, October 2010

4. J Hallgren, Z Qiao and ZH Song, Effect of GPR3 Single Nucleotide Polymorphisms on Gamma Secretase Assembly, American Society for Cell Biology Annual Meeting, Philadelphia, PA, December 2010

5. P Kumar, Z Qiao, Z H Song, Characterization of the 2nd Extracellular Loop of Cannabinoid Receptor 2
American Society for Cell Biology Annual Meeting, Philadelphia, PA, December 2010

States:

Published:

1. E. N. Rogers, J. States, Curcumin Regulates Cell Cycle Progression in a p53-dependent Manner in Response to BPDE-induced Damage. Abstract 133. The Toxicologist CD — An official Journal of the Society of Toxicology, Volume 114, Number S-1, March 2010

2. E. Vladykovskaya, P. Haberzettl, J. States, J. A. Suttles, S. Srivastava. Role Of Endoplasmic Reticulum Stress In Inflammatory Responses To Arsenic In Endothelial Cells And

Macrophages. Abstract 960. The Toxicologist CD — An official Journal of the Society of Toxicology, Volume 114, Number S-1, March 2010

3. J. C. States, A. Singh, T. Knudsen, E. Rouchka, M. S.Ko, Y. Piao, N. O. Ngalame, J. Arteel, G. Arteel, S. Srivastava. Transplacental Arsenic Exposure Induced Changes In Liver Programming Associated With Accelerated Atherosclerosis. Abstract 1430. The Toxicologist CD — An official Journal of the Society of Toxicology, Volume 114, Number S-1, March 2010

4. M. Zajack, Y. Piao, M. S. Ko, E. Rouchka, J. States. Stimulation Of Inflammation And Mitochondrial Dysfunction Pathways By Arsenic Exposure In Livers Of Apoeknockout Mice. Abstract 1719. The Toxicologist CD — An official Journal of the Society of Toxicology, Volume 114, Number S-1, March 2010

5. C. S. Muenyi, V. A. States, J. H. Masters, T. Fan, C. Helm and J. States. Murine Hipec Model For Study Of In Vivo Effects Of Chemotherapy Against Metastatic Human Ovarian Cancer. Abstract 2009. The Toxicologist CD — An official Journal of the Society of Toxicology, Volume 114, Number S-1, March 2010

6. Ngalame, NNO, Beieir, JL, Arteel, GE, Srivastava, S, States, JC. (2010) In utero arsenic exposure induces subtle hepatic damage and systemic inflammation associated with accelerated atherosclerosis in ApoE^{-/-} mice. Birth Defects Res Part A – 88:379

7. Tan M, Massey VL, Ding X, Zhong H, States JC, and Arteel GE (2010) Arsenic pre-exposure delays cell cycle entry and progression in mouse liver after partial hepatectomy. Hepatology 52:462A

Regional/Local:

1. NA Lavender, OO Komolafe, M Benford, G Brock, JH Moore, TT VanCleave, JC States, RA Kittles, LR Kidd. No Association between Variant DNA Repair Genes and Prostate Cancer Risk among Men of African descent. 12th Annual Midwest DNA Repair Symposium, University of Louisville, Louisville, KY, May 15 -16, 2010.

2. LM Millner, MA Doll, JC States, DW Hein. *Differences in Arylamine-induced Mutagenesis Associated with N-Acetyltransferase 1 Alternative mRNA Isoforms*. 12th Annual Midwest DNA Repair Symposium, University of Louisville, Louisville, KY, May 15 -16, 2010.

3. VA States, CS Muenyi, JH Masters, T Fan, CW Helm, JC States. Arsenic alters the expression of DNA repair proteins and platinum accumulation in vivo after murine hyperthermic intraperitoneal chemotherapy (HIPEC). 12th Annual Midwest DNA Repair Symposium, University of Louisville, Louisville, KY, May 15 -16, 2010.

4. CS. Muenyi, TW Fan, CW Helm, and JC States. Arsenic and hyperthermia sensitization of p53^{+/+} ovarian cancer cells to cisplatin is associated with decreased XPC protein and increased cellular Pt accumulation. 12th Annual Midwest DNA Repair Symposium, University of Louisville, Louisville, KY, May 15 -16, 2010.

5. EN Rogers, G Jiang, JC States. Curcumin regulates cell cycle progression in a p53-dependent manner in response to BPDE-induced DNA damage. 12th Annual Midwest DNA Repair Symposium, University of Louisville, Louisville, KY, May 15 -16, 2010.

6. M Lykins, A Pinhas, C States. ANAPC11 as an Arsenic Target. Abstract MED-40.

Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

7. M Tan, V Massey, X Ding, H Zhong, JC States, G Arteel. Arsenic Pre-exposure Delays Cell Cycle Entry and Progression in Mouse Liver after Partial Hepatectomy. Abstract RA-89. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

8. CS Leggett, DF Barker, MA Doll, LM Millner, JC States, DW Hein. Functional Effects of CYP1A2, NAT1, and NAT2 Genetic Variants in Nucleotide Excision Repair-deficient Human Fibroblasts: Implications for Toxicological Risk from Environmental Arylamines. Abstract GRM-12. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

9. LM Millner, MA Doll, JC States, DW Hein. Functional Effects of NAT1*14B Polymorphism in a NATb mRNA Construct. Abstract GRD-46. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

10. EN Rogers, JC States. Curcumin Regulates Cell Cycle Progression in Response to BPDE-induced DNA Damage. Abstract GRD-53. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

11. Y Zhu, JC States, Y Wang, DW Hein. Functional Effects of Genetic Polymorphisms in the N-acetyltransferase 1 Coding and 3' Untranslated Regions. Abstract RA-94. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

12. C Muenyi, V States, J Masters, T Fan, CW Helm, JC States. 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 GRD-48. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

13. NNO Ngalame, ME Feil, AFMicicche, JC States. Delayed Temporal Increase of Hepatic Hsp70 in ApoE^{-/-} Mice with Accelerated Atherosclerosis Induced by in Utero Arsenic Exposure. Abstract GRD-49. Research!Louisville, University of Louisville, Louisville, KY, October 11 - 15, 2010.

14. M Tan, VL Massey, X Ding, H Zhong, JC States, G Arteel. Arsenic Pre-exposure Delays Cell Cycle Entry and Progression in Mouse Liver after Partial Hepatectomy. Ohio Valley Society of Toxicology, University of Cincinnati, Cincinnati, OH, September 24, 2010.

15. NO Ngalame, ME Feil, AFMicicche, JC States. Delayed Temporal Increase of Hepatic Hsp70 in ApoE^{-/-} Mice with Accelerated Atherosclerosis Induced by in Utero Arsenic Exposure. Ohio Valley Society of Toxicology, University of Cincinnati, Cincinnati, OH, September 24, 2010.

16. CS Muenyi, VA States, Jh Masters, T Fan, CW Helm, JC States. 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. Ohio Valley Society of Toxicology, University of Cincinnati, Cincinnati, OH, September 24, 2010.

17. CS Leggett, DF Barker, MA Doll, LM Millner, JC States, DW Hein. Functional Effects of CYP1A2, NAT1, and NAT2 Genetic Variants in Nucleotide Excision Repair-deficient Human Fibroblasts: Implications for Toxicological Risk from Environmental Arylamines. Brown Cancer Center Retreat, University of Louisville, Louisville, KY, November 5, 2010.

18. LM Millner, MA Doll, JC States, DW Hein. Functional Effects of NAT1*14B Polymorphism in a NATb mRNA Construct. Brown Cancer Center Retreat, University of Louisville, Louisville, KY, November 5, 2010.

19. CS Muenyi, VA States, Jh Masters, T Fan, CW Helm, JC States. 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. Brown Cancer Center Retreat, University of Louisville, Louisville, KY, November 5, 2010.

20. EN Rogers, JC States. Curcumin Regulates Cell Cycle Progression in Response to BPDE-induced DNA Damage. Brown Cancer Center Retreat, University of Louisville, Louisville, KY, November 5, 2010.

21. Y Zhu, JC States, Y Wang, DW Hein. Functional Effects of Genetic Polymorphisms in the N-acetyltransferase 1 Coding and 3' Untranslated Regions. Brown Cancer Center Retreat, University of Louisville, Louisville, KY, November 5, 2010.

Others

These are from a biennial national meeting of metals toxicologists.

1. JC States, Liver Gene Expression Changes Associated with Arsenic-induced Atherogenesis. 6th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, University of Kentucky, Lexington, KY, November 14 -17, 2010.

2. CS Muenyi, VA States, Jh Masters, T Fan, CW Helm, JC States. 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. 6th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, University of Kentucky, Lexington, KY, November 14 -17, 2010.

3. NO Ngalame, ME Feil, AFMicicche, JC States. Delayed Temporal Increase of Hepatic Hsp70 in ApoE^{-/-} Mice with Accelerated Atherosclerosis Induced by in Utero Arsenic Exposure. 6th Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, University of Kentucky, Lexington, KY, November 14 -17, 2010.

RESEARCH GRANTS FUNDED

Agency/Number	Title	Role	PI	Project Period	Budget Award
Gavin Arteel					
RC2 AA019385	Biomarkers for Steatohepatitis	Co-I	McClain	09/30/09-08/31/11	\$1,536,994
R01 AA010154	TNF α and recovery from alcoholic liver injury	Subcon PI	Diehl (Duke)	09/01/09-12/31/11	\$140,255 (subcon)
R01 AA003624 S1	Control of drug and ethanol metabolism (supplement)	PI	Arteel	07/15/09-12/31/10	\$130,836
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/09-06/30/14	\$2,037,745
R01 AA016013	Zinc inhibition of endotoxemia in alcoholic liver injury	Co-I	Zhou	06/05/09-05/31/11	\$248,310

R21 ES016367	Priming of liver disease by arsenic exposure	PI	Arteel	05/01/09-04/30/11	\$406,000
P01 AA017103	Alcohol liver disease and alcohol-nutrient interactions	Dir, An core	McClain	09/30/08-08/31/11	\$1,350,000
R21 ES015812	Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease	Co-I	States	04/01/08-03/31/10	\$406,000
F31 AA017346	The role of PKC ϵ in alcoholic liver disease	Mentor	Kaiser	11/01/07-05/31/10	\$84,894
P30 ES014443	Center for Environmental Genomics and Integrative Biology	Investigator	Ramos	06/04/07-03/31/11	\$4,440,000
R01 AA003624	Control of drug and ethanol metabolism	PI	Arteel	05/02/06-04/30/11	\$1,364,794
Frederick Benz					
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
DoD US Army W81XWH-08-1-0047	High Technology Mass Spectrometry Laboratory	PI, AY 2010	Benz	2/1/2008 – 6/30/2010	\$944,000
Jian Cai					
IB080452 (KSTC)	Pharmacodynamics of Bone Targeted Drugs. Part B	PI	Cai	5/09-5/10	No cost extension.
W81XWH-08-1-0047 (DOD)	High Technology Mass Spectrometry Lab	Co-PI	Pierce/Benz	4/08-8/10	\$944,000.
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-PI	Benz	9/27/2010 – 9/26/2012	558,000
Theresa Chen					
NIH/NIAAA R01 AA015970	S-adenosylchomocysteine and S-adenosylmethionine in alcoholic liver disease	Co-I	McClain	9/30/05 – 6/30/11	\$357,500
KDR-PP09-03	Diabetic condition and regulation of inflammatory	Co-I	Barve	07/01/08-06/30/10	25,000
NIDCR R03 DE019177	A novel murine model of chronic inflammatory periodontitis	Co-I	Oz (U-KY)	5/1/09-4/30/11	\$250,000
NIH/5 R01 DK072032-02	Podocytes and oxidative stress in diabetic kidney	Co-I	Epstein	9/1/05-7/31/11	\$250,000
R21 ES016367	Priming of liver disease by arsenic exposure	Co-I	Arteel	05/01/09-04/30/11	\$275,000
Keith Davis					
DoD/USAMRMC W81XWH-09-2-0022*	08116003 Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	PI	Davis	3/15/09 to 3/14/12	\$1,680,000

Soybean Promotion Board	Development of the Soybean-Derived Peptide Lunasin as a Chemoprevention Agent	PI	Davis	7/1/10-6/30/11	\$68,000
Kentucky Renew Energy Consortium	Production of High-Value Cellulase from Tobacco	Co-PI	Berson	10/1/09 to 3/31/11	\$100,476
Owensboro Grain	Development of Lunasin as a Chemoprevention Agent	PI	Davis	05/01/2010-04/30/2011	\$ 136,761
U of L Clinical & Translational Science Pilot Grant	Development of the Soy Peptide Lunasin as a Chemoprevention Agent	PI	Davis	06/01/2010-05/31/2011	\$89,122
Alpha-1 Foundation	Scalable Plant-Based Expression of Alpha-1 Antitrypsin	PI	Davis	07/1/2010-06/30/2011	\$40,000
DoD/USAMRMC W81XWH-10-2-0082**	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI	Davis	08/23/2010-08/22/2013	\$1,751,000
Ramesh Gupta					
NCI CA-118114	Breast Cancer Chemoprevention Strategies	PI	Gupta	04/07 - 02/11	\$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	Effect of estrogen on polycyclic aromatic hydrocarbon (PAH)-mediated lung cancer	PI	Gupta	09/07 - 02/11	\$149,939
NCI CA-125152-02S1	Administrative supplement to "Breast Cancer Chemoprevention Potential of Common spices"	PI	Gupta	06/08-07/10	\$29,626 Direct
NCI CA-118114-03S1	Administrative supplement to "Breast Cancer Chemoprevention Strategies"	PI	Gupta	08/09-07/10	\$99,268 Direct
CTSPGP	Development of the Soy Peptide Lunasin as a Chemoprevention Agent	Co-I	Davis	6/10/-5/11	\$89,122 Direct
KY Lung Cancer Res Board	Activation of the Par-4Extrinsic Pathway for Suppression of Lung Cancer	PI	Gupta	12/10-11/12	\$68,182 Direct
David Hein					
NCI R01-CA034627	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	07/01/2003 – 12/1/10	\$1,724,900
NIH/NCI(R01-CA034627-23S1)	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	07/01/2008– 12/1/2010	\$25,000
NIH/NIEHS (T32 ES011564)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/2009 – 06/30/2014	\$2,037,745
NIEHS T35 ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/2006 – 03/31/2011	\$158,355
NIH (P30-ES014443)	Center for Environmental Genomics and Integrative Biology	Inv.	Ramos	06/04/2007 – 03/31/2011	\$4,440,000
BC083107 DOD Breast Cancer Research Program	N-acetyltransferase 1 polymorphism and breast cancer risk	Mentor	Millner	09/29/2008 – 09/28/2011	\$92,442
UofL Clinical and Translational Pilot	Understanding and predicting individual cancer risk	PI	Hein	06/01/2010-05/31/2011	\$50,000

Program					
Harrell Hurst					
NIH NCI 1R01CA118114	Breast cancer prevention strategies	Co-I	R. Gupta	04/01/2007 – 02/28/2011	\$1,874,510
NIH NCI 1R01CA125152	Breast cancer prevention role of common spices	Co-I	R. Gupta	07/01/2007 – 05/31/2012	\$351,365
US Army Med Res. Acq. Activity W81XWH-08-1-0047	High Technology Mass Spectrometry Lab	Co-I	Benz	2/1/2008 – 6/30/2010	\$944,000
US Army Med Res. Acq. Activity W81XWH-10-2-0143	High Technology Mass Spectrometry Lab	Co-I	F. Benz	9/27/2010 – 9/26/2012	\$558,000
Y.J. Kang					
NIH-NHLBI, 2R01 HL063760	Oxidative stress and heart failure by copper restriction	PI	Kang	07/01/07- 06/30/11	\$1,480,000
NIH-NIAAA, R01 AA014623	Zinc and alcohol-induced oxidative liver injury	Co-I	Zhou, Z	08/10/05- 05/31/10	\$1,139,252
NIH-NIAAA R01 AA016013	Zinc inhibition of endotoxemia in alcoholic liver injury	Co-I	Zhou, Z	06/05/09- 05/31/11	\$750,000
NIH-NIAAA R01 AA018844	Adipose tissue lipolysis and alcoholic fatty liver	Co-I	Zhou, Z	09/30/09- 09/30/14	\$1,850,00
NIH 5P01AA017103- 02	Alcohol Liver Disease and Alcohol- Nutrient Interaction	Member	McClain C	10/01/08- 09/30/11	\$1,350,000
LaCreis Kidd					
P20 MD000175-09	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	\$2,037,745
Nobuyuki Matoba					
NIH NIAID/1R03AI07315 7-01A1	Expression of Deconstructed Virus- Like Particles in Bioengineered Plants.	PI	Matoba	03/15/07- 02/28/10	\$100,000 (total direct costs)
UoFL SOM Basic Grant/E0581	Production and Evaluation of Plant- made Anti-HIV Protein Actinohivin	PI	Matoba	04/1/09- 03/31/10	\$15,000 (total direct costs)
UoFL CTSPGP Basic Award/20002	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)/ 1R21AI088585-01	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	06/10/10 – 05/31/12	\$275,000 (total direct costs, and pending for \$900,000 direct costs for R33 phase)
DoD/USMRAA/TAT RC/W23RYX0158N6 06	Plant-Based Expression Systems for New Vaccines and Therapeutics	Subproj ect PI	Davis	08/23/10 – 09/22/13	\$390,000 (total subproject direct costs)

W. Glenn McGregor					
NIH/NCI 1 R01 CA112197-04	Mutagenesis as a novel target for cancer prevention	PI	McGregor	04/01/06-03/31/10	\$750,000 Total Direct Costs
NIH/NCI 3 R03 139537-01	DNA polymerase iota as a putative tumor suppressor	PI	McGregor	03/01/09-2/28/11	\$100,000 Total Direct Costs
R03 139537-01 S1	ARRA supplement to support undergraduate research	PI	McGregor	06/01/08-5/30/2010	\$12,500 direct
KLCRP	The role of REV1 in lung carcinogenesis	Co-PI with Z. Wang	McGregor/Wang	12/01/2010-11/30/2012	\$300,000 direct
1P30ES014443-03	Center For Environmental Genomics And Integrative Biology	Investigator	Ramos	6/4/07-3/31/11	\$1,160,320 yearly costs
NIH-NIEHS, T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/09-06/30/14	\$2,037,745
Steven Myers					
Univ. Of California Tobacco-Related Disease Research Program /17rt-0138	Measuring prenatal tobacco exposure in newborn blood spots	Co-I	J. Yang (U-CA)	07/01/08 - 06/30/11	\$506,927
Donald Nerland					
DoD US Army W81XWH-10-2-0143	Biomarkers of Exposure and Mechanism of Action of Toxic Industrial Chemicals (TICs)	Co-I	F.W. Benz	9/27/2010 – 9/26/2012	\$558,000
DoD US Army W81XWH-08-1-0047	High Technology Mass Spectrometry Laboratory	Co-I	W.M. Pierce	2/1/2008 – 6/30/2010	\$944,000
Kenneth Palmer					
NIH/ R-01 AI076169	Antiviral Lectins as Microbicides	PI	Palmer	04/15/2008 – 03/31/2012	\$1,760,628 (total costs)
NIH/ R01 AI076169 Supplement	Antiviral Lectins as Microbicides	PI	Palmer	09/15/2009 – 08/31/2010	\$519,000 (total costs)
University of Louisville CTSPGP Award	Selection of a novel composition pan-oncogenic HPV vaccine candidate	PI	Palmer	07/01/2010 – 06/30/2011	\$200,000 (total costs)
University of Louisville CTSPGP Award	The role of the potato virus Y nuclear inclusion B protein in the immunobiology of Alzheimer's disease	Co-I	Friedland	07/01/2010 – 06/30/2011	\$50,000 (total costs)
NIH/ R21 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	Co-I	Matoba	06/01/2010 – 05/31/2012	\$409,750 (total costs)
DOD Cong. Appr. to Owensboro Cancer Research Program	Plant-produced broad-spectrum antivirals	PI of sub-project	Davis	09/01/2010 – 08/31/2013	\$390,000 (total costs of sub-project)
William Pierce					
Department of Defense US Army W81XWH-08-1-0047	High Technology Mass Spectrometry Laboratory	PI	Pierce – (transferred)	2/1/2008 – 6/30/2010	\$944,000
Uma Sankar					
NIH/ R-01 AI076169	Antiviral Lectins as Microbicides	Co-I	Palmer	04/15/2008 – 03/31/2012	\$1,760,628 (total costs)
NIH/1R01AI07616	Antiviral lectins as microbicides	Co-I	Palmer	04/01/08 –	\$1,760,628 (total

9-01A2				03/31/12	costs)
NIH NIAID Microbicide Innovation Program V (R21/R33) 1R21AI088585-01	Plant-produced Actinohivin as a Candidate HIV Microbicide	Co-I	Matoba	06/10/10 – 05/31/12	\$275,000 (total direct costs, and pending for \$900,000 direct costs for R33 phase)
Zhao-Hui (Joe) Song					
R01DA11551-09	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	8/1/09-7/31/11	\$740,000
T32ES11564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/2009 – 06/30/2014	\$2,037,745
J. Christopher States					
NIH-NIEHS, R21ES015812	Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease	PI	States	4/1/08 – 3/31/11	No Cost Extension
NIH-NIEHS, R01ES011314-05	Arsenic Induced Miotic Arrest Associated Apoptosis	PI	States	8/1/03 – 4/30/10	No Cost Extension
NIH-NIEHS, R01ES011314-05S1	Arsenic Induced Miotic Arrest Associated Apoptosis	PI	States	6/2009- 10/2009	\$6,000
NIH-NIEHS, 1P30ES014443	Center for Environmental Genomics and Integrative Biology	Deputy Director	Ramos	06/04/07 - 03/31/11	\$4,410,000
NIH-NIEHS, R21ES016367	Priming of liver disease by arsenic exposure	Co-I	Arteel	05/01/09 – 04/30/11	\$440,000
NIH-NIEHS, R01ES017260	Atherogenic Mechanisms of Arsenic	Co-I	Srivasta va	06/15/09 – 03/31/14	\$329,670 annually
NIH-NIEHS, T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/09- 06/30/14	\$2,037,745
NIH-NIEHS, T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/06 – 03/31/11	\$158,355
NIH-NIEHS, F31ES016719	Curcumin inhibits BPDE-induced damage by lowering the threshold of p53 activation	Mentor	Rogers	05/01/2008 – 08/31/2011	\$78,157

RESEARCH GRANTS SUBMITTED

Gavin Arteel					
NIDDK	A novel therapeutic antibody for hepatic fibrosis	Subcon. PI	Staunton (CisThera, Inc.)	10/01/09- 03/30/11	\$85,544
NIAAA T32 application	University of Louisville's Alcohol Research Training Program	Co-I and Mentor	McClain	04/01/10- 03/31/15	\$783,466
S10 RR026419	Louisville Cellomics	PI	Arteel	04/01/11- 03/31/12	\$213,917

NIAAA	Control of drug and ethanol metabolism	PI	Arteel	04/01/11-03/31/16	\$1,872,083
NIAAA	Alcohol Innate Immune Activation and Convergent Neuro-Hepatotoxicity	PI	Arteel	09/01/10-08/31/15	\$2,362,476
NIAAA	Novel Role of Fibrin Metabolism in Normal and Alcohol-Impaired Liver Regeneration	Co-mentor	Beier	04/01/11-03/31/16	\$926,998
NIAAA	Alcohol and Gut:Liver:Brain Axis	PI	Arteel	12/01/11-11/30/16	\$3,747,083
NIAAA	Fibrin signaling in alcoholinduced liver disease	PI	Arteel	07/01/11-06/30/16	\$1,872,500
Jian Cai					
NIH	Compound-Gene Suppression Profiling to Advance Probe and Target Discovery	Co-PI	Jonsson	9/1/2010-8/31/2013	\$11,217,541
NCI	Subcontact to Core C of Project "Mechanisms of Redox Injury" (UK)	PI	Cai	7/1/2011-6/30/2016	\$94,720
Theresa Chen					
NCCAM R21 NIH	Pregnancy Complications in Inflammatory Bowel Disease: Innovative Antioxidant Therapies.	Co-PI	Oz (U-KY)	7/1/11-6/30/13	\$250,000
Keith Davis					
DoD/USAMRMC W81XWH-10-2-0082**	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI	Davis	08/23/2010-08/22/2013	\$1,751,000
Owensboro Grain	Development of Lunasin as a Chemoprevention Agent	PI	Davis	05/01/2010-04/30/2011	\$136,761
Alpha-1 Foundation	Scalable Plant-Based Expression of Alpha-1 Antitrypsin	PI	Davis	07/1/2010-06/30/2011	\$40,000
Soybean Promotion Board	Development of the Soybean-Derived Peptide Lunasin as a Chemoprevention Agent	PI	Davis	07/1/2010-06/30/2011	\$68,000
National Institutes of Health/NIAID R01 AI093389	Targeting envelope glycans for prevention and treatment of respiratory infections	Co-I	Palmer	06/1/2011-05/31/2016	\$6,087,961
Ramesh Gupta					
DOD BC101893P1	Breast Cancer Prevention by Anacardiac Acid using Novel Slow-Release Polymeric Implants	Co-I	Klinge	07/10-06/12	\$210,930 Direct
DOD BC102411	Breast Cancer Prevention/Treatment by Berries: Window of Opportunity	PI	Gupta	11/10-10/12	\$191,169 Direct
KY Lung Cancer Res. Board	Inhibition of Cigarette Smoke-mediated DNA Damage in the Lung by Dietary Selenium	PI	Gupta	10/10 - 09/12	\$68,182 Direct
KY Lung Cancer Res. Board	Inhibition of Cigarette Smoke-mediated DNA Damage in the Lung by Dietary Berries	PI	Gupta	10/10 - 09/12	\$68,182 Direct

NCI OD008872-01	Prevention of Lung Cancer Recurrence and Metastasis by Berries	PI	Gupta	07/11-06/12	\$361,792 Direct
NCI CA-162417	Sustained, Target delivery for Treatment of Cervical Pathologies	PI	Gupta	07/11-06/12	\$54,196 Direct
US Highbush Blueberry Council	Prevention of Breast Cancer by Blueberry	PI	Gupta	04/11-03/13	\$146,161
David Hein					
UofL; Clinical and Translational Pilot Program	Understanding and predicting individual cancer risk	PI	Hein	06/01/2010-05/31/2011	\$50,000
NCI R01-CA034627	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	12/01/2010-11/30/2015	\$875,000
NCI R25CA011564	University of Louisville Cancer Education Program	PI	Hein	12/01/2010-11/30/2015	\$1,562,990
NIH 1U54 RR026087	University of Louisville's Clinical and Translational Institute	Director	McClain	07/01/2011--06/30/2016	\$19,898,356
NCI K12 Training grant	Clinical Investigator Training Program	Mentor	Miller	07/01/11 - 06/30/16	\$3,794,493
NIH (P30-ES014443)	Center for Environmental Genomics and Integrative Biology	Investigator	Ramos	04/01/2011-03/31/2016-	\$8,225,250
DOD/CDMRP Post-doctoral fellowship	Genetic variation in immune components of rat mammary cancer susceptibility	Co-Mentor	Devapatla	09/01/2011 - 08/31/2014	\$373,146
NIH (F31ES020667) Pre-doctoral Fellowship	Functional effects of CYP1A2, NAT1, and NAT2 genetic variants in nucleotide excision repair - deficient human fibroblasts: Implications for toxicological risk by environmental arylamines	Mentor	Leggett	2011-2014	\$88,485
Y. J. Kang					
NIH-NHLBI, R01 HL105975	Mitochondrial integrity in regression of hypertrophic cardiomyopathy	PI	Kang	12/01/2010 - 11/30/2015	\$1,850,000
LaCreis Kidd					
Department of Defense	Prostate Cancer Research Program Synergy/Innate Immunity Predictors of Prostate Cancer	Contact-PI	Kidd/ Kimbro	7/1/2011-6/31/2014	\$756,861
NIH PAR-09-161	U01 Basic Cancer Research in Cancer Health Disparities: Innate Immunity Predictors of Prostate Cancer Outcomes & Disparities	Contact-PI	Kidd/ Kimbro	04/01/2011-3/31/16	\$1,897,967
R25-CA134283-01A1	University of Louisville Cancer Education Program	Mentor	Hein	12/1/10-11/30/15	\$1,560,990
Nobuyuki Matoba					
NIH/NIAID 1R01AI093389-01	Targeting envelope glycans for prevention and treatment of viral respiratory infections	Co-I	Palmer	06/01/11 - 05/31/16	\$ 6,087,961 (Total direct costs)
NIH NIAID Microbicide	Development of a recombinant entry/fusion-bispecific inhibitor toward	PI	Matoba	04/1/11-03/31/16	\$1,175,000 (total direct costs)

Innovation Program VI (R21/R33)/ 1R21AI094472-01	a topical HIV-1 microbicide.				
NIH 2011 NIH Director's New Innovator Award Program (DP2)/ 1DP2OD008522-01	Mucosal immunomodulatory activity of N-mannosylated cholera toxin B subunits	PI	Matoba	09/01/11 – 07/31/16	\$1,500,000 (total direct costs)
Bill & Melinda Gates Foundation Global Health CAVD	Block of mucosal HIV transmission by a combination of anti-CD4, -CCR5 and -gp41 human monoclonal antibodies	Subproject PI	Lopalco	05/01/11 – 04/30/13	\$377,638 (total direct costs)
NIH NIAID R21	HIV vaccine potential of a cholera toxin subunit displaying high-mannose glycans	PI	Matoba	07/01/11 – 06/30/13	\$275,000 (total direct costs)
W. Glenn McGregor					
1 R21 ES 19086-01A1	Y-family DNA polymerases and cellular responses to benzo[a]pyrene	PI	McGregor	10/01/11-9/30/13	\$275,000 (direct)
1 R21 CA 150294-01A1	Role I3C in the genetic reprogramming of developmental networks	PI	McGregor	10/01/11-9/30/13	\$275,000 (direct)
2 R01 CA112197-06	Novel antimitator strategies to prevent skin cancer	PI	McGregor	10/01/2011-9/30/16	\$1,000,000 (direct)
Steven Myers					
US-Egypt Joint Board on Scientific and Technological Cooperation	Biomarkers of Environmental Pollution in Egypt	PI	Myers	5/1/11-4/30/14	\$250,000
Kenneth Palmer					
NIH/ R01 AI093389	Targeting envelope glycans for prevention and treatment of respiratory infections	PI	Palmer	06/01/2011-05/31/2016	\$ 6,087,961
NIH/ R21 AI094472	Development of a recombinant entry/fusion-bispecific inhibitor toward a topical HIV-1 microbicide	Co-I	Matoba	04/1/11-03/31/16	\$1,175,000 Direct
NIH / DP2OD008522	Mucosal immunomodulatory activity of N-mannosylated cholera toxin B subunits	Co-I	Matoba	09/01/2011-08/31/2016	\$1,500,000 Total Direct costs
Uma Sankar					
American Cancer Society Research Scholar Award	Role of calmodulin-dependent protein kinases in hematopoiesis and leukemia	PI	Sankar	07/01/10-06/30/14	\$964,969 Total direct costs
NCI/R01CA149315-01	Calmodulin-dependent protein kinases in hematopoiesis and leukemia (<i>Scored at 53rd Percentile</i>)	PI	Sankar	04/01/10-03/31/15	\$1,250,000 Total direct costs
UofL-IRIG-CEG	Calmodulin-dependent protein kinases in hematopoiesis and leukemia	PI	Sankar	03/01/10-02/28/11	\$15,000
Zhao-Hui (Joe) Song					
R01DA31922	Cannabinoid Receptor Ligand	PI	Song	7/1/11-	\$1,872,500

	Binding and Signaling			6/30/16	
J. Christopher States					
KLCRP	Inhibition of nucleotide excision repair in lung carcinogenesis	Co-PI	States/ Mellon/ Orren	10/01/10 – 09/30/12	\$300,000
NIEHS, R01- ES019160-01A1	In Utero Arsenic-exposure Induced Hepatic Dysfunction and Vascular Disease	PI	States	04/01/11 – 03/31/16	\$1,871,875
NIEHS, P30- ES04443	Center for Environmental Genomics and Integrative Biology	Dep. Dir.	Ramos	04/01/11 – 03/31/16	\$8,225,250
NIEHS, R01- ES020229-01	Methylomics of Arsenic-Induced Skin Cancer	PI	States	07/01/11- 06/30/15	\$1,170,285

INVITED SCIENTIFIC PRESENTATIONS

Arteel:

1. Research seminar, 04/10, "Death and disorder: PAI-1 on the road to hepatocellular carcinoma." University of Louisville James Graham Brown Cancer Center, Molecular Targets group, Louisville, KY.
2. Symposium, 10/10 "Animal models of ALD." Falk Foundation Workshop on Liver and Pancreatic Diseases: Consequences of Chronic Alcoholic Consumption. Freiburg, Germany
3. Symposium, 11/10 "Oxidative stress in NASH/NAFLD." JSH Single Topics Conference, Tokyo, Japan.
4. Research seminar, 11/10 "New roles of PAI-1 and fibrin metabolism in liver injury and repair." Juntendo University, Tokyo, Japan.

Davis:

1. Development of the soy peptide lunasin as an anticancer agent. 2010. Indiana University School of Medicine, Evansville, Indiana

Gupta:

1. Plenary talk (also served as Co-chair of a session) 15th World Congress on Advances in Oncology and 10th International Symposium on Molecular Medicine, Loutraki, Greece, October 2010.
2. Plenary talk (also served as Chair of a session) 3rd International Conference on New developments in Drug Discovery from Natural Products and Traditional Medicines, NIPER, Chandigarh, India, November 2010.

Hein:

1. "Current Nomenclature of Human Arylamine N-Acetyltransferases". Fifth International Workshop on the Arylamine N-acetyltransferases, Paris, France, September 2010.

Kang:

1. Oct 19, 2010. Invited Speaker, International Copper Meeting, Sardinia, Italy, Oct 16-21, 2010. "Copper regulation of VEGF signaling pathways in hypertrophic cardiomyocytes"
2. Sept 18, 2010. Invited Speaker, Annual Meeting of Regenerative Medicine of China, SuZhou, China, Sept 117-18, 2010. "Copper promotion of myocardial regeneration"
3. May 28, 2010. Invited Plenary Lecture, International Anatomical Sciences and Cell Biology Conference, Singapore, "Copper promotes vascularization and regeneration in ischemic myocardium."
4. Apr 16, 2010. Invited Speaker, China National Biomaterial Conference, Chengdu, China, "Copper integrated bioengineered material in myocardial regeneration."

Kidd:

1. 3rd Annual Afro-Caribbean Cancer Consortia Conference, November 11, 2010
"Building capacity to address cancer health disparities in populations of African descent, Miami, FL, "Innate Immunity Sequence Variants as Predictors of Prostate Cancer Outcomes".
2. Dartmouth Medical Center, May 18, 2010 *Hanover, New Hampshire*, Innate Immunity Sequence Variants as Predictors of Prostate Cancer Risk.
3. Men of African Descent Prostate Cancer Consortium, April 18, 2010. 101st Annual American Association for Cancer Research, Washington, DC, "Innate Immunity Sequence Variants as Predictors of Prostate Cancer Risk among Men of African Descent"

Matoba:

1. "Development of a protein-based HIV-1 microbicide using plant biotechnology" Viral and Rickettsial Disease Laboratory, California State Department of Public Health, Richmond, CA, July 8, 2010.

Palmer:

1. Invited oral presentation to National Institutes of Health meeting "New Developments in AIDS Vaccines, Mucosal Transmission and Mucosal Immunity", June 3, 2010. Presentation title: Natural Product-Derived Microbicides
2. Invited seminar in the James Graham Brown Cancer Center Molecular Targets Seminar Series. July 2010. "Antiviral lectin griffithsin".
3. Invited seminar in the Biology Department, University of Louisville. October 2010. "Beyond Latex, Protecting Mucosal Surfaces from Virus Infections".

Song:

1. Cannabinoid Receptor Family and its Adopted Orphans, Biophysical and Structural Biology Seminar Series, Brown Cancer Center, University of Louisville, October, 2010

2. Cannabinoid Receptors, Orphan Receptors and Alzheimer's Disease, School of Basic Medical Sciences, Capital University of Medical Sciences, Beijing, China, July, 2010.

States:

1. "Arsenic Induced Mitotic Disruption", Department of Pharmacology & Toxicology, University of Louisville, Louisville, KY, 1/21/2010

2. "Arsenic Exposure Induced Hepatic Stress and Inflammation Pathways Associated with Accelerated Atherosclerosis", Department of Molecular Genetics, Biochemistry & Microbiology, University of Cincinnati, Cincinnati, OH, 3/30/10

DEPARTMENTAL COURSES

- Medical Pharmacology course to second year medical students. Dr. Mike Williams served as course director.
- Dental Pharmacology and Therapeutics course to dental students. Dr. Leonard Waite served as course director.
- Pharmacology course to second year students in the Dental Hygiene Program. Dr. Leonard Waite 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 651- Neonatal Pharmacology (Dr. Myers)
 - PhTx 652 – Geriatric Pharmacology (Dr. Myers)
 - PhTx 655 – Neuropharmacology (Drs. Rowell and Song)
 - PhTx 656 – Cardiovascular and Renal Pharmacology (Drs. Kang and Williams)
 - PhTx 657 – Endocrine and Metabolic Pharmacology (Drs. Pierce and 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)

STANDING COMMITTEES– 2010

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