Department of Pharmacology & Toxicology

UNIVERSITY OF LOUISVILLE®
SCHOOL OF MEDICINE

2009 Annual Report
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Y. James Kang, Ph.D. transferred his primary appointment as tenured Professor in the Department of Medicine to tenured Professor in the Department of Pharmacology & Toxicology with a concurrent half-time leave of absence for the period 2009-2012. James received the DVM from Shenyang Agricultural University College of Veterinary Medicine followed by the MS in Animal Physiology and Biochemistry at Beijing Agricultural University in China. He received his PhD in Toxicology and Zoology (cell biology) from Iowa State University. Following a postdoctoral fellowship at Cornell University, he was recruited as Assistant Professor of Pharmacology and Toxicology at the University of North Dakota. He was promoted to associate professor with tenure there prior to his recruitment to the University of Louisville. James also holds appointment as Distinguished University Scholar.

Administrative Appointments

William M. Pierce, Jr. PhD was appointed Interim Executive Vice President for Research in addition to his appointment as Vice Provost for Graduate Affairs.
David W. Hein, PhD was appointed Associate University Provost for Strategic Planning.

Peter P. Rowell, Ph.D. was appointed Vice Chair for Graduate Education.

Gavin E. Arteel, Ph.D. was appointed Associate Chair for Research.

Paul N. Epstein, PhD was appointed Interim Director of the Kosair Charities Research Institute.
FACULTY PROMOTION AND TENURE

Zhao-Hui (Joe) Song, PhD was promoted to Professor of Pharmacology and Toxicology.

James W. Lillard, Jr. PhD, MBA was promoted to Professor of Microbiology and Immunology.

Daniel J. Conklin, PhD was promoted to Associate Professor of Medicine (Cardiology) with tenure.

FACULTY DEPARTURES

- David Gozal, MD; Joint Appointment. David accepted appointment as Professor and Chairman of the Department of Pediatrics and Physician-in-Chief, Comer Children's Hospital, at the University of Chicago.
- Yang Wang, MD, PhD; Joint Appointment (changed to adjunct appointment). Yang accepted appointment as Associate Professor of Pediatrics at the University of Chicago.
- Manuel Martinez, MD; Joint Appointment.
- James Lillard, PhD, MBA; Associate Appointment. James accepted appointment as Professor of Microbiology, Biochemistry, & Immunology and Vice Dean for Research at Morehouse School of Medicine.
IN MEMORIUM

- Thom Zimmerman, MD, PhD, professor (joint appointment) emeritus. Thom served many years as Professor and Chairman of the Department of Ophthalmology and Visual Sciences.

CURRICULAR AND POLICY ACTIONS

- Revised departmental mission statement approved
- Pre- and post-doctoral fellow leave policy approved
- Revised MD/PhD curriculum approved
- Revised MS curriculum approved

FACULTY AWARDS AND HONORS

Keith Davis

- Sole owner and CEO of a new Kentucky-based biotechnology company, Planta BioProducts.

Nobuyuki Matoba

- 3rd place, The Roger H. Herzig Junior Faculty Research Prize, James Graham Brown Cancer Center 8th Annual Retreat, November 2009, UofL

Kenneth Palmer

- Recognized with an award at the University of Louisville Celebration of Faculty Excellence event, November 2009, for commercial license of my inventions related to HPV vaccines.
- Research in collaboration with Barry O’Keefe at the National Cancer Institute was featured in a commentary article in Science: Service RF (2009) Sugary Achilles’ heel raises hope for broad-acting antiviral drugs.

William Pierce

- School of Dentistry – Basic Sciences Faculty Award, UofL
- Faculty Favorite – Delphi Center, UofL

Walter Williams

- Thomas B. Calhoun Teaching Award, UofL School of Medicine, fourth year class (2009)
• 2009 Faculty Favorite nominee, Delphi Center for Teaching and Learning, UofL

Graduate Student Awards

• Phillip Kaiser selected as KC Huang Outstanding Graduate Student for 2009.
• Phillip Kaiser received Deans Citation.

MISSION STATEMENT

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 WITH PRIMARY APPOINTMENTS

Gavin E. Arteel, PhD
Associate Professor and Associate Chair for Research
502-852-5157; gearte01@gwise.louisville.edu

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

Frederick W. Benz, PhD
Professor
502-852-5611; benz@louisville.edu

Research Interests
Biochemical pharmacology and toxicology; biochemical mechanisms of drug action and toxicity.
Jian Cai, PhD  
Assistant Professor  
502-852-5164  
j0cai001@gwise.louisville.edu

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  
502-852-7887  
tschen01@gwise.louisville.edu

Research Interests

Biochemical toxicology; role of glutathione in aging toxicology; general and specific toxicity of environmental pollutants.
Keith R. Davis, PhD
Professor
270-688-3694
krdavi16@gwise.louisville.edu

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
502-852-3682
rcgupta@louisville.edu

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
502-852-5141; d.hein@louisville.edu
www.louisville.edu/faculty/dwhein01

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
502-852-5797; h.hurst@louisville.edu
http://louisville.edu/faculty/hehurs01

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
502-852-8677; yjkang01@louisville.edu

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
502-852-3465; lrkidd01@louisville.edu

Research Interests

Gene-gene and gene-environmental interactions; polymorphic xenobiotic metabolizing enzymes and prostate cancer susceptibility; cancer health disparities.
Nobuyuki Matoba, PhD
Assistant Professor
270-691-5955; n.matoba@louisville.edu

Research Interests

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

W. Glenn McGregor, MD
Professor
502-852-2564; wgmcgr01@gwise.louisville.edu

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  
502-852-0928; sr.myers@louisville.edu

**Research Interests**

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

Donald E. Nerland, PhD  
Professor  
502-852-5560; denerl01@gwise.louisville.edu

**Research Interests**

Biochemical toxicology; metabolism of drugs and environmental pollutants.
Kenneth E. Palmer, PhD  
Associate Professor  
270-691-5960; kepalm02@gwise.louisville.edu

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  
502-852-7424; pierce@louisville.edu

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
502-852-5579; rowell@louisville.edu

Research Interests

Neuropharmacology; effect of drugs on brain neurotransmitters and receptors.

Uma Sankar, PhD
Assistant Professor
270-691-5957
u0sank01@gwise.louisville.edu

Research Interests

Role of calcium/calmodulin-dependent protein kinase signaling in hematopoetic stem cell biology and cancer.
Zhao-Hui (Joe) Song, PhD  
Professor  
502-852-5160;  z0song01@gwise.louisville.edu

**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  
502-852-5347;  jcestates@louisville.edu

**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
502-852-5163; lcwait01@gwise.louisville.edu

Research Interests

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

Walter M. Williams, MD, PhD
Professor
502-852-5348; wmwill01@gwise.louisville.edu

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
502-852-5760; gra@louisville.edu

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
502-852-5245; ssbarv01@gwise.louisville.edu

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  
502-852-4883; aruni@louisville.edu  
www.louisville.edu/medschool/medicine/cardiology/Bhatnagar.htm

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  
502-852-7503; h0bodd01@gwise.louisville.edu

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
502-852-3402; jasonchesney@louisville.edu

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
502-852-3346; al.cunningham@louisville.edu

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  
502-852-1075; eatonredox@aol.com

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  
502-852-2655; pnepst01@gwise.louisville.edu

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  
502-629-6950; richard.goldstein@louisville.edu

**Research Interests**

Surgical endocrinology; surgical oncology.

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Evelyne Gozal, PhD  
Associate Professor of Pediatrics and Associate Professor of Pharmacology and Toxicology  
502-852-2213; e0goza01@gwise.louisville.edu

**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 and Endowed Chair of Neurological Surgery and Professor of Pharmacology & Toxicology  
502-852-8058; theo.hagg@louisville.edu  
www.kscirc.org/hagg/Hagg.html

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, PhD  
Associate Professor of Neurological Surgery  
Associate Professor of Pharmacology and Toxicology  
Endowed Professor of Molecular Signaling  
502-852-3619; m0hetm01@gwise.louisville.edu

Research Interests
Role of signaling kinases in neuronal repair and demise.
Chi Li, PhD
Assistant Professor of Medicine and Assistant Professor of Pharmacology and Toxicology
502-852-0600; chi.li@louisville.edu

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 Lebby Professor of Parkinson Disease Research
502-561-3025; i.litvan@louisville.edu
http://louisville.edu/medschool/neurology/faculty/litvan/contact-dr-litvan

Research Interests
Etiology and treatment of Parkinsonian, Dementia, and Dystonia movement disorders.
Manuel Martinez, MD
Professor of Medicine and Professor of Pharmacology and Toxicology
Executive Vice President for Research
502-852-8373; m0mart10@gwise.louisville.edu

Research Interests

Hypertension and its effects on the kidney.

Craig J. McClain, MD
Professor of Medicine and Professor of Pharmacology and Toxicology
Vice President for Translational Research
502-852-6189; craig.mcclain@louisville.edu

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 and Professor of Pharmacology and Toxicology
502-852-5447; kmmcma01@gwise.louisville.edu

Research Interests


Donald M. Miller, MD, PhD
James Graham Brown Professor of Medicine Professor of Pharmacology and Toxicology Director, James Graham Brown Cancer Center James Graham Brown Foundation Chair 502-562-4369; donaldmi@ulh.org

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
502-852-5875; chin.ng@louisville.edu

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 and Professor of Pharmacology and Toxicology
502-852-7507; pisano@louisville.edu

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  
502-852-3720; gerodgers@pol.net

Research Interests

Toxicokinetics in drug overdoses and pharmacokinetics in pediatric disease states.

Janice E. Sullivan, MD  
Professor of Pediatrics and Professor of Pharmacology and Toxicology  
502-852-3720; sully@louisville.edu

Research Interests

Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.
Yang Wang, MD, PhD
Associate Professor of Pediatrics and Associate Professor of Pharmacology and Toxicology
502-852-8420; y.wang@louisville.edu

Research Interests

Molecular and cellular regulation of genes implicated in hypoxic/ischemic injury and protection in the cardiovascular system.

Brian (Binks) W. Wattenberg, PhD
Associate Professor of Medicine and Associate Professor of Pharmacology & Toxicology

Research Interests

Sphingosine-kinase and lipid signaling. Trafficking of tail-anchored proteins.
Hong Ye, PhD  
Assistant Professor of Medicine and Assistant Professor of Pharmacology and Toxicology  
502-852-4047; hong.ye@louisville.edu

**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  
502-852-2579; w0zach01@gwise.louisville.edu

**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.
Wayne S. Zundel, PhD
Assistant Professor of Radiation Oncology and Assistant Professor of Pharmacology and Toxicology
502-852-3445; wzund01@gwise.louisville.edu

Research Interests
Molecular oncology.

V. FACULTY WITH ASSOCIATE, EMERITUS & ADJUNCT APPOINTMENTS

Michael E. Brier, PhD
Professor of Medicine

Lu Cai, MD, PhD
Associate Professor of Pediatrics and Radiation Oncology
Daniel J. Conklin, PhD
Associate Professor of Medicine (Cardiology)

Teresa Whai-Mei Fan, PhD
Professor of Chemistry

C. William Helm, MD
Associate Professor of Obstetrics, Gynecology and Women’s Health
James W. Lillard, Jr. PhD, MBA
Associate Professor of Microbiology & Immunology
Smith & Lucile Gibson Endowed Chair in Medicine

David A. Scott, PhD
Associate Professor of Periodontics, Endodontics & Dental Hygiene

David J. Tollerud, MD
Professor of Environmental and Occupational Health
FACULTY LISTINGS

Faculty with Primary Appointments

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

- **Benz, Frederick W.**, Professor; Ph.D., Pharmacology, University of Iowa (1970).

- **Cai, Jian**, Assistant Professor; Ph.D., Pharmacology and Toxicology, University of Louisville (1999).

- **Chen, Theresa S.**, Professor; Ph.D., Pharmacology, University of Louisville (1971).

- **Davis, Keith R., Professor**; Ph.D., Molecular, Cellular and Developmental Biology, University of Colorado (1985)

- **Gupta, Ramesh**, Professor and Agnes Brown Duggan Chair of Oncological Research; Ph.D. Analytical/Physical Chemistry, University of Roorkee (1972).

- **Hein, David W.**, Peter K. Knoefel Professor and Chair; Ph.D., Pharmacology, University of Michigan (1982).

- **Hurst, Harrell E.**, Professor; Ph.D., Toxicology, University of Kentucky (1978).

- **Kang, Y. James**, Professor; Ph.D., Cell Biology and Zoology, Iowa State University (1989).

- **Kidd, LaCreis R.**, Assistant Professor, Ph.D., Toxicology, Massachusetts Institute of Technology (1997).

- **Matoba, Nobuyuki**, Assistant Professor, Ph.D., Applied Life Sciences, Kyoto University, Japan (2001).

- **McGregor, W. Glenn**, Professor; M.D., University of Michigan (1976).

- **Myers, Steven R.**, Associate Professor; Ph.D., Pharmacology, University of Kentucky (1986).

- **Nerland, Donald E.**, Professor; Ph.D., Medicinal Chemistry, University of Kansas (1974).

- **Palmer, Kenneth E., Associate Professor**; Ph.D., Microbiology, University of Cape Town (1997)
- **Pierce, William M., Jr.**, Professor; Ph.D., Pharmacology and Toxicology, University of Louisville (1981).

- **Rowell, Peter P.**, Professor and Vice Chair for Graduate Education; Ph.D., Pharmacology and Therapeutics, University of Florida (1975).

- **Sankar, Uma**, Assistant Professor, Ph.D., MCD Biology, Ohio State University (2003).

- **Song, Zhao-Hui (Joe)**, Associate Professor; Ph.D., Pharmacology, University of Minnesota (1992).

- **States, J. Christopher**, Professor; Ph.D., Molecular Biology and Pathology, Albany Medical College/Union University (1980).

- **Waite, Leonard C.**, Professor and Vice Chair for Professional Education; Ph.D., Pharmacology, University of Missouri (1969).

- **Williams, Walter M.**, Professor; Ph.D., Pharmacology, University of Louisville (1970); M.D., University of Louisville (1974).

**Faculty with Joint Appointments**

- **Aronoff, George R.**, Professor of Medicine, and Pharmacology and Toxicology; M.D., Indiana University (1975).

- **Barve, Shirish**, Professor of Medicine (Gastroenterology), and Pharmacology and Toxicology; Ph.D., Molecular Pathogenesis, University of Kentucky (1990).

- **Bhatnagar, Aruni**, Professor of Medicine (Cardiology), and Pharmacology and Toxicology; Ph.D., Chemistry, University of Kanpur (1985).

- **Bodduluri, Hari**, Professor of Microbiology and Immunology, and Pharmacology and Toxicology; Ph.D., Biochemistry, Indian Institute of Science (1983).

- **Chesney, Jason A.**, Associate Professor of Medicine (Hematology/Oncology), and Pharmacology and Toxicology; Ph.D., Biomedical Sciences/Immunology, University of Minnesota (1997); M.D., University of Minnesota (1998).

- **Eaton, John W.**, James Graham Brown Professor of Cancer Biology, Department of Medicine, and Professor of Pharmacology and Toxicology; Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969).

- **Epstein, Paul N.**, Carol B. McFerran Chair in Pediatric Diabetes Research and Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Pharmacology, Baylor College of Medicine (1981).
• **Goldstein, Richard E.**, Professor of Surgery, and Pharmacology and Toxicology; M.D., Thomas Jefferson University (1982); Ph.D., Molecular Physiology and Biophysics, Vanderbilt University School of Medicine (1994).

• **Gozal, David**, Children’s Hospital Foundation Pediatric Research Chair, Professor of Pediatrics, and Pharmacology and Toxicology; M.D., Hebrew University of Jerusalem, Hadassah Medical School (1979).

• **Gozal, Evelyne**, Associate Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Toxicology, University of Southern California (1997).

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

• **Hetman, Michal**, Associate Professor of Neurological Surgery, and Pharmacology and Toxicology; M.D., Warsaw Medical School (1994); Ph.D., Experimental and Clinical Medicine, Polish Academy of Sciences (1997).

• **Li, Chi**, Assistant Professor of Medicine (Hematology/Oncology) and Pharmacology and Toxicology; Ph.D, Molecular Biology, Columbia University (1998)

• **McClain, Craig J.**, Professor of Medicine (Gastroenterology), and Pharmacology and Toxicology; M.D., University of Tennessee-Memphis (1972).

• **McMasters, Kelly M.**, Professor of Surgery, and Pharmacology and Toxicology; Ph.D., Cell and Developmental Biology, Rutgers University (1988); M.D., UMDNJ R.W. Johnson Medical School (1989).

• **Martinez-Maldonado, Manuel**, Professor of Medicine, and Pharmacology and Toxicology, M.D., Temple Medical School (1961).

• **Miller, Donald M.**, James Graham Brown Professor of Oncology, and Professor of Pharmacology and Toxicology; M.D., Duke University (1973); Ph.D., Biochemistry, Duke University (1973).

• **Pisano, M. Michele**, Professor of Molecular, Cellular and Craniofacial Biology, and Pharmacology and Toxicology; Ph.D., Anatomy, Thomas Jefferson University (1985).

• **Rodgers, George C., Jr.**, Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Organic Chemistry, Yale University (1964); M.D., State University of New York (1975).

• **Sullivan, Janice E.**, Professor of Pediatrics, and Pharmacology and Toxicology; M.D., University of Minnesota (1988).
• **Wang, Yang**, Associate Professor of Pediatrics, and Pharmacology and Toxicology; M.D., Jiangxi Medical College (1982); Ph.D., Physiology, University of Toronto (1993).

• **Wattenberg, Brian (Binks) W.** Associate Professor of Medicine (Hematology/Oncology), and Pharmacology and Toxicology; Ph.D., Biological Chemistry, Washington University (1981)

• **Ye, Hong**, Assistant Professor of Medicine (Hematology/Oncology), and Pharmacology and Toxicology; Ph.D., Biophysics, Keele University (1998).

• **Zacharias, Wolfgang**, Professor of Medicine (Oncology), and Pharmacology and Toxicology; Ph.D., Biochemistry, Philipps-University, Marburg, Germany (1980).

• **Zundel, Wayne S.**, Assistant Professor of Radiation Oncology, and Pharmacology and Toxicology; Ph.D., Cancer Biology, Stanford University (2000).

**Faculty with Associate Appointments**

• **Brier, Michael E.**, Professor of Medicine; Ph.D., Industrial and Physical Pharmacy, Purdue University (1986).

• **Cai, Lu**, Associate Professor of Pediatrics and Radiation Oncology; Ph.D., Radiation Biology/Oncology, Norman Bethune University of Medical Sciences (1987).

• **Conklin, Daniel J.**, Associate Professor of Medicine (Cardiology); Ph.D., University of Notre Dame (1995).

• **Fan, Teresa**, Professor of Chemistry, Ph.D., Biochemistry, University of California-Davis (1983).

• **Helm, Cyril William**, Associate Professor of Obstetrics and Gynecology, Division of Gynecologic Oncology; MB, BChir, Cambridge University (1977).

• **Lillard, James**, Professor of Microbiology and Immunology; Ph.D., Microbiology and Immunology, University of Kentucky (1999).

• **Scott, David A.**, Associate Professor of Periodontics, Endodontics & Dental Hygiene: Ph.D., Microbiology and Immunology, McGill University (1997)

• **Tollerud, David J.**, Professor of Environmental and Occupational Health Sciences; M.D., Mayo Medical School (1978); M.P.H., Harvard Medical School (1990).
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).
- **Zimmerman, Thom J.**, Professor Emeritus of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Florida (1976); M.D., University of Illinois (1968).

Faculty with Adjunct Appointments

- **Friedman, Marvin A.**, Adjunct Professor of Pharmacology and Toxicology; Ph.D., Massachusetts Institute of Technology (1967).
- **Hayes, A. Wallace**, Adjunct Professor of Pharmacology and Toxicology; Ph.D., Auburn University (1967).
- **Hong, Jun-Yan**, Adjunct Professor of Pharmacology and Toxicology; Ph.D., University of Medicine and Dentistry of New Jersey (1987).
- **Wang, Yang**, Adjunct Associate Professor of Pharmacology and Toxicology; M.D., Jiangxi Medical College (1982); Ph.D., Physiology, University of Toronto (1993).

Office Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Carpenter, Sharon</td>
<td>Administrative Assistant</td>
</tr>
<tr>
<td>Greca, Edie</td>
<td>Unit Business Manager</td>
</tr>
<tr>
<td>McClain, Marion</td>
<td>Research Facilitator</td>
</tr>
<tr>
<td>Rubin-Teitel, Heddy</td>
<td>Administrative Assistant</td>
</tr>
<tr>
<td>Tatum, Shiloh</td>
<td>Unit Business Manager</td>
</tr>
</tbody>
</table>
### Graduate Students

**Name**

Adcock, Scott  
Arnold, Shelia  
Bagshaw, Isabelle  
Baldauf, Keegan  
Bansal, Shyam Sunder  
Barton, Chris  
Belshoff, Alex  
Bourcy, Katie  
Cao, Pengxiao  
Chambers, Elana  
Cheng, Pei-Hsin (Penny)  
Eno, Colins  
Hallgren, Justin  
Kaiser, Philip  
Komguem Kamga, Christelle  
Kumar, Pritesh  
Lasnik, Amanda  
Lavender, Nicole  
Leggett, Carmine  
Mathews, Stephanie  
Menchu, Mildred  
Millner, Lori  
Moghe, Akshata  
Moktar, Afsoon  
Mosley, LaSharon  
Muenyi, Clarisse  
Ngalame Ntube, Nini Olive  
Nzimulinda, Jean-Claude  
Patil, Madhuvanti  
Philipose, John  
Rogers, Erica  
Russell, Gilandra  
Schmidt, Robin  
Stallons, L Jay  
Swearingen, Lindsay  
Wang, Jianxun  
Wu, Huihui  
Yang, Lu  
Zajack, Matt
Postdoctoral Fellows

Juliane Arteel
Xiang Ding
Calvin Kouokam
Zhuanhong Qiao
Li Zhan

New Graduate Students

Baldauf, Keegan
Barton, Chris
Belshoff, Alex
Hallgren, Justin
Kumar, Pritesh
Swearingen, Lindsay
Wu, Huihui

Graduates

<table>
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<tr>
<th>Graduate</th>
<th>Degree</th>
<th>Mentor</th>
<th>Dissertation/Thesis Title</th>
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<tr>
<td>LaSharon D. Mosley</td>
<td>Ph.D.</td>
<td>James W. Lillard, Jr., Ph.D.</td>
<td>Mechanisms mediated by CXCL12 signaling through CXCR4 and CXCR7 in breast cancer</td>
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<td>J. Phillip Kaiser</td>
<td>Ph.D.</td>
<td>Gavin E. Arteel, Ph.D.</td>
<td>The role of PKC-epsilon in models of alcohol- and toxin-induced liver disease</td>
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<td>Ntube Nini Olive Ngalame</td>
<td>M.S.</td>
<td>J. Christopher States, Ph.D.</td>
<td>Arsenic-induced developmental changes in the liver and adult cardiovascular disease</td>
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<td>Pengxiao Cao</td>
<td>M.S.</td>
<td>Ramesh C. Gupta, Ph.D.</td>
<td>Effect of green tea catehins and hydrolysable tannins on benzo[a]pyrene-induced DNA adducts and structure activity relationship</td>
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<td>Shyam Sunder Bansal</td>
<td>M.S.</td>
<td>Ramesh C. Gupta, Ph.D.</td>
<td>A novel implantable drug delivery system of curcumin for cancer chemoprevention</td>
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<td>Jean-Claude Nzimulinda</td>
<td>Ph.D.</td>
<td>Zhao-Hui (Joe) Song, Ph.D.</td>
<td>Ligand binding, activation, and dimerization of CB2 cannabinoid receptor</td>
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</table>


**E-pub:**


**In Press:**


ABSTRACTS

Gavin Arteel:


Local/Regional


Frederick Benz:

Jian Cai:


Theresa Chen


Keith Davis:


Ramesh Gupta:


**David Hein:**


splicing Proceedings of the 8th Annual James Graham Brown Cancer Center Retreat, Abstract #5, Louisville, Kentucky, November 2009.


**Y. J. Kang**


**LaCreis Kidd**


Nobuyuki Matoba


W. Glenn McGregor

Abstracts at international meetings, with published abstract
1. Stallons, L.J., Kalbfleisch, T., and McGregor, W.G. Cell death and cell cycle pathways as potential targets for tumor suppression by pol iota: a systems biology approach. Environmental Mutagen Society, Atlanta GA October 2009. (LJS won a travel award and was invited to give a platform presentation).


Abstracts at local or regional meetings


Steven Myers


**Donald Nerland:**


**Kenneth Palmer:**

**Uma Sankar:**

1. Cary, R. and Sankar U. “Regulation of stem cell proliferation by a pro-quiescence kinase”. 95th Annual Meeting of the Kentucky Academy of Sciences, November 13-14, Northern Kentucky University, Highland Heights, KY

2. McQuerry K. and Sankar U. “CaMKII Antagonizes CaMKIV to Enable Leukemia Cell Poliferation” Research! Louisville, October, 2009, Louisville, KY


**Zhao-Hui (Joe) Song**


**J. Christopher States:**


2. Rogers EN, Jiang GH, States J. Curcumin regulates cell cycle progression and DNA repair proteins in a p53 - dependent manner. Program No. 1084, 2009 Itinerary Planner, Baltimore, MD: Society of Toxicology


4. Ngalame NN, Arteel JI, Arteel GE, States J. Transplacental exposure to arsenic induces hepatic changes in ApoE - / - mice. Program No. 2099, 2009 Itinerary Planner, Baltimore, MD:
Society of Toxicology

5. States VA, Masters JH, Muenyi CS, States J, Helm C. Mouse model for treating metastatic human ovarian cancer with hyperthermic intraperitoneal chemotherapy. Program No. 2176, 2009 Itinerary Planner, Baltimore, MD: Society of Toxicology


RESEARCH GRANTS FUNDED

<table>
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<tr>
<th>Agency/Number</th>
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<th>Role</th>
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<td>RC2 AA019385</td>
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<td>Diehl</td>
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<td>Nagy (Case-Western)</td>
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<td><strong>Frederick Benz</strong></td>
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<td>DOD/W81XWH-08-1-0047</td>
<td>High Technology Mass Spectrometry Laboratory</td>
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<td><strong>Jian Cai</strong></td>
<td>Pharmacodynamics of Bone Targeted Drugs. Part B</td>
<td>PI</td>
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<td>8/07-7/12</td>
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<td>Jones</td>
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<td><strong>Theresa Chen</strong></td>
<td>S-adenosylhomocysteine and S-adenosylmethionine in alcoholic liver disease</td>
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<td>NIDCR R03 DE019177</td>
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<td>Oz (UK)</td>
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<td>Podocytes and oxidative stress in diabetic kidney</td>
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<td><strong>Keith Davis</strong></td>
<td>Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems</td>
<td>PI</td>
<td>Davis</td>
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<td>DoD/USAMRMC</td>
<td>Development of the Soybean-Derived Peptide Lunasin as a Chemoprevention Agent</td>
<td>PI</td>
<td>Davis</td>
<td>4/01-3/31/09</td>
<td>$53,550</td>
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<td>Soybean Promotion Board</td>
<td>Production of High-Value Cellulase from Tobacco</td>
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<td>Berson</td>
<td>10/1-3/31/11</td>
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<td><strong>Ramesh Gupta</strong></td>
<td>Breast Cancer Chemoprevention Strategies</td>
<td>PI</td>
<td>Gupta</td>
<td>04/07 - 03/11</td>
<td>$1,416,820</td>
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<td>NCI CA-118114</td>
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<td>Gupta</td>
<td>07/07 - 06/12</td>
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<td>NCI CA-125152</td>
<td>Effect of estrogen on polycyclic aromatic hydrocarbon (PAH)-mediated lung cancer</td>
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<td>09/07 - 08/10</td>
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<td>KY Lung Cancer Res. Board</td>
<td>Administrative supplement to “Breast Cancer Chemoprevention Potential of Common spices”</td>
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<td>06/08-05/10</td>
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<td>08/09-07/10</td>
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<td><strong>David Hein</strong></td>
<td>Pharmacogenetics of drug and carcinogen metabolism</td>
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<td>07/01/2003 – 06/30/2010</td>
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<td>NCI R01-CA034627</td>
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<td>PI</td>
<td>Hein</td>
<td>07/01/2004 - 06/30/2009</td>
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<td>NIH/NIEHS (T32 ES011564)</td>
<td>NAT1 and NAT2 Genotype</td>
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<td>Determinations in Cancer Patients &amp; Controls</td>
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<td>NIEHS T35 ES014559</td>
<td>12/31/2009</td>
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<td>Nashville Breast Health Study</td>
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<td>05/03/2007 – 04/30/2009</td>
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<td>NIH (P30-ES014443)</td>
<td>06/04/2007 – 03/31/2011</td>
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<td>A pharmacogenetic approach to prostate cancer susceptibility</td>
<td>Kidd</td>
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<td>NCI(R03-CA128028)</td>
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<td>NAT1 and NAT2 Metabolism Studies with Hair Dye Arylamines</td>
<td>Hein</td>
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<td>07/29/2007 – 07/01/2009</td>
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<td>Polymorphic genes of detoxification enzymes as risk factors for PSP</td>
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<td>Breast cancer prevention strategies</td>
<td>R. Gupta</td>
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<td>NIH NCI 1R01CA118114</td>
<td>04/01/2007 – 02/28/2011</td>
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<td>Breast cancer prevention role of common spices</td>
<td>R. Gupta</td>
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<td>Air toxics monitoring and risk management program</td>
<td>R. Barnett (KY DNR)</td>
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<td>07/01/2008 – 06/30/2009</td>
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<td>Oxidative stress and heart failure by copper restriction</td>
<td>Kang</td>
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<td>Nobuyuki Matoba</td>
<td>Expression of Deconstructed Virus-Like Particles in Bioengineered Plants.</td>
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<td>03/15/07-02/28/10</td>
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<td>W. Glenn McGregor</td>
<td>Mutagenesis as a novel target for cancer prevention</td>
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<td>Steven Myers</td>
<td>Development of small molecule inhibitors of skin carcinogenesis</td>
<td>PI McGregor</td>
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<td>Steven Myers</td>
<td>Measuring prenatal tobacco exposure in newborn blood spots</td>
<td>Co-I J. Yang (U-CA)</td>
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<td><strong>Donald Nerland</strong></td>
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<td><strong>Kenneth Palmer</strong></td>
<td>NIH/ R-01 Al076169</td>
<td>Antiviral Lectins as Microbicides</td>
<td>PI</td>
<td>Palmer</td>
<td>04/15/2008 – 03/31/2012</td>
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<td>NIH/ R01 Al076169 Supplement</td>
<td>Antiviral Lectins as Microbicides</td>
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<td>Palmer</td>
<td>09/15/2009 – 08/31/2010</td>
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<td>Starpharma Ltd/IB081330</td>
<td>Evaluation of viral entry-inhibitory activity of SPL7013 against human genital papillomavirus types</td>
<td>PI</td>
<td>Palmer</td>
<td>09/01/2008 – 02/28/2009</td>
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<td>Advanced Cancer Therapeutics/OICB080771</td>
<td>Preclinical research on HPV vaccine candidate OCRP3302</td>
<td>PI</td>
<td>Palmer</td>
<td>10/01/2008 – 06/19/2009</td>
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<td><strong>William Pierce</strong></td>
<td>NIEHS 1P01ES011860-01A19001</td>
<td>Cardiovascular Toxicity of Environmental Aldehydes</td>
<td>Co-I</td>
<td>Bhatnagar, A.</td>
<td>2003 - 2009</td>
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<td>Department of Defense US Army W81XWH-08-1-0047</td>
<td>High Technology Mass Spectrometry Laboratory</td>
<td>PI</td>
<td>Pierce - Benz</td>
<td>2008 - 2010</td>
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<td><strong>Uma Sankar</strong></td>
<td>NIH/ R-01 Al076169</td>
<td>Antiviral Lectins as Microbicides</td>
<td>Co-I</td>
<td>Palmer</td>
<td>04/15/2008 – 03/31/2012</td>
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<td></td>
<td>UofL SOM Basic Grant</td>
<td>Hematopoietic Stem Cells as Targets of Cadmium Toxicity</td>
<td>PI</td>
<td>Sankar</td>
<td>04/01/09-03/31/10</td>
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<td>Brown Cancer Center Pilot Grant</td>
<td>Role of impaired calmodulin dependent protein kinase signaling in lung cancer</td>
<td>PI</td>
<td>Sankar</td>
<td>04/01/07 – 03/31/10</td>
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<td><strong>Zhao-Hui (Joe) Song</strong></td>
<td>R01DA11551-09</td>
<td>Structure and Function of CB2 Cannabinoid Receptor</td>
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<td>Song</td>
<td>5/1/04-4/30/10</td>
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<td>R01 DA11551-09S1</td>
<td>Structure and Function of CB2 Cannabinoid Receptor (minority supplement for Jean-Claude Nzimulinda)</td>
<td>PI</td>
<td>Song</td>
<td>5/1/07-4/30/09</td>
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<td>R01EY13632</td>
<td>Cannabinoid Receptors-Potential Targets for Novel Antiglaucoma Drugs</td>
<td>PI</td>
<td>Song</td>
<td>8/1/09-7/31/11</td>
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<td>T32ES11564</td>
<td>UofL Environmental Health Sciences Training Program</td>
<td>Mentor</td>
<td>Hein</td>
<td>07/01/2004 - 06/30/2009</td>
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<td><strong>J. Christopher States</strong></td>
<td>NIH-NIEHS, R21ES015812</td>
<td>Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease</td>
<td>PI</td>
<td>States</td>
<td>4/1/08 – 3/31/10</td>
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<td>NIH-NIEHS, R01ES011314-05</td>
<td>Arsenic Induced Miotic Arrest Associated Apoptosis</td>
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<td>8/1/03 – 4/30/10</td>
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<td>NIH-NIEHS,</td>
<td>Arsenic Induced Miotic Arrest</td>
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<td>NIH-NIEHS, R01ES011314-05S1</td>
<td>Associated Apoptosis</td>
<td>Deputy Director</td>
<td>Ramos</td>
<td>06/04/07 - 03/31/11</td>
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<td>NIH-NIEHS, R21ES016367</td>
<td>Priming of liver disease by arsenic exposure</td>
<td>Co-I</td>
<td>Arteel</td>
<td>05/01/09 – 04/30/11</td>
<td>$440,000</td>
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<td>NIH-NIEHS, R01ES017260</td>
<td>Atherogenic Mechanisms of Arsenic Exposure Assessment</td>
<td>Co-I</td>
<td>Srivastava</td>
<td>06/15/09 – 03/31/14</td>
<td>$1,665,000</td>
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<td>Indo-U.S. Science and Technology Forum</td>
<td>14th All India Congress of Cytology and Genetics and Fogarty International Workshop on Molecular Epidemiology, Environmental Health and Arsenic Exposure Assessment</td>
<td>Co-PI</td>
<td>Giri, States</td>
<td>12/2009</td>
<td>$10,000</td>
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<td>NIH-NIEHS, T32ES011564</td>
<td>UofL Environmental Health Sciences Training Program</td>
<td>Mentor</td>
<td>Hein</td>
<td>07/01/04 – 06/30/09; 07/01/09-06/30/14</td>
<td>$697,188; $2,037,745</td>
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<td>NIH-NIEHS, T35ES014559</td>
<td>Summer Environmental Health Sciences Training Program</td>
<td>Mentor</td>
<td>Prough</td>
<td>04/01/06 – 03/31/11</td>
<td>$158,355</td>
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<td>NIH-NIEHS, F31ES016719</td>
<td>Curcumin inhibits BPDE-induced damage by lowering the threshold of p53 activation</td>
<td>Mentor</td>
<td>Rogers</td>
<td>05/01/2008 – 03/31/2011</td>
<td>$78,157</td>
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<td>CEGIB / SoMRC</td>
<td>miRNA Biomarkerz for Ovarian Cancer</td>
<td>Co-I</td>
<td>Helm</td>
<td>1/1/2009 – 12/31/2009</td>
<td>$80,000 ($60K + $20K match)</td>
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**RESEARCH GRANTS SUBMITTED**

**Gavin Arteel**

- **NIDDK**
  - A novel therapeutic antibody for hepatic fibrosis
  - Subcon. PI
  - Staunton (CisThera, Inc.)
  - Start Date: 10/01/09 - 03/30/11
  - Amount: $85,544

- **NIAAA T32 application**
  - University of Louisville's Alcohol Research Training Program
  - Co-I and Mentor
  - McClain
  - Start Date: 04/01/10 - 03/31/15
  - Amount: $783,466

- **S10 RR026419**
  - Louisville Cellomics
  - PI
  - Arteel
  - Start Date: 04/01/10 - 03/31/11
  - Amount: $213,917

**Theresa Chen**

- **CCFA**
  - IBD related pregnancy complications and innovative antioxidants therapeutic modalities.
  - Co-PI

- **NCCAM R21 NIH**
  - Pregnancy complications in inflammatory bowel disease: innovative antioxidant therapies.
  - Co-PI

**Keith Davis**

- **NIH/3R01CA096997-04S1 (MPI)**
  - A HER-2/neu pulsed DC1 vaccine for patients with DCIS
  - Co-PI
  - Brian Czerniecki
  - U. Penn.
  - Start Date: 7/1/09 to 6/30/11
  - Amount: $2,963,392

- **NIH/1C06RR030456-01**
  - Expanded Research Facilities for the Owensboro Cancer Research Program
  - PI
  - Keith Davis
  - Start Date: 4/1/10 to 3/31/14
  - Amount: $7,222,310

- **Komen for the Cure**
  - Development of Vaccines for Breast Cancer
  - Co-I
  - Brian
  - Start Date: 5/1/10 to 5/1/11
  - Subaward Budget
<table>
<thead>
<tr>
<th>Organization</th>
<th>Project Title</th>
<th>Principal Investigator</th>
<th>Institution</th>
<th>Start Date</th>
<th>End Date</th>
<th>Funding (USD)</th>
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<tr>
<td>Alpha-1 Foundation</td>
<td>Production of Alpha-1 Antitrypsin using Scalable Plant-based Expression (LOI) (Have been invited to submit full proposal for 2010 competition)</td>
<td>Keith Davis</td>
<td>U, Penn.</td>
<td>7/1/10 to 6/30/11</td>
<td>$40,000</td>
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<td>U of L Clinical and Translational Science Pilot Grant</td>
<td>Development of the Soy Peptide Lunasin as a Chemoprevention Agent</td>
<td>Keith Davis</td>
<td>3/1/10 to 2/28/11</td>
<td>$89,122</td>
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<td><strong>Ramesh Gupta</strong></td>
<td>Molecular Targets for Prevention of Lung Cancer by Phytonutrients in Berries</td>
<td>Gupta</td>
<td>07/10-06/15</td>
<td>$3,080,000</td>
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<td>Cervical Cancer Chemoprevention Strategies</td>
<td>Gupta</td>
<td>04/10-03/15</td>
<td>$2,102,077</td>
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<td>Molecular Targets for Berries-Mediated Breast Cancer Prevention</td>
<td>Gupta</td>
<td>11/10-06/15</td>
<td>$2,376,112</td>
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<td>Terpenoids for Prophylactic Treatment of Lung Cancer</td>
<td>Gupta</td>
<td>04/10-10/12</td>
<td>$297,580</td>
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<td>Prophylactic Treatment of Cervical Cancer by Target Delivery</td>
<td>Gupta</td>
<td>04/10-03/11</td>
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<td>Prevention and Treatment of Cervical Cancer by Novel Target Delivery Device</td>
<td>Gupta</td>
<td>04/10-03/11</td>
<td>$1,195,250</td>
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<td>University of Louisville SPORE in Lung Cancer Project Leader</td>
<td>Chesney</td>
<td>10/09-09/14</td>
<td>$935,363</td>
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<td>University of Louisville Botanicals Research Center (UofL BRC) for Health Benefits</td>
<td>Gupta</td>
<td>07/10-06/15</td>
<td>Pre-application</td>
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<td><strong>David Hein</strong></td>
<td>Understanding and predicting individual cancer risk</td>
<td>Hein</td>
<td>01/01/2010 – 12/31/2010</td>
<td>$50,000</td>
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<td>Role of NAT1*10 haplotype in cancer risk from tobacco carcinogens</td>
<td>Hein</td>
<td>10/01/2009 11/30/2011</td>
<td>$149,996</td>
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<td>Pharmacogenetics of drug and carcinogen metabolism</td>
<td>Hein</td>
<td>04/01/2010 - 05/15/2015</td>
<td>$1,850,000</td>
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<td>UofL Alcohol Research Training Program</td>
<td>McClain</td>
<td>04/01/10-03/31/15</td>
<td>$783,466</td>
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<td>Pharmacogenetics of drug and carcinogen metabolism</td>
<td>Hein</td>
<td>07/01/2009 – 06/30/2010</td>
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<td>University of Louisville’s Clinical and Translational Sciences Institute</td>
<td>McClain</td>
<td>07/01/2010 - 06/30/2015</td>
<td>$20,000,000</td>
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<td>Genetic and epigenetic biomarkers of hepatocellular carcinoma</td>
<td>Hein</td>
<td>03/01/2010 – 02/28/2011</td>
<td>$225,552</td>
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<td><strong>Research Pilot Program</strong></td>
<td><strong>Y. J. Kang</strong></td>
<td><strong>NIH-NHLBI, 1R01 HL101248</strong></td>
<td>Mitochondrial Dysfunction in heart hypertrophy</td>
<td>PI</td>
<td>4 years</td>
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<td><strong>LaCresi Kidd</strong></td>
<td><strong>Winship Cancer Institute of Emory University</strong></td>
<td>Molecular Pathways and Biomarker (MPB) program: Innate Immunity Markers as Predictors of PCa Outcomes</td>
<td>Co-I Kimbro</td>
<td>01/01/10-12/31/10</td>
<td>$25,000</td>
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<td><strong>NIH PAR-09-161</strong></td>
<td><strong>NIH</strong></td>
<td>Co-PI Kimbro/Kidd</td>
<td>U01 Basic Cancer Research in Cancer Health Disparities: Innate Immunity Predictors of Prostate Cancer Outcomes &amp; Disparities</td>
<td>07/01/2010-6/30/15</td>
<td>$1,902,536</td>
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<td><strong>Nobuyuki Matoba</strong></td>
<td><strong>SERCEB</strong></td>
<td>PI Matoba</td>
<td>A mucosal vaccine targeting surface high-mannose glycans on EID/BD viruses.</td>
<td>03/01/09 – 02/28/11</td>
<td>$200,000 (total direct costs) Not funded</td>
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<td><strong>Grand Challenges in Global Health/Grand Challenges Explorations Rnd 3</strong></td>
<td><strong>NIH NIAID R01</strong></td>
<td>PI Matoba</td>
<td>Developing a mucosal vaccine targeting HIV envelope glycans.</td>
<td>03/01/10 – 02/28/11</td>
<td>$100,000 (total direct costs) Not funded</td>
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<td><strong>NIH NIAID Microbicide Innovation Program V RFA (R21/R33 Phased Innovation Award)</strong></td>
<td><strong>NIH NIAID R01</strong></td>
<td>PI Matoba</td>
<td>The Novel Mannose Cluster-Targeting Anti-HIV Protein Actinohivin</td>
<td>01/01/10 – 12/31/14</td>
<td>$1,250,000 (total direct costs) Priority Score: 61 Percentile: 45</td>
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<td><strong>NIH NIAID Microbicide Innovation Program V RFA (R21/R33 Phased Innovation Award)</strong></td>
<td><strong>NIH NIAID R01</strong></td>
<td>PI Matoba</td>
<td>Plant-produced Actinohivin as a Candidate HIV Microbicide</td>
<td>04/01/10 – 03/31/15</td>
<td>$1,170,500 (total direct costs) Priority Score: 37</td>
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<td><strong>Grand Challenges in Global Health/Grand Challenges Explorations Rnd 4</strong></td>
<td><strong>UofL Clinical Translational Sciences Pilot Grant Program Basic Translational Research Award</strong></td>
<td>PI Matoba</td>
<td>Development of a mucosal vaccine against enveloped viruses.</td>
<td>05/01/10 – 04/31/11</td>
<td>$100,000 (total direct costs) Pending</td>
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<tr>
<td><strong>UofL Clinical Translational Sciences Pilot Grant Program Basic Translational Research Award</strong></td>
<td><strong>W. Glenn McGregor</strong></td>
<td>PI Matoba</td>
<td>A broad-spectrum vaccine against enveloped viruses.</td>
<td>03/01/10 – 02/28/11</td>
<td>$49,020 (total direct costs) Awarded</td>
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<tr>
<th><strong>W. Glenn McGregor</strong></th>
<th><strong>CEGIB Director’s Biomarker Award</strong></th>
<th>DNA polymerase as a putative tumor suppressor</th>
<th>PI McGregor</th>
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<tr>
<td><strong>NIH/NCI: RC1</strong></td>
<td><strong>DNA polymerase eta and benzo[a]pyrene-induced mutagenesis</strong></td>
<td>PI McGregor</td>
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<td><strong>NIH/NCI: R21</strong></td>
<td><strong>Y family DNA polymerases and cellular responses to</strong></td>
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<td>Grant Number</td>
<td>Description</td>
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<td>NIH/NCI: R21</td>
<td>The role of Y-family DNA polymerases in transplacental carcinogenesis</td>
<td>McGregor</td>
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<td>RC1HD063745-01</td>
<td>Tobacco related biomarkers of preterm labor</td>
<td>Myers</td>
<td>$666,592</td>
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<td>RC1CA149159-01</td>
<td>Application of Mass Spectrometry in the detection of carcinogen protein adducts</td>
<td>Myers</td>
<td>$554,420</td>
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<td>1S1RR029345-01</td>
<td>LQT Orbitrap XL ETD mass spectrometer</td>
<td>Myers</td>
<td>$922,377</td>
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<td>1R21 ES013304-01A1</td>
<td>Biomarkers of carcinogen exposure in tobacco smoke</td>
<td>Myers</td>
<td>$275,000</td>
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<td>R03 CA121415-01A1</td>
<td>Chemoprevention of Dibenzo(a,1)pyrene induced mammary carcinogenesis</td>
<td>Myers</td>
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<td>NIH/ AI076169</td>
<td>Antiviral lectins as microbicides</td>
<td>Palmer</td>
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<td>Gates Foundation Grand Challenges Explorations</td>
<td>Glycan targeting to protect against infectious disease</td>
<td>Palmer</td>
<td>$100,000</td>
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<td>Uma Sankar</td>
<td>Role of calmodulin-dependent protein kinases in hematopoiesis and leukemia</td>
<td>Sankar</td>
<td>$964,969</td>
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<td>NCI/RO1CA149315-01</td>
<td>Calmodulin-dependent protein kinases in hematopoiesis and leukemia</td>
<td>Sankar</td>
<td>$1,250,000</td>
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<td>UofL-IRIG-CEG</td>
<td>Calmodulin-dependent protein kinases in hematopoiesis and leukemia</td>
<td>Sankar</td>
<td>$15,000</td>
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<td>Zhao-Hui (Joe) Song</td>
<td>Assay Development for High Throughput Screening of Ligands for Novel Cannabinoid Receptor GPR55</td>
<td>Song</td>
<td>$185,000</td>
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<tr>
<td>R01 DA11551</td>
<td>ARRA Administrative Supplement for Structure and Function of CB2 Cannabinoid Receptor,</td>
<td>Song</td>
<td>$140,638</td>
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<td>J. Christopher States</td>
<td>12th Annual Midwest DNA Repair Symposium</td>
<td>States</td>
<td>$10,186</td>
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<td>NIH-NIEHS 1R13ES019025-01</td>
<td>In Utero Arsenic-exposure Induced Hepatic Dysfunction and Vascular Disease</td>
<td>States</td>
<td>$1,865,100</td>
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<tr>
<td>CDMRP-OCRPOC093257</td>
<td>Plasma microRNA Biomarker for Ovarian Cancer</td>
<td>States</td>
<td>$1,264,146</td>
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<td>NIH-NIEHS, Transplacental Arsenic Induced</td>
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<td>R21ES015812-02S1</td>
<td>Hepatic Dysfunction and Vascular Disease</td>
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<tr>
<td>NIH-NIEHS, R21ES015812-02(Comp rev)</td>
<td>Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease</td>
<td>PI States 10/1/09 – 3/31/10 $46,250</td>
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<td>NIH-NIEHS, R01ES011314-05S2</td>
<td>Arsenic Induced Miotic Arrest Associated Apoptosis</td>
<td>PI States 10/1/09 – 4/30/10 $72,754</td>
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<tr>
<td>KSEF</td>
<td>Hyperthermic Intraperitoneal Cisplatin and Arsenic for Ovarian Cancer</td>
<td>Co-I Helm 7/1/09 – 6/30/10 $50,000</td>
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**INVITED SCIENTIFIC PRESENTATIONS**

**Gavin Arteel**

- Research seminar, 01/09, “The clot thickens: New roles of fibrin homeostasis in liver disease,” Medical University of South Carolina, Dept of Pharmacology, Charleston, SC.

- Research seminar, 02/09, “New roles of fibrin homeostasis in liver disease.” University of Louisville Alcohol Research Center (ULARC) meeting, Louisville, KY.

- Research seminar, 05/09, “Life of Pai(-1): when good hypotheses go strange.” University of Louisville Dept of Pharmacology and Toxicology, Louisville, KY.

**Keith Davis**

- Development of Novel Vaccines and Therapeutics using Plant-Based Expression Systems. 2009. TATRC Product Line Review, Frederick, Maryland

- Isolation and Analysis of the Cancer-Preventive Peptide Lunasin. 2009. Plant-Based Therapeutics Symposium, Sullivan University, Louisville, Kentucky

**Ramesh Gupta**

- (Plenary Talk) EUROTOX, Dresden, Germany, September 2009

- Plenary Talk) Indian Pharmaceutical Congress (61st IPC), Ahmedabad, India, December 11-13, 2009.

- (Plenary Talk) International Symposium on Cancer Chemoprevention and Translational Research, School of Life Sciences, JNU, New Delhi, India, December 20-22, 2009.
David Hein

- *N*-acyltransferase Pharmacogenetics Modifies Individual Cancer Risk and James Graham Brown Cancer Center Research Stimulus. James Graham Brown Cancer Center, University of Louisville, Louisville, Kentucky, April 2009.


- Acetylation Status and Bladder Cancer-Should NAT2 Slow Acetylators be Sub-classified for Risk Assessments. Symposium entitled “Occupation, Aromatic Amines, Polycyclic Aromatic Hydrocarbons and Bladder Cancer, BFGA Research Institute of Occupational Medicine, Ruhr University Bochum, Germany, November 2009.

- Should We Sub-Classify Slow NAT2 Acetylator Phenotypes for Cancer Risk Assessments? Department of Molecular, Cellular, and Craniofacial Biology and The Birth Defects Center, University of Louisville, Louisville, Kentucky, November 2009.

Harrell Hurst

- Hurst, H.E. Analyses of Hemoglobin N-Valine Adducts and Headspace of (1-chloroethenyl)oxirane in Erythrocytes Indicate Selective Detoxification of Chloroprene Epoxide Enantiomers, Seminar presented at UofL School of Public Health and Information Sciences, December 9, 2009.

YJ Kang


- Oct 29, 2009, Invited Seminar, Department of Anatomy, National University of Singapore Yong Loo Lin School of Medicine, “Copper stimulation of myocardial regeneration.”

- Oct 24, 2009, Invited Plenary Lecture, West China Hospital of Sichuan University-Chinese University of Hong Kong Surgical Forum, Chengdu, China, “Regenerative Medicine.”

- Aug 14, 2009, Invited Speaker, Chinese Medical Association Guizhou Infectious Disease and Hepatology Association Annual Meeting, Kaili, Guizhou, China, “Recent discoveries in alcoholic liver disease.”

Nobuyuki Matoba

- Invited Seminar, “BioProduction of Recombinant Protein Pharmaceuticals in Plants” Iwaki Meisei University, Fukushima, Japan, June 2009.


Glenn McGregor


- New insights into the molecular mechanisms of carcinogen-induced mutagenesis in human cells. Purdue University Department of Biology, November 2009.

Kenneth Palmer


- Invited seminar at University of Louisville Regional Biosafety Laboratory. “Griffithsin as a broad-spectrum antiviral”. August 2009

Zhao-Hui (Joe) Song

-Functional proteomics of CB2 cannabinoid receptor, Department of Immunology, Peking University Medical Center, Beijing, China, August, 2009.

J Christopher States

- “Molecular Phenotype of Arsenic Sensitivity”, Molecular Targets Program, Brown Cancer Center, University of Louisville, Louisville, KY (1/15/09)

- Arsenic-induced mitotic disruption and aneuploidy. All India Congress of Cytology and Genetics, Indian Institute of Chemical Biology, Kolkata, India, December 1 – 4, 2009
- In Utero Arsenic Exposure Induced Changes In Liver Gene Expression Associated With Accelerated Atherosclerosis. PPTOXII: Role of Environmental Stressors in the Developmental Origins of Disease, Miami Beach, FL, December 7-10, 2009

**DEPARTMENTAL TEACHING**

- Medical Pharmacology course to second year medical students. Dr. Mike Williams served as course director.

- Dental Pharmacology and Therapeutics course and a Dental Review 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.

- Advanced Pharmacology course to graduate nursing students. Dr. Leonard Waite served as course director.

- Online pharmacology course in basic pharmacology for undergraduate nursing students. Dr. Myers 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 – 2009

Graduate Program Committee

Dr. William Pierce/Dr. Peter Rowell (Chair)

<table>
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<th>Student Affairs</th>
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<td>Dr. Gavin Arteel</td>
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<td>Dr. Uma Sankar (2011)</td>
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Jay Stallons/ Clarisse Muenyi (student representative)

SIBUP/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Don Nerland (2011)
Dr. Harrell Hurst (2010)
Dr. Joe Song (2009)

Teaching Evaluation Committee

Dr. Mike Williams (Chair)
Dr. Len Waite (2011)
Dr. Fred Benz (2010)
Dr. Harrell Hurst (2009)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Fred Benz (2011)
Dr. Steve Myers (2010)
Dr. Ramesh Gupta (2009)

Core Laboratories/Research Development Committee

Dr. Chris States (Chair)
Dr. Glenn McGregor (2011)
Dr. Theresa Chen (2010)
Dr. Jian Cai (2009)

Events Committee

Dr. Len Waite (Chair)
Dr. Nobuyuki Matoba (2011)
Dr. LaCreis Kidd (2010)
Dr. Glenn McGregor (2009)
Student- Phillip Kaiser

**Information Technology Committee**

Dr. Gavin Arteel
Dr. Fred Benz
Dr Harrell Hurst