

*Department of  
Pharmacology & Toxicology*

UNIVERSITY OF  
**LOUISVILLE**<sup>®</sup>  

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**SCHOOL OF MEDICINE**

*2009 Annual Report*



**Department of Pharmacology and Toxicology-2009**

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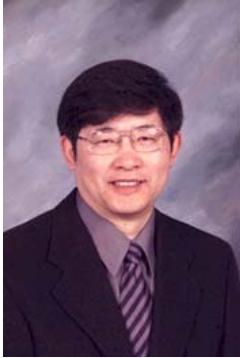
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## DEPARTMENT HIGHLIGHTS

### FACULTY APPOINTMENTS



**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.

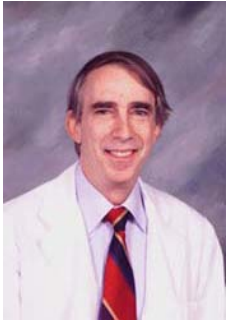
### ADMINISTRATIVE APPOINTMENTS



**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

- 3<sup>rd</sup> place, The Roger H. Herzig Junior Faculty Research Prize, James Graham Brown Cancer Center 8<sup>th</sup> 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 featured in a commentary article in the *Proceedings of the National Academy of Sciences of the USA*: Zeitlin L, Pauly M, Whaley KJ (2009) Second-generation HIV microbicides: continued development of Griffithsin. *Proc. Natl. Acad. Sci. USA* 106: 6029-30
- 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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto:d.hein@louisville.edu)

[www.louisville.edu/faculty/dwhein01](http://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](mailto: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](mailto: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.



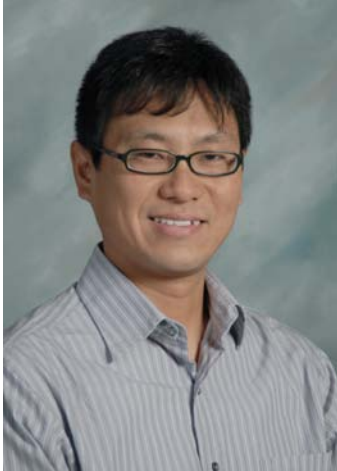
**La Creis R. Kidd, PhD, MPH**

**Assistant Professor and Our Highest Potential Endowed Chair in Cancer Research**

502-852-3465; [lrkidd01@louisville.edu](mailto: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](mailto: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; [wgmcr01@gwise.louisville.edu](mailto:wgmcr01@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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto:u0sank01@gwise.louisville.edu)

### **Research Interests**

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



**Zhao-Hui (Joe) Song, PhD**

**Professor**

502-852-5160; [z0song01@gwise.louisville.edu](mailto: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; [jcstates@louisville.edu](mailto:jcstates@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](mailto: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](mailto: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](mailto: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](mailto: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](mailto:aruni@louisville.edu)

[www.louisville.edu/medschool/medicine/cardiology/Bhatnagar.htm](http://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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto:richard.goldstein@louisville.edu)

### **Research Interests**

Surgical endocrinology; surgical oncology.



**Evelyne Gozal, PhD**  
**Associate Professor of Pediatrics and Associate Professor of Pharmacology and Toxicology**  
502-852-2213; [e0goza01@gwise.louisville.edu](mailto: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](mailto:theo.hagg@louisville.edu)

[www.kscirc.org/hagg/Hagg.html](http://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**

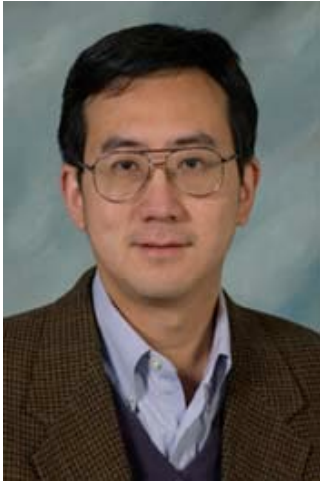
**Associate Professor of Pharmacology and Toxicology**

Endowed Professor of Molecular Signaling

502-852-3619; [m0hetm01@gwise.louisville.edu](mailto: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](mailto: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 Leiby Professor of Parkinson Disease Research**  
502-561-3025; [i.litvan@louisville.edu](mailto: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](mailto: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](mailto: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](mailto:kmmcma01@gwise.louisville.edu)

### **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  
Director, James Graham Brown Cancer Center James Graham Brown Foundation Chair**  
502-562-4369; [donaldmi@ulh.org](mailto: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](mailto: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](mailto: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; [gcrodgers@pol.net](mailto:gcrodgers@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](mailto: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](mailto: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](mailto: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](mailto: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; [w0zund01@gwise.louisville.edu](mailto:w0zund01@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 Whei-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**

<b>Name</b>	<b>Position</b>
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  
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**

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

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2. Baumgartner, K.B., Schlierf, T.J., Yang, D., Doll, M.A., and Hein, D.W.: N-acetyltransferase 2 genotype modification of active cigarette smoking on breast cancer risk among Hispanic and non-Hispanic white women. *Toxicological Sciences* 112: 211-220, 2009. [PMCID: 2782353]
3. Beier JI, Luyendyk JP, Guo L, von Montfort C, and Arteel GE. Fibrin accumulation plays a critical role in the sensitization to lipopolysaccharide-induced liver injury caused by ethanol in mice. *Hepatology* 49:1545-1553. 2009
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5. Bendaly, J., Doll, M.A., Millner, L.M., Metry, K.J., Smith, N.B., Pierce Jr., W. M., and Hein, D.W.: Differences between human slow N-acetyltransferase 2 alleles in levels of 4-aminobiphenyl-induced DNA adducts and mutations. *Mutation Research* 671: 13-19, 2009. [PMCID: 2783811]
6. Blomeke, B., Brans, R., Coenraads, P.-J., Dickel, H., Bruckner, T., Hein, D.W., Heesen, M., Merk, H.-F., and Kawakubo, Y.: Para-phenylenediamine and allergic sensitization: risk modification by N-acetyltransferase 1 and 2 genotypes. *British Journal of Dermatology* 161: 1130-1135, 2009.
7. Breitkopf K, Nagy LE, Beier JI, Mueller S, Weng H and Dooley S; Current experimental perspectives on the clinical progression of alcoholic liver disease. *Alcohol Clinical and Experimental Research*. 33(10):1-9. 2009
8. Cai J, Bhatnagar A, Pierce WM Jr. Protein modification by acrolein: formation and stability of cysteine adducts. *Chemical Research in Toxicology*. Apr;22(4):708-16. 2009. PubMed PMID: 19231900 (Featured article of the issue)
9. Dumstorf, C.A., Mukhopadhyay, S., Krishnan, E., Haribabu, B., and McGregor, W.G. REV1 is implicated in carcinogen-induced lung cancer. *Molecular Cancer Research*. 7: 247-254 2009. (Featured article)
10. Feng W, Ye F, Xue W, Zhou Z, and Kang YJ. Copper regulation of hypoxia-inducible factor-1 activity. *Molecular Pharmacology*, 75:174-182, 2009.

11. Gäbele E, Froh M, Arteel GE, Uesugi T, Hellerbrand C, Schölmerich J, Rippe RA, Brenner DA, and Thurman RG (2009) TNF- $\alpha$  is required for cholestasis-induced liver fibrosis in the mouse. *Biochemical and Biophysical Research Communications*, 378:348-53. 2009.
12. Goebel, C., Hewitt, N.J., Kunze, G., Wenker, M., Hein, D.W, Beck, H., Skare, J.: Skin metabolism of aminophenols: Human keratinocytes as a suitable *in vitro* model to qualitatively predict the dermal transformation of 4-amino-2-hydroxytoluene *in vivo*. *Toxicology and Applied Pharmacology* 235: 114-123, 2009.
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15. Jani TS, Gobejishvili L, Hote PT, Barve AS, Joshi-Barve S, Kharebava G, Suttles J, Chen T, McClain CJ, Barve S. Inhibition of methionine adenosyltransferase II induces FASL expression, FAS-DISC formation and caspase-8 dependent apoptotic death in T leukemic cells. *Cell Research* 19(3): 358-369, 2009
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Kilfoy, B.A., Zheng, T., Lan, Q., Han, X., Holford, T., Hein, D.W., Qin, Q., Leaderer, B., Morton, L.M., Yeager, M., Boyle, P., Zhao, P., Chanock, S., Rothman, N., and Zhang, Y.: Genetic variation in N-acetyltransferases 1 and 2, cigarette smoking, and risk of non-Hodgkin lymphoma. *Cancer Causes and Control* (Epub October 7, 2009). ([PubMed](#))

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## ABSTRACTS

### Gavin Arteel:

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### Local/Regional

6. Kaiser JP, Guo L, Beier JI, Zhang J, Lesgards JF, Hoetker JD, Monia BP, Bhatnagar A, and Arteel GE PKC $\epsilon$  contributes to chronic ethanol-induced steatosis but not to inflammation and necrosis: beyond the tale of two hits? *Research! Louisville*, October, 2009.
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**Jian Cai:**

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**Theresa Chen**

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**Ramesh Gupta:**

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### **Y. J. Kang**

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2. Kang YJ. Cross talk of the heat shock and heavy metal regulatory pathways. Proceedings of the 48<sup>th</sup> annual meeting of the Society of Toxicology, Seattle, WA, March 16-20, 2008

### **LaCreis Kidd**

1. Lavender NA, Zhu Y, Benford ML, Vancleave TT, Kidd, LR. Role of Glutathione S-Transferases (GSTs) Polymorphisms in Predicting Prostate Cancer Risk Among African-American Men. Proceedings of the annual meeting of the Environmental Health Science Fellows Showcase. University of Cincinnati, Cincinnati, OH, September 18, 2009 (Abstract #18).

2. Lavender NA, Zhu Y, Benford ML, Vancleave TT, Kidd, LR. Role of Glutathione S-Transferases (GSTs) Polymorphisms in Predicting Prostate Cancer Risk Among African-American Men. Proceedings of the 100<sup>th</sup> annual meeting of the American Association for Cancer Research Conference, Denver, CO, April 21, 2009 (Abstract #3934).

3. Benford, ML, T.T. VanCleave, G.N. Brock, N.A. Lavender, RA. Kittles, and L.R. Kidd 8q24 Sequence Variants in Relation to Prostate Cancer Risk among African-American Men. Proceedings of the 100<sup>th</sup> annual meeting of the American Association for Cancer Research Conference, Denver, CO, April 20, 2009 (Abstract #980).

4. Lavender, N.A., Zhu, Y., Benford, M.L., Vancleave, T.T., Kidd, L.R. Role of Glutathione S-Transferases (GSTs) Polymorphisms in Predicting Prostate Cancer Risk Among African-American Men. 1st University of Louisville Graduate Research Symposium, University of Louisville, Louisville, KY, March 6, 2009.

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## **Nobuyuki Matoba**

1. Barnett B, Conway H, Husk A, Pickel M, Arntzen C, Zhang P, Quinnan G, Mooney J, Hanson C, Takahashi A, Tanno K, Tanaka H, and Matoba N. Development of a robust and rapid plant expression system for Actinohivin, a novel anti-HIV-1 protein targeting the envelope high-mannose cluster. Plant-made Pharmaceuticals Meeting, Louisville/Owensboro, KY, June 2009
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## **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).
2. Watson, N.B., Digman, and **McGregor, W.G.** Annual Workshop on Advanced Fluorescence Dynamics, University of California, Irvine October 2009. Intranuclear dynamics of proteins required for resolution of blocked DNA replication forks. Invited platform presentation

### Abstracts at local or regional meetings

3. Stallons, L.J., Kalbfleisch, T. , and McGregor, W.G. The tumor suppressor activities of DNA polymerase iota. J. G. Brown Cancer Center Retreat. September 2009.
4. Stallons. LJ and McGregor, W.G. DNA polymerase iota suppresses UV-induced skin cancer by linking stalled replication forks with cell cycle arrest and apoptotic programs. Graduate

Research Symposium, University of Louisville Graduate Research Symposium, University of Louisville, 09/092009 (Platform presentation)

5. Stallons, L.J and McGregor, W.G. DNA polymerase iota suppresses UV-induced skin cancer by linking stalled replication forks with cell cycle arrest and apoptotic programs. Ohio Valley Society of Toxicology, October 2009. (Platform presentation).

6. Stallons, L.J and McGregor, W.G. DNA polymerase iota suppresses UV-induced skin cancer by facilitating DNA damage-induced cell cycle checkpoint arrest and apoptosis. Research Louisville, 10/09.

### **Steven Myers**

1. Harini S Aiyer, Yan Li, Matthew Bower, Steven R Myers and Robert C.G. Martin. *In vivo effects of cigarette smoke and bile-acid reflux on the early molecular biomarkers of esophageal adenocarcinoma*. Society of Toxicology, Baltimore, MD, March, 2009

2. Myers, S., Hunter, S., and Radmacher, P. *Determination of Tobacco-Specific Nitrosoamine Hemoglobin Adducts in Smoking Mothers and Neonates by Mass Spectrometry*. Pediatric Academic Societies' Annual Meeting, Baltimore, Maryland. May, 2009.

3. Hunter, S., Myers, S., and Radmacher, P., *Detection of Polycyclic Aromatic Hydrocarbons (PAHs) in Human Breast Milk*, Pediatric Academic Societies' Annual Meeting, Baltimore, Maryland. May, 2009.

4. Myers, S., Hunter, S., and Radmacher, P., *Application of Amniotic Fluid as a Biological Marker of Environmental Carcinogen Exposure during Pregnancy*, Pediatric Academic Societies' Annual Meeting, Baltimore, Maryland. May, 2009.

5. Myers, S., Cunningham, C., Radmacher, P., Wright, T., and Padgett, J. *Relationship between Gestational Age, Neonatal Birth Weight, and Hemoglobin Adducts to Benzo[a]pyrene in Maternal Smokers and Nonsmokers*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.

6. Myers, S., Hurst, H. and Ali. Md. Y., *Studies on the Kinetics of Adduct Formation of Unsubstituted PAH and their Epoxide Derivatives with Hemoglobin*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009

7. Cunningham, C., Wright, T. and Myers, S., *The Relationship between GSTM1/T1 Genotypes and Tobacco Related Hemoglobin Adducts in Maternal and Fetal Blood*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.

8. Myers, S., Radmacher, P., Ali, Md, Y., and Padgett, J., *Aromatic Amine Hemoglobin Adducts in Women Smokers and Nonsmokers During Pregnancy: Correlations with Gestational Age, Neonatal Birth Weight, Ethnicity, and Pharmacogenetics*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.



9. Wasana K. Sumanasekera, Margarita M. Ivanova, Benjamin J. Johnston, Susan M. Dougherty, Gamini U. Sumanasekera, Steven R. Myers, Ryoichi Kizu, and Carolyn M. Klinge, *Diesel Exhaust Particulate Extracts Alter Nongenomic Estrogenic Responses in Human Endothelial Cells*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.
10. Zamora, R. Cunningham, C., Myers, S. R., Wright, T., and Weeks, J., *Assessment of Amniotic Fluid PAHs in Smokers and Nonsmokers*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.
11. Hunter, S., Radmacher, P., and Myers, S., *Qualitative and Quantitative Assessment of PAH in Human Breast Milk*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.
12. Myers, S. R., Cunningham, C., Wright, T., and Ali, Md. Y., *The Relationship between Maternal and Fetal CYP1A1 Genotype in Smokers and Nonsmokers to Benzo[a]pyrene Hemoglobin Adducts*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.
13. Myers, S., Hurst, H. and Ali. Md. Y., *Studies on the Kinetics of Adduct Formation of Unsubstituted PAH and their Epoxide Derivatives with Hemoglobin*, International Society for Polycyclic Aromatic Compounds (ISPAC 22), Sept. 20 – 24, Charleston, SC, 2009.
14. Myers, S.R., Ali, Md. Y., Wright, T., and Cunningham, C., GSTM1/T1 Genotypes and Benzo(a)pyrene Hemoglobin Adducts in Maternal and Fetal Blood. *Research Louisville*, 2009.
15. Hunter, S., Myers, S. R., and Radmacher, P. Detection of Polycyclic Aromatic Hydrocarbons (PAH's) in Human Breast Milk. *Research Louisville*, 2009.
16. Padgett, J., Myers, S.R., Cunningham, C., Radmacher, P., Relationship between Gestational Age, Neonatal Birthweight, and Hemoglobin Adducts to Benzo(a)pyrene in Maternal Smokers and Nonsmokers, *Research Louisville*, 2009.

**Donald Nerland:**

1. Benz, F.W., Campian, E., Nerland, D.E., Cai, J. Identification of Rat Brain Cytosol Protein Targets of Acrylonitrile In Vivo Using Two-Dimensional Gel Electrophoresis and Mass Spectrometry. Proceedings of the annual meeting of the Society of Toxicology, Baltimore, MD, March 2009 (*Toxicological Sciences* 108: Supplement 1, abstract # 996).
2. Nerland, D.E., Chemopreventive 1,2-Dithiole-3-thione Increases Human CYP4F mRNA Levels, Abstracts of 8<sup>th</sup> Annual J.G. Brown Cancer Center Retreat, Louisville, KY, November 2009, abstract # 63.

**Kenneth Palmer:**

1. Palmer, KE, O'Keefe BR, Vojdani F, Buffa V, Shattock RJ, Montefiori DC, Hume SD, Bratcher B. Scaleable manufacture of HIV-1 entry inhibitor Griffithsin and validation of its safety and efficacy as a topical microbicide component. Proceedings of the 4<sup>th</sup> International Workshop on HIV Transmission. Cape Town, South Africa, July 2009. (*Reviews in Antiviral Therapy*, Supplement 2009).

#### **Uma Sankar:**

1. Cary, R. and Sankar U. "Regulation of stem cell proliferation by a pro-quiescence kinase". 95<sup>th</sup> 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 Proliferation" Research! Louisville, October, 2009, Louisville, KY

3. Todd L. R., Damin M. N., Grant S. W., Means A. R and Sankar U. "Growth Factor *erv1*-like (Gfer) Promotes Embryonic Stem Cell Function by Preserving Mitochondrial Integrity and Preventing Autophagic Cell Death. Keystone Symposium on Mitochondrial Dynamics and Physiology, March 22-27, 2009, Whistler, British Columbia, Canada.

#### **Zhao-Hui (Joe) Song**

1. Zhuanhong Qiao, Jian Cai, William M. Pierce Jr. and Zhao-Hui Song. Determination of an Internal Disulfide Bond in the Second Extracellular Loop of Cannabinoid CB2 Receptor by Mass Spectrometry, International Cannabinoid Research Society Conference, St Charles, IL, 2009

2. Z H Song, Zhen Xiao, Wei Wang, and Ya Fatou Njie. CB1 and CB2 Agonists Increase Uveoscleral Outflow. The Association for Research in Vision and Ophthalmology Annual Meeting, Fort Lauderdale, FL, 2009.

#### **J. Christopher States:**

1. D'Souza SE, Sithu SD, Siddiqui MA, Vladykovskaya EN, Haberzettl P, States J, Srivastava, S. Arsenic induces endothelial activation, inflammation and atherosclerotic lesion formation. Program No. 1283, 2009 Itinerary Planner, Baltimore, MD: Society of Toxicology

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

3. Muenyi CS, Pandit AA, Fan T, Helm C, States J. Augmentation of cisplatin cytotoxicity associated with altered DNA damage response and cellular Platinum accumulation. Program No. 1798, 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:

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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

6. States JC, Ngalame NO, Beier JI, Arteel GE. Indicators of post-natal liver injury consequent to in utero arsenic exposure. Birth Defects Research Part A 85: 436 (2009)

**RESEARCH GRANTS FUNDED**

Agency/Number	Title	Role	PI	Project Period	Budget Award
<b>Gavin Arteel</b>					
RC2 AA019385	Biomarkers for Steatohepatitis	Co-I	McClain	09/30/09-08/31/11	\$1,536,994
R01 AA010154	TNF $\alpha$ and recovery from alcoholic liver injury	Subcon . PI	Diehl	09/01/09-12/31/11	\$140,255
R01 AA003624 S1	Control of drug and ethanol metabolism (supplement)	PI	Arteel	07/15/09-12/31/10	\$130,836
R01 AA003624	Control of drug and ethanol metabolism (supplement)	PI	Arteel	07/15/09-12/31/10	\$1,364,794
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 Alocho-Nutrient Interactons	Dir, Animal 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 $\epsilon$ in alcoholic liver disease	Mentor	Kaiser	11/01/07-10/31/10	\$84,894
P30 ES014443	Center for Environmental Genomics and Integrative Biology	Member	Ramos	06/04/07-03/31/11	NA
R21 AA015611	Matrix Metalloproteinases in Alcoholic Liver Injury	*Co-I/PI	*Deaciuc /Arteel	08/01/06-05/31/09	\$370,000
R01 AA013868	Egr-1: A candidate molecular target for treating ALD	collaborator	Nagy (Case-Western)	06/01/04-03/31/09	NA
<b>Frederick Benz</b>					
DOD/W81XWH-08-1-0047	High Technology Mass Spectrometry Laboratory	PI	Benz	9/1/2009-8/31/2010	No Cost Extension \$156,396

<b>Jian Cai</b>					
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	\$942,352.
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.
<b>Theresa Chen</b>					
NIH/NIAAA R01 AA015970	S-adenosylchomocysteine and S-adenosylmethionine in alcoholic liver disease	Co-I	McClain	9/30/05 – 6/30/10	\$1,000,000
NIH/1R01 AA014371-01A1	Epigenetic regulation of CD4+ T cell survival by S-adenosylmethionine	Co-I	Barve	4/1/08-3/31/13	\$1,250,000
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	9/1/06-8/31/09	\$963,000
R21 ES016367	Priming of liver disease by arsenic exposure	Co-I	Arteel	05/01/09-04/30/11	\$275,000
<b>Keith Davis</b>					
DoD/USAMRMC W81XWH-09-2-0022*	08116003 Development of Novel Vaccines and Therapeutics Using Plant-Based Expression Systems	PI	Keith 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	Keith Davis	4/1/09 to 3/31/09	\$53,550
Kentucky Renewable Energy Consortium	Production of High-Value Cellulase from Tobacco	Co-PI	Eric Berson	10/1/09 to 3/31/11	\$100,476
<b>Ramesh Gupta</b>					
NCI CA-118114	Breast Cancer Chemoprevention Strategies	PI	Gupta	04/07 - 03/11	\$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 - 08/10	\$149,939
NCI CA-125152-02S1	Administrative supplement to "Breast Cancer Chemoprevention Potential of Common spices"	PI	Gupta	06/08-05/10	\$29,626 Direct
NCI CA-118114-03S1	Administrative supplement to "Breast Cancer Chemoprevention Strategies"	PI	Gupta	08/09-07/10	\$99,268 Direct
<b>David Hein</b>					
NCI R01-CA034627	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	07/01/2003 – 06/30/2010	\$1,724,900
NIH/NIHES (T32 ES011564)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/2004 - 06/30/2009	\$697,188
MD Anderson	NAT1 and NAT2 Genotype	PI	Hein	01/01/2004 –	\$60,000

Cancer Center	Determinations in Cancer Patients & Controls			12/31/2009	
NIEHS T35 ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/2006 – 03/31/2011	\$158,355
NCI subcontract to R01 CA100374 through Vanderbilt University	Nashville Breast Health Study	PI	Hein	05/03/2007 – 04/30/2009	\$134,006
NIH (P30-ES014443)	Center for Environmental Genomics and Integrative Biology	Inv.	Ramos	06/04/2007 – 03/31/2011	\$4,440,000
NCI (R03-CA128028)	A pharmacogenetic approach to prostate cancer susceptibility	Col	Kidd	06/12/2007 – 05/31/2009	\$148,000
Procter and Gamble, Inc. Research Agreement #155482	NAT1 and NAT2 Metabolism Studies with Hair Dye Arylamines	PI	Hein	07/02/2007 – 07/01/2009	\$100,000
UofL CEGIB	Polymorphic genes of detoxification enzymes as risk factors for PSP	CoPI	Litvan/Hein	04/01/2008 – 03/31/2009	\$30,000
BC083107 DOD Breast Cancer Research Program	N-acetyltransferase 1 polymorphism and breast cancer risk	Mentor	Millner	09/29/2008 – 09/28/2011	\$92,442
NIH/NIEHS (T32-ES011564)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/2009 – 06/30/2014	\$2,037,745
NIH/NCI(R01-CA034627-23S1)	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	07/01/2008–06/30/2010	\$25,000
<b>Harrell Hurst</b>					
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
KY Lung Cancer Research Prog	Effect estrogen on polycyclic aromatic hydrocarbons	Co-I	R. Gupta	07/01/2007 – 06/30/2009	\$295,649
US Army Med Res. Acq. Activity W81XWH-08-1-0047	High Technology Mass Spectrometry Lab	Co-I	W. Pierce	04/01/2008 – 08/31/2009	\$992,352
US Army Med Res. Acq. Activity W81XWH-08-1-0047	High Technology Mass Spectrometry Lab	Co-I	F. Benz	09/01/2009 – 08/31/2009	No-cost Extension
KY Dept Natural Resources Env. Protection PO2 129 0800021240	Air toxics monitoring and risk management program	Co-I	R. Barnett (KY DNR)	07/01/2008 – 06/30/2009	\$127,418
<b>Y.J. Kang</b>					
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 endotoxi-mia 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
<b>LaCreis Kidd</b>					
R03 NCI, NIH	A pharmacogenetic Approach to prostate cancer susceptibility	PI	Kidd	4/1/2007- 3/31/2009	\$100,000
Commission on Diversity and Racial Equality (CODRE) /Office of the EVPR Graduate Student research Award	Joint Modifying Effects of Variant Oxidative Stress and Apoptosis Markers and Smoking in Relation to Prostate Cancer Risk in African-American Men	Mentor	Lavender	6/1/2009- 5/30/2010	\$1,000
NIH, NIEHS T32-ES011564	UofL Environmental Health Science Training Program	Mentor	Hein	07/1/09- 06/30/14	\$1,999,550
<b>Nobuyuki Matoba</b>					
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)
<b>W. Glenn McGregor</b>					
NIH/NCI 1 R01 CA112197-04	Mutagenesis as a novel target for cancer prevention	PI	McGregor	04/01/05- 02/28/10	\$700,000 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	Administrative Supplement	PI	McGregor		\$12,680
School of Medicine Intramural Research Grant	The role of the NK1 receptor in the development of lung cancer	PI	McGregor	03/03/09- 02/28/10	\$20,000 Total Direct Costs
Brown Cancer Center Research Initiation Grant	Molecular mechanisms of stalled replication fork resolution in human cells	PI	McGregor	3/01/08- 2/28/09	\$49,000 Total Direct Costs
NIH/NIEHS F30 ES17730-01	Y-family DNA polymerases and cellular responses to benzo[a]pyrene	Mentor	Klarer	07/01/2009- 06/30/13	\$31,991
NCRR	Biacore 3000 Shared Instrument Grant	Investigator	Miller		\$270,000
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	07/01/04 – 06/30/09; 07/01/09- 06/30/14	\$697,188; \$2,037,745
UofL Clinical and Translational Pilot Grant Basic Award	Development of small molecule inhibitors of skin carcinogenesis	PI	McGregor		
<b>Steven Myers</b>					
Univ. Of California Tobacco-Related	Measuring prenatal tobacco exposure in newborn blood spots	Co-I	J. Yang (U-CA)	07/01/08 - 06/30/11	\$506,927

Disease Research Program /17rt-0138					
<b>Donald Nerland</b>					
Department of Defense (DOD)	High Technology Mass Spectrometry Laboratory	Co-I	Benz	9/1/2009 – 8/31/2010	\$156,395 (no cost extension)
<b>Kenneth Palmer</b>					
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)
Starpharma Ltd/ IB081330	Evaluation of viral entry-inhibitory activity of SPL7013 against human genital papillomavirus types	PI	Palmer	09/01/2008 – 02/28/2009	\$36,878 (total costs)
Advanced Cancer Therapeutics/ OICB080771	Preclinical research on HPV vaccine candidate OICB080771	PI	Palmer	10/01/2008 – 06/19/2009	\$199,357 (total costs)
<b>William Pierce</b>					
NIEHS 1P01ES011860-01A19001	Cardiovascular Toxicity of Environmental Aldehydes	Co-I	Bhatnagar, A.	2003 - 2009	\$1,437,222
Department of Defense US Army W81XWH-08-1-0047	High Technology Mass Spectrometry Laboratory	PI	Pierce - Benz	2008 - 2010	\$942,352
<b>Uma Sankar</b>					
NIH/ R-01 AI076169	Antiviral Lectins as Microbicides	Co-I	Palmer	04/15/2008 – 03/31/2012	\$1,760,628 (total costs)
UofL SOM Basic Grant	Hematopoietic Stem Cells as Targets of Cadmium Toxicity	PI	Sankar	04/01/09-03/31/10	\$15,000
Brown Cancer Center Pilot Grant	Role of impaired calmodulin dependent protein kinase signaling in lung cancer	PI	Sankar	04/01/07 – 03/31/10	\$50,000
<b>Zhao-Hui (Joe) Song</b>					
R01DA11551-09	Structure and Function of CB2 Cannabinoid Receptor	PI	Song	5/1/04-4/30/10	\$1,286,104
R01 DA11551-09S1	Structure and Function of CB2 Cannabinoid Receptor (minority supplement for Jean-Claude Nzimulinda)	PI	Song	5/1/07-4/30/09	\$80,708
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	07/01/2004 - 06/30/2009	\$697,188
<b>J. Christopher States</b>					
NIH-NIEHS, R21ES015812	Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease	PI	States	4/1/08 – 3/31/10	\$407,000
NIH-NIEHS, R01ES011314-05	Arsenic Induced Miotic Arrest Associated Apoptosis	PI	States	8/1/03 – 4/30/10	No Cost Extension
NIH-NIEHS,	Arsenic Induced Miotic Arrest	PI	States	6/2009-	\$6,000

R01ES011314-05S1	Associated Apoptosis				10/2009	
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	Srivastava		06/15/09 – 03/31/14	\$1,665,000
Indo-U.S. Science and Technology Forum	14 <sup>th</sup> All India Congress of Cytology and Genetics and Fogarty International Workshop on Molecular Epidemiology, Environmental Health and Arsenic Exposure Assessment	Co-PI	Giri, States		12/2009	\$10,000
NIH-NIEHS, T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein		07/01/04 – 06/30/09; 07/01/09-06/30/14	\$697,188; \$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 – 03/31/2011	\$78,157
CEGIB / SoMRC	miRNA Biomarkerz for Ovarian Cancer	Co-I	Helm		1/1/2009 – 12/31/2009	\$80,000 (\$60K + \$20K match)

## RESEARCH GRANTS SUBMITTED

<b>Gavin Arteel</b>						
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		04/01/10-03/31/11	\$213,917
<b>Theresa Chen</b>						
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				
<b>Keith Davis</b>						
NIH/3R01CA096997-04S1 (MPI)	A HER-2/neu pulsed DC1 vaccine for patients with DCIS	Co-PI	Brian Czerniecki U. Penn.		7/1/09 to 6/30/11	\$2,963,392
NIH/1C06RR030456-01*	Expanded Research Facilities for the Owensboro Cancer Research Program	PI	Keith Davis		4/1/10 to 3/31/14	\$7,222,310
Komen for the Cure	Development of Vaccines for	Co-I	Brian		5/1/10 to	Subaward Budget



	Breast Cancer Prevention		Czerniecki U. Penn.	4/30/12	\$246,452
Alpha-1 Foundation	Production of Alpha-1 Antitrypsin using Scalable Plant-based Expression (LOI) (Have been invited to submit full proposal for 2010 competition)	PI	Keith Davis	7/1/10 to 6/30/11	\$40,000
U of L Clinical and Translational Science Pilot Grant	Development of the Soy Peptide Lunasin as a Chemoprevention Agent	PI	Keith Davis	3/1/10 to 2/28/11	\$89,122
<b>Ramesh Gupta</b>					
NCI R01-CA-133777-01A1	Molecular Targets for Prevention of Lung Cancer by Phytonutrients in Berries	PI	Gupta	07/10-06/15	\$3,080,000
NCI R01-AT-005939-01	Cervical Cancer Chemoprevention Strategies	PI	Gupta	04/10-03/15	\$2,102,077
NCI R01-CA-131464-01A1	Molecular Targets for Berries-Mediated Breast Cancer Prevention	PI	Gupta	11/10-06/15	\$2,376,112
NCI R41-CA-150319-01	Terpenoids for Prophylactic Treatment of Lung Cancer	PI	Gupta	04/10-10/12	\$297,580
NCI R43-CA-150718-01	Prophylactic Treatment of Cervical Cancer by Target Delivery	PI	Gupta	04/10-03/11	\$200,000
R01-CA-153251 (EUREKA)	Prevention and Treatment of Cervical Cancer by Novel Target Delivery Device	PI	Gupta	04/10-03/11	\$1,195,250
P50-CA-142508	University of Louisville SPORE in Lung Cancer	Project Leader	Chesney	10/09-09/14	\$935,363
1X02-AT-005687-01	University of Louisville Botanicals Research Center (UofL BRC) for Health Benefits	PI	Gupta	07/10-06/15	Pre-application
<b>David Hein</b>					
UofL; Clinical and Translational Pilot Program	Understanding and predicting individual cancer risk	PI	Hein	01/01/2010 – 12/31/2010	\$50,000
Kentucky Lung Cancer Research Program	Role of NAT1*10 haplotype in cancer risk from tobacco carcinogens	PI	Hein	10/01/2009 11/30/2011	\$149,996
NCI R01-CA034627	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	04/01/2010 - 05/15/2015	\$1,850,000
NIAAA T32-AA019425-01	UofL Alcohol Research Training Program	Mentor	McClain	04/01/10- 03/31/15	\$783,466
NCI R01-CA034627 Administrative Supplement	Pharmacogenetics of drug and carcinogen metabolism	PI	Hein	07/01/2009 – 06/30/2010	\$148,000
NIH 1U54 RR026087	University of Louisville's Clinical and Translational Sciences Institute	Inv.	McClain	07/01/2010 - 06/30/2015	\$20,000,000
UofL Innovative Translational	Genetic and epigenetic biomarkers of hepatocellular carcinoma	PI	Hein	03/01/2010 – 02/28/2011	\$225,552

Research Pilot Program					
<b>Y. J. Kang</b>					
NIH-NHLBI, 1R01 HL101248	Mitochondrial Dysfunction in heart hypertrophy	PI		4 years	\$2,445,000
<b>LaCreis Kidd</b>					
Winship Cancer Institute of Emory University	Molecular Pathways and Biomarker (MPB) program: Innate Immunity Markers as Predictors of PCa Outcomes	Co-I	Kimbro	01/01/10-12/31/10	\$25,000
NIH PAR-09-161	U01 Basic Cancer Research in Cancer Health Disparities: Innate Immunity Predictors of Prostate Cancer Outcomes & Disparities	Co-PI	Kimbro/Kidd	07/01/2010-6/30/15	\$1,902,536
<b>Nobuyuki Matoba</b>					
SERCEB	A mucosal vaccine targeting surface high-mannose glycans on EID/BD viruses.	PI	Matoba	03/01/09 – 02/28/11	\$200,000 (total direct costs) <i>Not funded</i>
Grand Challenges in Global Health/Grand Challenges Explorations Rnd 3	Developing a mucosal vaccine targeting HIV envelope glycans.	PI	Matoba	03/01/10 – 02/28/11	\$100,000 (total direct costs) <i>Not funded</i>
NIH NIAID R01	The Novel Mannose Cluster-Targeting Anti-HIV Protein Actinohivin	PI	Matoba	01/01/10 – 12/31/14	\$1,250,000 (total direct costs) <i>Priority Score: 61 Percentile: 45</i>
NIH NIAID Microbicide Innovation Program V RFA (R21/R33 Phased Innovation Award)	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	04/01/10 – 03/31/15	\$1,170,500 (total direct costs) <i>Priority Score: 37</i>
Grand Challenges in Global Health/Grand Challenges Explorations Rnd 4	Development of a mucosal vaccine against enveloped viruses.	PI	Matoba	05/01/10 – 04/31/11	\$100,000 (total direct costs) <i>Pending</i>
UofL Clinical Translational Sciences Pilot Grant Program Basic Translational Research Award	A broad-spectrum vaccine against enveloped viruses.	PI	Matoba	03/01/10 – 02/28/11	\$49,020 (total direct costs) <i>Awarded</i>
<b>W. Glenn McGregor</b>					
CEGIB Director's Biomarker Award	DNA polymerase as a putative tumor suppressor	PI	McGregor		
NIH/NCI: RC1	DNA polymerase eta and benzo[a]pyrene-induced mutagenesis	PI	McGregor		
NIH/NCI: R21	Y family DNA polymerases and cellular responses to	PI	McGregor		

	benzo[a]pyrene				
NIH/NCI: R21	The role of Y-family DNA polymerases in transplacental carcinogenesis	PI	McGregor		
<b>Steven Myers</b>					
RC1HD063745-01	Tobacco related biomarkers of preterm labor	PI	Myers	10/1/09-9/30/11	\$666,592
RC1CA149159-01	Application of Mass Spectrometry in the detection of carcinogen protein adducts	PI	Myers	10/1/09-9/30/11	\$554,420
1S1RR029345-01	LTO Orbitrap XL ETD mass spectrometer	PI	Myers	12/1/09-11/30/10	\$922,377
1R21 ES013304-01A1	Biomarkers of carcinogen exposure in tobacco smoke	PI	Myers	12/1/09-11/31/11	\$275,000
R03 CA121415-01A1	Chemoprevention of Dibenzo(a,1)pyrene induced mammary carcinogenesis	PI	Myers	12/1/09-11/30/11	\$100,000
<b>Kenneth Palmer</b>					
NIH/ AI076169 Supplement	Antiviral lectins as microbicides	PI	Palmer	09/15/2009 – 08/31/2010	\$519,000 <i>Awarded; see A</i>
Gates Foundation Grand Challenges Explorations	Glycan targeting to protect against infectious disease	PI	Palmer	05/01/2010 – 04/30/2011	\$100,000 <i>Under review</i>
<b>Uma Sankar</b>					
American Cancer Society Research Scholar Award	Role of calmodulin-dependent protein kinases in hematopoiesis and leukemia	PI	Sankar	07/01/2010-06/30/2014	\$964,969 Total direct costs
NCI/RO1CA149315-01	Calmodulin-dependent protein kinases in hematopoiesis and leukemia	PI	Sankar	04/01/2010-03/31/2015	\$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
<b>Zhao-Hui (Joe) Song</b>					
R21NS 66474	Assay Development for High Throughput Screening of Ligands for Novel Cannabinoid Receptor GPR55	PI	Song	9/1/09-8/31/11	\$185,000
R01 DA11551	ARRA Administrative Supplement for Structure and Function of CB2 Cannabinoid Receptor,	PI	Song	7/1/09-2/28/11	\$140,638
<b>J. Christopher States</b>					
NIH-NIEHS 1R13ES019025-01	12th Annual Midwest DNA Repair Symposium	PI	States	4/1/2010 - 3/31/2011	\$10,186
NIH-NIEHS 1R01ES019160-01	In Utero Arsenic-exposure Induced Hepatic Dysfunction and Vascular Disease	PI	States	7/1/2010 - 6/30/2015	\$1,865,100
CDMRP-OCRP OC093257	Plasma microRNA Biomarker for Ovarian Cancer	PI	States	1/1/2010 – 12/31/2012	\$1,264,146
NIH-NIEHS,	Transplacental Arsenic Induced	PI	States	10/1/09 –	\$221,125

R21ES015812-02S1	Hepatic Dysfunction and Vascular Disease			3/31/10	
NIH-NIEHS, R21ES015812-02(Comp rev)	Transplacental Arsenic Induced Hepatic Dysfunction and Vascular Disease	PI	States	10/1/09 – 3/31/10	\$46,250
NIH-NIEHS, R01ES011314-05S2	Arsenic Induced Miotic Arrest Associated Apoptosis	PI	States	10/1/09 – 4/30/10	\$72,754
KSEF	Hyperthermic Intraperitoneal Cisplatin and Arsenic for Ovarian Cancer	Co-I	Helm	7/1/09 – 6/30/10	\$50,000

## 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-acetyltransferase 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.

- *Emerging Hypotheses on the Functional Effects of N-acetyltransferase Single Nucleotide Polymorphisms: A Paradigm for Understanding Complexities of Personalized Medicine*. Diabetes and Obesity Center, University of Louisville, Louisville, Kentucky, October 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**

- Nov 21, 2009, Keynote Speech, Cardiovascular Diseases, Molecular Diagnostics-2009, Beijing China, "Regenerative medicine in cardiovascular disease."

- 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."

- Mar 19, 2009, Invited Speaker, Symposium "Heat shock proteins and the toxicological response" at the 48<sup>th</sup> annual meeting of the Society of Toxicology, Baltimore, MD, March 15-19, 2009. "Cross talk of the heat shock and heavy metal regulatory pathways"

### **Nobuyuki Matoba**

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

- Invited Research Seminar, “Actinohivin, a Candidate HIV-1 Microbicide” Osaka University, Osaka, Japan, July 2009.

### **Glenn McGregor**

- Intranuclear dynamics of proteins required for mutagenesis, Molecular Targets Program, James Graham Brown Cancer Center. June 2009.

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

### **Kenneth Palmer**

- Invited by Virology Education NV to give oral presentation at 4<sup>th</sup> International HIV Transmission Workshop, Cape Town, South Africa. “Scaleable manufacture of HIV-1 entry inhibitor Griffithsin and validation of its safety and efficacy as a topical microbicide component.” July 17<sup>th</sup>, 2009.

- Invited by United States Agency for International Development (USAID) and National Institute of Allergy and Infectious Diseases (NIAID) to give oral presentation on “Tobamovirus VLP Platform: Properties, Process Development and Manufacture Potential” at a Malaria Virus-Like Particles Development Workshop, Washington DC. September 22-23, 2009.

- Invited seminar at Fraunhofer Center for Molecular Biotechnology, Newark DE. “Beyond Latex: Protecting Mucosal Surfaces Against Virus Infection” July 2009.

- 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)

#### Student Affairs

Dr. Gavin Arteel

Dr. Uma Sankar (2011)

Dr. Peter Rowell (2010)

Dr. Glenn McGregor (2009)

#### Student Admissions

Dr. Chris States

Dr. LaCreis Kidd (2011)

Dr. Paul Epstein (2010)

Dr. James Kang (2009)

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