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I. Department Highlights

The Department of Pharmacology and Toxicology continued its efforts to foster excellence in graduate education and research as outlined in this annual report. Much of the details are provided in the individual faculty reports from each of the salaried faculty members in the Department. Some highlights of the year included several outstanding faculty recruitments:

**Primary Appointment in the Department of Pharmacology & Toxicology**

- **Jian Cai PhD** was appointed Instructor of Pharmacology and Toxicology. Dr. Cai received his M.Sc. in Pharmaceutical Chemistry from the Shanghai Institute of Pharmaceutical Industry in Shanghai and his PhD in Pharmacology and Toxicology at the University of Louisville. He received further postdoctoral training in the Mass Spectrometry Core Laboratory and was appointed technical director of the facility.

- **Ramesh Gupta PhD** was appointed Professor of Pharmacology and Toxicology, Agnes Brown Duggan Chair in Oncological Research, and Distinguished University Scholar. Dr. Gupta received his PhD in Chemistry at the University of Roorkee (India). He completed a postdoctoral fellowship, and then was promoted to faculty status and received appointments as Instructor Assistant Professor and Associate Professor in the Department of Pharmacology at Baylor College of Medicine. In 1989, he was recruited as Professor in the Department of Preventive Medicine and the Graduate Center for Toxicology at the University of Kentucky. His research includes development and identification of intermediate biomarkers to investigate etiology and prevention of human cancers resulting from both environmental and endogenous exposures.

**Joint Appointment in the Department of Pharmacology & Toxicology**

- **Jason Chesney, MD, PhD** was appointed Assistant Professor of Pharmacology and Toxicology. Dr. Chesney received both MD and PhD degrees in the NIH Medical Scientist Training Program at the University of Minnesota. He subsequently received further clinical and postdoctoral research training at Memorial Sloan-Kettering Cancer Center, New York-Presbyterian Hospital and Weill Medical College of Cornell University. He is presently Assistant Professor in the Department of Medicine (Division of Hematology/Oncology) and Deputy Director of the Molecular Targets Program at the James Graham Brown Cancer Center.

- **Teresa Whei-Mei Fan, PhD** was appointed Associate Professor of Pharmacology and Toxicology. She received her MS in Food Science from the University of Hawaii at Manoa and her PhD in Biochemistry from the University of California, Davis. She received further postdoctoral research training at Stanford University and at University of California, Davis. She is presently Associate Professor in the Department of Chemistry and a scientist in the Structural Biology Program at the James Graham Brown Cancer Center.
• **Michal Hetman, MD, PhD** was appointed Assistant Professor of Pharmacology and Toxicology. He received his MD from the Warsaw Medical School (Poland) and his PhD in Experimental and Clinical Medicine from the Polish Academy of Sciences in Warsaw. He completed postdoctoral studies in the Department of Pharmacology at the University of Washington and returned to Poland where he served as Assistant Professor in the Laboratory of Molecular Neurobiology at the International Institute of Molecular and Cellular Biology in Warsaw. He is assistant professor in the Department of Neurological Surgery and holds an endowed chair in molecular neurosignaling.

• **Mary Jayne Kennedy, PharmD** was appointed Assistant Professor of Pharmacology and Toxicology. She received the Doctor of Pharmacy from the Medical University of South Carolina. She completed a Pediatric Pharmacy Practice Specialty Residency at Ohio State University and Children’s Hospital, a Pediatric Pharmacotherapy Fellowship at the University of North Carolina, and a post-doctoral fellowship in pediatric clinical pharmacology at the Children’s Mercy Hospital in Kansas City, MO. Dr. Kennedy is Assistant Professor of Pediatrics and Associate Director of the Kosair Charities Pediatric Clinical Research Unit.

**Associate Appointment in the Department of Pharmacology & Toxicology**

• **Ye Qi Liu MD, PhD** was appointed Associate in Pharmacology and Toxicology. He received his MD from Guangxi Medical University in China and his Ph.D. in pharmacology from Osaka University Graduate School of Medicine in Japan. He completed postdoctoral fellowship training in the Department of Biochemistry at the University of Texas Southwestern Medical Center and in the Department of Medicine at the University of Vermont. He was promoted to a junior faculty member at the University of Vermont prior to his appointment here last March as Assistant Professor in the Department of Pediatrics.

**Adjunct Appointment in the Department of Pharmacology & Toxicology**

• **Jun-Yan Hong, PhD** was appointed Adjunct Professor of Pharmacology and Toxicology. He received his B.M. from Shanghai Medical University in 1977 and his Ph.D. in Biochemistry from the University of Medicine and Dentistry of New Jersey (UMDNJ). Following a brief postdoctoral appointment at UMDNJ, he moved to the Department of Chemical Biology and Pharmacognosy at Rutgers, where he completed a postdoctoral fellowship. He is presently professor in the School of Public Health and the Robert Wood Johnson School of Medicine at UMDNJ.

• **Kent Mitchell, PhD** was appointed Adjunct Assistant Professor of Pharmacology and Toxicology. He received his B.S and M.S. from North Dakota State University and his Ph.D. in Biochemistry from Clemson University. Dr. Mitchell completed a postdoctoral fellowship in the Department of Environmental Health at the University of Cincinnati Medical Center and subsequently was appointed adjunct assistant professor. Dr. Mitchell is Senior Staff Scientist at the Wood Hudson Cancer Research Laboratory in Newport, Kentucky.
As described more fully in their annual reports, numerous faculty and students in the Department received honors and awards. Of particular note:

- The medical pharmacology course continued to be one of the most highly rated courses by the medical students. In recognition of his outstanding teaching and course direction, Mike Williams MD, PhD received the Golden Apple Award by the School of Medicine, class of 2005. It was the 13th time he has received this prestigious award.

- Ramesh C. Gupta was appointed Agnes Brown Duggan Chair in Oncological Research and Distinguished University Scholar.

- Zhao-hui Song, PhD and J. Christopher States, PhD were approved for tenure.

- Zhao-hui Song, PhD was promoted to associate professor.

- Aruni Bhatnagar PhD was promoted to Distinguished University Scholar and is principal investigator on the first NIH program project grant awarded to UofL. William M Pierce, Jr., PhD was director of the core laboratory for the award.

- Donald M. Miller MD, PhD, John W. Eaton PhD and Jason Chesney MD, PhD are investigators on the largest NIH COBRE grant ever awarded to UofL. Dr. Miller also received the Mint Jubile Life Achievement Award.

- Janice Sullivan MD and Mary Jayne Kennedy PharmD are Director and Co-Director for the Pediatric Pharmacology Research Unit, a program funded by NIH beginning January, 2004.

- Frederick W. Benz PhD and Harrell E. Hurst PhD were honored for 25 years of service to the University of Louisville.

- M. Michele Pisano PhD and Leonard C. Waite PhD were selected as nominees by the School of Dentistry and the School of Medicine, respectively, for University of Louisville President Awards.

- Daniel Sessler, MD was elected “Distinguished Faculty” by the Alpha Omega Alpha Medical Honor Society.

- Craig J. McClain, MD was appointed to the NIH Center for Scientific Review Advisory Committee.

- David W. Hein PhD received the University of Louisville President’s Award for Outstanding Research, Scholarship, and Creative Activity and was selected for the Aster Visiting Professorship at the University of Oxford.

- Jason Lambert, PhD was selected for the KC Huang Outstanding Graduate Student Award.
• **Anwar Husain** (MD/PhD student in the laboratory of **David W. Hein, PhD**) received an individual NRSA fellowship for his dissertation research.

• **Frazier Taylor** (MD/PhD student in the laboratory of **J. Christopher States, PhD**) received first place in medical student research competition at Research!Louisville.

• **Brandon Kellie** (undergraduate student in the laboratory of **Zhao-hui Song, PhD**) received first place in research poster competition at the Kentucky Academy of Science.

• **Yu (Janet) Zang** (graduate student in the laboratory of **David W. Hein, PhD**) received second place award at the annual meeting of the Ohio Valley Society of Toxicology.

We received an excellent score on our NIEHS predoctoral training grant proposal (in partnership with the Department of Biochemistry and Molecular Biology) and have been notified it will be funded effective July 1, 2004. This represents the first predoctoral training grant awarded to UofL. Department faculty were instrumental in the first program project grant, the first Pediatric Pharmacology Research Unit and the largest COBRE awards to UofL during the past year. The Department underwent a successful program review. Several outstanding new faculty members are joining the faculty in 2004 and will be introduced in next year’s report.

Departmental productivity measures such as number of research grants (Fig. 1), abstracts (Fig. 2) publications (Fig. 3), number of graduate students (Fig. 4), and number of graduates (Fig. 5) suggest that the Department is progressing towards its goal to excel in its teaching, research, and service missions.

![Figure 1. Grants in which Department faculty and students serve as PI by year.](image)
Figure 2. Department abstracts by year

Figure 3. Department publications by year.
Figure 4. Department graduate students by year.

Figure 5. Department graduates by year.
II. 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 Challenge for Excellence to become a preeminent metropolitan research university, the Department Strategic Plan 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 will be 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 active contribution to high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville Challenge for Excellence.

- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who can 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.
III. Faculty/Research Descriptions (Primary and joint appointments)

George R. Aronoff, M.D. (Indiana University)
Professor
Effects of uremia on drug disposition in humans; drug nephrotoxicity and renal drug metabolism, artificial intelligence.

Gavin E. Arteel, Ph.D. (University of North Carolina-Chapel Hill)
Assistant Professor
Mechanisms of oxidative stress; mechanisms of alcohol-induced hepatitis, pancreatitis, and hepatocellular carcinoma.

Shirish Barve, Ph.D. (University of Kentucky)
Associate Professor
Effects of alcohol on molecular mechanisms of cytokine action, gene expression and liver injury.

Frederick W. Benz, Ph.D. (University of Iowa)
Professor
Biochemical pharmacology and toxicology; biochemical mechanisms of drug action and toxicity.

Aruni Bhatnagar, Ph.D. (University of Kanpur)
Professor
Cardiovascular toxicology; oxidative mechanisms of cardiovascular disease; lipid peroxidation in atherosclerosis; gene expression; secondary complications of diabetes
Haribabu Bodduluri, Ph.D. (Indian Institute of Science)
Associate Professor
Signal transduction and chemoreceptors. Role of leukotriene receptors in inflammation and host response.

Jian Cai, Ph.D. (University of Louisville)
Instructor
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, Ph.D. (University of Louisville)
Professor
Biochemical toxicology; role of glutathione in aging toxicology; general and specific toxicity of environmental pollutants.

Jason A. Chesney, MD, PhD (University of Minnesota)
Assistant Professor
Novel regulators of cancer cell metabolism; identification of emerging viruses and the development of immune-based therapies against widely metastatic cancers.

David E. Clouthier, Ph.D. (University of Texas Southwestern)
Assistant Professor
Function of endothelin-A receptor signaling during craniofacial and cardiovascular development. Mouse models of human birth defect syndromes.
Nicholas A. Delamere, Ph.D. (University of East Anglia)
Professor
Electrolyte transport mechanisms in epithelia; second messenger regulation of Na,K-ATPase activity; fluorescence imaging studies on cytoplasmic calcium; cellular proton transport.

John W. Eaton, Ph.D. (University of Michigan)
James Graham Brown Professor
Biological oxidation/reduction reactions with special emphasis on inflammatory diseases and neoplasia.

Paul N. Epstein, Ph.D. (Baylor College of Medicine)
Professor
Carol B. McFerran Chair in Pediatric Diabetes Research
Molecular mechanisms of diabetogenesis. The use of transgenic animals to study genetics and molecular mechanisms in vivo.

Teresa Whei-Mei Fan, Ph.D. (University of California-Davis)
Associate Professor
Metabolomics, proteomics, ecotoxicology, contaminant bioavailability, transport, biotransformation, and bioremediation.

David Gozal, M.D. (Hebrew University of Jerusalem)
Professor
Children's Hospital Foundation Pediatric Research Chair
Signal transduction mechanisms underlying ventilatory response to hypoxia; neuronal adaptations to intermittent hypoxia: growth factors, intracellular signaling, and genomic implications.
Evelyne Gozal, Ph.D. (University of Southern California)
Assistant Professor

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.

Ramesh C. Gupta, PhD (University of Roorkee, India)
Professor and Agnes Brown Duggan Chair of Oncological Research

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

Theo Hagg, MD, PhD
(MD, University of Leiden; PhD, University of California, San Diego)
Professor and Endowed Chair In Neurological Surgery

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

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

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

Michal Hetman, M.D., Ph.D.
(M.D., Warsaw Medical School; Ph.D., Polish Academy of Sciences)
Assistant Professor
Endowed Professor of Molecular Signaling

Role of signaling kinases in neuronal repair and demise.
Harrell E. Hurst, Ph.D. (University of Kentucky)  
Professor  
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, Ph.D. (Iowa State University)  
Professor  
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.

Mary Jayne Kennedy, Pharm. D. (Medical University of South Carolina)  
Assistant Professor  
Pediatric clinical pharmacology; pharmacodynamics, pharmacokinetics; pharmacogenetics, and biotransformation

Craig J. McClain, M.D. (University of Tennessee, Memphis)  
Professor  
University Distinguished Chair in Hepatology  
Role of cytokines in liver injury and other forms of hepatotoxicity, interactions with nutrition and toxicology.

W. Glenn McGregor, M.D. (University of Michigan)  
Associate Professor  
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.
Donald M. Miller, M.D., Ph.D. (Duke University)
Professor
James Graham Brown Foundation Chair
Molecular and clinical oncology; modulation of oncogene expression; triplex DNA based gene therapy; treatment of melanoma.

Steven R. Myers, Ph.D. (University of Kentucky)
Associate Professor
Drug metabolism, metabolism of xenobiotics and chemical carcinogens; use of hemoglobin as biomarker in exposure to xenobiotics.

Donald E. Nerland, Ph.D. (University of Kansas)
Professor
Biochemical toxicology; metabolism of drugs and environmental pollutants.

William M. Pierce, Jr., Ph.D. (University of Louisville)
Professor
Mechanisms of bone formation and resorption; design of novel drugs for management of osteoporosis; biomolecular mass spectrometry; proteomics in structural biology.

M. Michele Pisano, Ph.D. (Thomas Jefferson University)
Professor
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, Jr. M.D., Ph.D.**  
(Ph.D., Yale University; M.D., State University of New York)  
Professor

Toxicokinetics in drug overdoses and pharmacokinetics in pediatric disease states.

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**Peter P. Rowell, Ph.D.** (University of Florida)  
Professor

Neuropharmacology; effect of drugs on brain neurotransmitters and receptors.

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**Daniel I. Sessler, M.D.** (Columbia University)  
Professor  
Weakley Distinguished University Research Chair

Outcomes research; effects of anesthetics on thermoregulation; perioperative heat balance; adverse effects of mild hypothermia; effects of supplemental perioperative oxygen on wound infections, nausea and vomiting.

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

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

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**J. Christopher States, Ph.D.** (Albany Medical College/Union University)  
Associate Professor

Molecular biology and molecular genetics of DNA damage and repair in humans; mechanisms of chemoresistance; arsenic toxicity and cell cycle disruption.
Janice E. Sullivan, M.D. (University of Minnesota)
Associate Professor
Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.

David J. Tollerud, M.D., M.P.H.
(M.D., Mayo Medical School; M.P.H., Harvard University)
Professor
Occupational and environmental health; Occupational toxicology; molecular epidemiology

Leonard C. Waite, Ph.D. (University of Missouri)
Professor
Endocrine pharmacology; mechanism of action of hormones; pharmacological modulation of hormone action; mineral homeostasis.

Yang Wang, M.D. Ph.D.
(M.D., Jiangxi Medical College; Ph.D., University of Toronto)
Assistant Professor
Molecular and cellular regulation of genes implicated in hypoxic/ischemic injury and protection in the cardiovascular system.

Walter M. Williams, M.D., Ph.D. (University of Louisville)
Professor
Studies of drug elimination (metabolism and excretion).
**John L. Wong, Ph.D.** (University of California-Berkeley)

**Professor**

Biological chemistry; molecular dosimetry in environmental health; preparation of monoclonal antibodies in biomarker studies.

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**Wolfgang Zacharias, Ph.D.** (Philipps-University Marburg)

**Associate Professor**

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

Faculty with Primary Appointments

Arteel, Gavin E., Assistant Professor; Ph.D., Toxicology, University of North Carolina-Chapel Hill (1997).

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

Cai, Jian, Instructor; Ph.D., Pharmacology and Toxicology, University of Louisville (1999).

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

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. Knobel Professor and Chair; Ph.D., Pharmacology, University of Michigan (1982).

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

McGregor, W. Glenn, Associate 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).

Pierce, William M., Jr., Professor and Vice Chair for Graduate Education; Ph.D., Pharmacology and Toxicology, University of Louisville (1981).

Rowell, Peter P., Professor; Ph.D., Pharmacology and Therapeutics, University of Florida (1975).

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

States, J. Christopher, Associate 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, Associate 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, Associate Professor of Microbiology and Immunology, and Pharmacology and Toxicology; Ph.D., Biochemistry, Indian Institute of Science (1983).

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

Clouthier, David, Assistant Professor of Molecular, Cellular and Craniofacial Biology, and Pharmacology and Toxicology; Ph.D., Cell and Molecular Biology, University of Texas Southwestern Medical Center (1994).

Delamere, Nicholas A., Professor of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Membrane Physiology and Biophysics, University of East Anglia, Norwich, England (1976).

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).

Fan, Teresa, Associate Professor of Chemistry, and Pharmacology and Toxicology; Ph.D., Biochemistry, University of California-Davis (1983).

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*, Assistant 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, Assistant 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).

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

Kennedy, Mary Jayne, Assistant Professor of Pediatrics, and Pharmacology and Toxicology; Pharm.D, Medical University of South Carolina (1998).

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

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).

Sessler, Daniel I., Professor of Anesthesiology, Weakley Distinguished University Research Chair, and Professor of Pharmacology and Toxicology, M.D., Columbia University (1980).

Sullivan, Janice E., Associate Professor of Pediatrics, and Assistant Professor of Pharmacology and Toxicology; M.D., University of Minnesota (1988).

Tollerud, David, Clinical Professor Environmental and Occupational Health Sciences and Professor of Pharmacology and Toxicology; M.D., Mayo Medical School (1978); M.P.H., Harvard Medical School (1990).

Wang, Yang, Assistant Professor of Pediatrics, and Pharmacology and Toxicology; M.D., Jiangxi Medical College (1982); Ph.D., Physiology, University of Toronto (1993).

Wong, John L., Professor of Chemistry, and Pharmacology and Toxicology; Ph.D., Chemistry, University of California at Berkeley (1966).

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

* Partial salary from Department of Pharmacology and Toxicology
Faculty with Associate Appointments

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

Jumblatt, James E., Professor of Ophthalmology and Visual Sciences; Ph.D., Biological Sciences, Columbia University (1975).

Liu, Ye Qi, Assistant Professor of Pediatrics; M.D., Guangxi Medical University (1983); Ph.D., Pharmacology, Osaka University (1993).

Miller, Frederick N., Professor of Physiology and Biophysics; Ph.D., Pharmacology, University of Cincinnati (1971).

Parsian, Abbas, Associate Professor of Molecular, Cellular and Craniofacial Biology; Ph.D., Biomedical Sciences, Western Michigan University (1986).

Rigor, Benjamin, Professor of Anesthesiology; M.D., University of the East Ramon Magsaysay Memorial Medical Center (1962).

Schurr, Avital, Professor of Anesthesiology; Ph.D., Biochemical Pharmacology, Ben Gurion University, Beer Sheva, Israel (1977).

Wang, Guang Jian, Assistant Professor of Pediatrics; Ph.D., Neuroscience, University of Minnesota (1996).

Young, William W., Professor of Molecular, Cellular, and Craniofacial Biology; Ph.D., Pharmacology, Washington University (1975).

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).

Horowitz, Stuart, Adjunct Assistant Professor of Pharmacology and Toxicology; Ph.D., University of Rochester (1986).

Matyunas, Nancy, Adjunct Instructor of Pharmacology and Toxicology; Pharm.D., University of Utah (1983).

Mitchell, Kent, Adjunct Assistant Professor of Pharmacology and Toxicology; Ph.D., Clemson University (1994).

Nicholson, John A., Adjunct Assistant Professor of Pharmacology and Toxicology; D.M.D., University of Louisville (1979); Ph.D., University of Louisville (1968).

Wedlund, Peter A., Adjunct Associate Professor of Pharmacology and Toxicology; Ph.D., Pharmaceutical Sciences, University of Washington (1981).

New Faculty Appointments

Cai, Jian, Instructor, effective February 1, 2003

Chesney, Jason, Assistant Professor (joint appointment), effective March 1, 2003

Fan, Theresa, Associate Professor (joint appointment), effective February 1, 2003

Gupta, Ramesh, Professor of Pharmacology and Toxicology, and Agnes Brown Duggan Chair of Oncological Research, effective April 1, 2003

Hetman, Michal, Assistant Professor (joint appointment), effective April 1, 2003

Hong, Jun-Yan, Adjunct Professor, effective January 1, 2003

Kennedy, Mary Jayne, Assistant Professor-term (joint appointment), effective February 1, 2003
Liu, Ye, Associate appointment, effective May 1, 2003

Mitchell, Kent, Adjunct Assistant Professor, effective February 1, 2003

Staff

Aiyer, Harini, Research Assistant
Arteel, Maia, Laboratory Assistant
Barker, David, Research Associate
Baumgarten, Sara, Student Assistant
Buck, Joshua, Student Assistant
Burke, Tom, Research Technologist II
Carpenter, Sharon, Executive Secretary
Doll, Mark, Research Associate
Greca, Edie, Business Manager III
Kellie, Brandon, Student Assistant
Lederer, Paul, Student Assistant
Liu, Marcia, Research Associate
Martini, Ben, Student Assistant
McNeely, Sam, Research Technologist II
Rubin-Teitel, Heddy, Program Assistant III
Smith, Leo, Student Assistant
Smith, Ned; Senior Research Technologist
Spurrier, Alexandra, Student Assistant
Suresh, Karthik, Student Assistant
Tucker, Alison, Lab/Research Technician III
Tucker, Lindsay, Lab/Research Technician III
Turner, Delano, Student Assistant
Vadhanam, Manicka, Senior Research Associate
Venugopal, Kamal, Research Associate
Wright, Terry, Research Associate
### Continuing Graduate Students

<table>
<thead>
<tr>
<th>Name</th>
<th>Advisor</th>
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<tbody>
<tr>
<td>Cristian Campian</td>
<td>Fred Benz</td>
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<tr>
<td>Wendy Chang</td>
<td>Theresa Chen</td>
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<td>Hainan Chen</td>
<td>Paul Epstein</td>
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<td>Denise Clark</td>
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<td>Chris Cunningham</td>
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<td>Chad Dumstorf</td>
<td>Glenn McGregor</td>
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<tr>
<td>Laila Elsherif</td>
<td>James Kang</td>
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<tr>
<td>April Hartford</td>
<td>Nick Delamere</td>
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<td>Prachi Hote</td>
<td>Shirish Barve</td>
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<td>Anwar Husain</td>
<td>David Hein</td>
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<td>Aleksandr Krivtsov</td>
<td>Len Waite</td>
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<td>Jason Lambert</td>
<td>James Kang</td>
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<td>Jian Li</td>
<td>John Eaton</td>
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<td>Nina Li</td>
<td>Paul Epstein</td>
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<td>Jin Liu</td>
<td>Michael Brier</td>
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<td>Jennifer Loehle</td>
<td>David Hein</td>
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<td>Kevyn Merten</td>
<td>James Kang</td>
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<td>Kristin Metry</td>
<td>David Hein</td>
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<tr>
<td>Tanvi Modi</td>
<td>Shirish Barve</td>
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<td>Miranda Nebane</td>
<td>Joe Song</td>
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<td>John Philipose</td>
<td>Michele Pisano</td>
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<td>Paul Porter</td>
<td>Chris States</td>
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<td>Stephen Reeves</td>
<td>David Gozal</td>
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<tr>
<td>Katie Richardson</td>
<td>Gavin Arteel</td>
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<td>Lebnan Saad</td>
<td>David Gozal</td>
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<td>Clare Shen</td>
<td>Paul Epstein</td>
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<td>Cindy Wang</td>
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<td>Nick Watson</td>
<td>Glenn McGregor</td>
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<td>Terry Wright</td>
<td>Steve Myers</td>
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<tr>
<td>Janet Zang</td>
<td>David Hein</td>
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<tr>
<td>Rundong Zhang</td>
<td>Joe Song</td>
</tr>
<tr>
<td>Yuanqi Zhu</td>
<td>David Hein</td>
</tr>
</tbody>
</table>
New Graduate Students

Balasubramanian Manickam
Barr, Johnny
Carrasquer, Alex
Davis, Molly
Habas, Agata
McNeely, Sam
Mosley, Lasharon
Mullins, Sheila
Nebane, Miranda
Njie, YaFatou
Reeves, Steve
Russell, Gilandra
Taylor, Frazier
Thornburg, Joshua
Wang, Lipeng
Walraven, Jason
Wiegand, Christina
Zhang, Susan

Postdoctoral Fellows

Ali, Yeakub
Bergheim, Ina
Guo, Luping
Jiang, Guo-hui
Kim, Tae Kang
Lambert, Jason
Mukhopadhyay, Suparna
Neale, Jason
Ravoori, Srivani
Thaiarambil, J. Thomas
Zhao, Shuang
V. Graduates

Mentor:  John W. Eaton, Ph.D.
Dissertation Title:  Oxygen toxicity and mitochondrial metabolism

**Yu (Janet) Zang**, M.S., 2003
Mentor:  David W. Hein, Ph.D.
Thesis Title:  Mechanistic studies on the T341C (Ile114Thr) single nucleotide polymorphism of human N-acetyltransferase 2

**Rundong (Ray) Zhang**, M.S., 2003
Mentor:  Zhao-Hui (Joe) Song, Ph.D.
Thesis Title:  Cysteine 89(2.69) in the second transmembrane domain of human CB2 receptor is exposed in the ligand binding crevice

**Hainan Chen**, Ph.D., 2003
Mentor:  Paul N. Epstein, Ph.D.
Dissertation Title:  Studies on the effects of pancreatic beta cell antioxidant transgenes on experimental models of diabetes

**Terry L. Wright, Jr.**, M.S., 2003
Mentor:  Gavin E. Arteel, Ph.D.
Thesis Title:  The TNFalpha paradox in ischemic heart disease

**Denise R. Clark**, M.S., 2003
Mentor:  W. Glenn McGregor, M.D.
Thesis Title:  Ribozyme-mediated REV1L inhibition reduces UV-induced mutations in the human HPRT gene

**Paul C. Porter**, M.S., 2003
Mentor:  J. Christopher States, Ph.D.
Thesis Title:  Detection and functional analysis of polymorphic XPA alleles

**Jason C. Lambert**, Ph.D., 2003
Mentor:  Y. James Kang, Ph.D.
Dissertation Title:  Zinc inhibition of acute ethanol-induced liver injury
VI. Publications (salaried and emeritus faculty)

Papers


92. Walraven, J. M., Doll, M. A., Martini, B. D., and Hein, D. W. Rattus norvegicus strain Sprague Dawley arylamine N-acetyltransferase 3 (NAT3) gene, complete cds. AY253757 2003. Ref Type: Electronic Citation

93. Walraven, J. M., Doll, M. A., Martini, B. D., and Hein, D. W. Rattus norvegicus strain F344 arylamine N-acetyltransferase 3 (NAT3) gene, complete cds. AY253758 . 2003. Ref Type: Electronic Citation

94. Walraven, J. M., Doll, M. A., Martini, B. D., and Hein, D. W. Rattus norvegicus strain WKY arylamine N-acetyltransferase 3 (NAT3) gene, complete cds. AY253759 . 2003. Ref Type: Electronic Citation


VII. Additional Publications of Faculty with Joint Appointments


VIII. Abstracts (salaried faculty and staff, and emeritus)


Research International Conference on Frontiers in Cancer Prevention Research Cancer Epidemiology, Biomarkers and Prevention 12:1336-1337s.


IX. Invited Scientific Presentations and Seminars (salaried faculty)

Dr. Gavin Arteel

01/03, “Alcohol, oval cells, and HCC; is there a connexin?”, University of Louisville, James Graham Browne Cancer Center, Louisville, KY.
02/03, “Oxidants and antioxidants in ALD”, University of Louisville, Dept of Medicine, Louisville, KY.
02/03, “Molecular mechanisms of alcoholic liver injury”, University of Louisville, Center for Genetics and Molecular Medicine, Louisville, KY.
03/03, “Inflammatory cell-derived oxidants in alcoholic liver disease: studies in vivo” SOT annual meeting, Salt Lake City, UT.
05/03, “Oxidative stress in chronic ALD”, University of Louisville, CVRC, Louisville, KY.
09/03, “Oxidants, antioxidants and alcoholic liver disease”, National Institutes of Health, NIAAA, Bethesda, MD.
10/03, “Enteral models of ALD”, Texas A&M University, Dept of Pathobiology, College Station, TX.
12/06, “Prevention of primary nonfunction by vesicular delivery of ATP”, University of Louisville/Jewish Hospital, AASLD wrap-up, Louisville, KY.

Dr. Frederick Benz

05/29/03, Department of Pharmacology and Toxicology, University of Louisville, KY.

Dr. Ramesh Gupta

Molecular Epidemiology Group of the Cancer Prevention & Control Program, James Graham Brown Cancer Center.

Dr. David W. Hein

01/03, “Pharmacogenetics and Pharmacogenomics in Medicine and Public Health”. American Association of University Women, Louisville, KY.
02/03, “Characterization of N-acetyltransferase-1 and –2 Genetic Polymorphisms.” Kentucky Lung Cancer Research Program 2003 Scientists Seminar, Frankfort, KY.
03/03, “Environmental Health Sciences at the University of Louisville.” Life Sciences without Boundaries, Bridges to Collaboration Conference, Cincinnati, OH.
05/03, “Functional Characterization and Epidemiological Significance of N-Acetyltransferase Genetic Polymorphisms,” Environmental Cardiology Group, University of Louisville, Louisville, KY.
06/03, “Genes and the Environment in Cancer Risk,” Optimists Club of Louisville, Louisville, KY.
09/03, “Syrian Hamster and Rat Models of the N-Acetylation Polymorphism,”
Department of Pharmacology, University of Oxford, United Kingdom.
09/03, “Pharmacogenetics: N-Acetyltransferase Genotype/phenotype Relationships and Implications for Chemical Carcinogenesis,” Department of Pharmacology, University of Oxford, United Kingdom.
09/03, “Genetic Polymorphisms in N-Acetyltransferases: A Possible Role in Cancer Predisposition”, Wellcome Trust Centre for Human Genetics, Oxford, United Kingdom.
11/03, “Functional Genomics of the N-acetyltransferases: Improving Cancer Risk Assessments from Environmental Toxicants,” Annual Meeting of the Ohio Valley Society of Toxicology, Cincinnati, OH.
12/03, “Pharmacogenomics of N-acetyltransferases: Implications for Cancer Risk,” Center for Genetics and Molecular Medicine, University of Louisville, Louisville, KY.

Dr. Y. James Kang

11/17/03, “Toxicologic cardiomyopathy and its prevention by metallothionein” Department of Pharmacology and Cell Biophysics, University of Cincinnati.
09/06/03, “Gene Therapy: Future Development in Clinical Application” Shenyang Pharmaceutical University, Shenyang, China.
09/05/03, “Biotechnology and Biomedical Research: Current State and Future Development” Annual Meeting of China Scientific Associations, Shenyang, China.
08/26/03, “Copper deficiency-induced heart hypertrophy: Transition to heart failure and reversibility” US Department of Agriculture, Grand Forks Human Nutrition Research Center.
05/08/03, “Zinc dynamic changes and the progression of cardiomyopathy.” “Zinc Signals 2003” Grand Cayman Islands.
05/07/03 “Zinc inhibition of liver apoptosis induced by acute exposure to ethanol.” “Zinc Signals 2003” Grand Cayman Islands.
04/04/03, “Metallothionein protection from oxidative myocardial injury” University of Michigan School of Public Health Environmental Health Sciences Toxicology Program.

Dr. W. Glenn McGregor

03/03, “Promiscuous polymerases and the price of infidelity. Biology of Aging Gordon.”

Dr. Steven R. Myers

03/04/03, “Assessing Environmental Exposures to Polycyclic Aromatic Hydrocarbons: Relationship between Personal Exposure to Polycyclic Aromatic Hydrocarbons and Biomarkers of Internal Dose,” University of Louisville, Center for Birth Defects.
04/16/03, “Influence of GSTM1 and NAT Genotypes on the Relationship between Personal exposure to Polycyclic Aromatic Hydrocarbons and Biomarkers of Internal Dose,” University of Illinois Chicago.

04/16/03, “Assessing Environmental Exposures to Polycyclic Aromatic Hydrocarbons: Relationship between Personal Exposure to Polycyclic Aromatic Hydrocarbons and Biomarkers of Internal Dose,” University of Illinois Chicago.

05/05/03, “Hemoglobin adducts as biomarkers of maternal and fetal tobacco exposure assessment,” Johns Hopkins University.

05/06/03, “Assessing Environmental Exposures to Polycyclic Aromatic Hydrocarbons: Relationship between Personal Exposure to Polycyclic Aromatic Hydrocarbons and Biomarkers of Internal Dose,” Johns Hopkins University.

10/13/03, “Polycyclic Aromatic Hydrocarbons – Biomarkers of Assessment,” Murray State University Department of Chemistry.

10/28/03, “Biomarkers of Environmental Carcinogens,” University of Louisville Brown Cancer Center, Cancer Prevention Group.

**Dr. Donald E. Nerland**

04/18/03, “A unified theory for coordinated transcriptional regulation of thiol antioxidants by chemoprotectants,” presented to the Cancer Prevention Group, University of Louisville.

07/21/03, “Is There Cross Talk Between the ARE/Nrf2 and NF-κB Signaling Pathways?” presented to the Liver Group, University of Louisville.

**Dr. J. Christopher States**

07/15/03, “Arsenic; Carcinogen or Chemotherapeutic” MD/Ph.D. Program, University of Louisville, Louisville, KY.
X. Research Grants and Contracts Submitted (salaried faculty)

Dr. Gavin E. Arteel

Optimizing direct ATP delivery to ischemic tissues (Co-I; Sufan Chien, PI) 10/01/03 – 09/30/08
Agency: NIH
Budget Requested: $6,237,563

Platelet-endothelial responses during lung reperfusion (Co-I; Andrew Roberts, PI) 07/01/03 – 06/30/08
Agency: NIH
Budget Requested: $1,475,000

Recovery from ALD with ebselen (PI) 04/01/04 – 03/31/07
Agency: NIH
Budget Requested: $447,500

Green tea polyphenol therapy for ALD (PI) 04/01/04 – 03/31/07
Agency: NIH
Budget Requested: $447,500

Role of SAMe in priming of macrophages due to alcohol (Co-I; Katherine Richardson, PI) 03/01/04 – 02/28/06
Agency: NIH
Budget Requested: $63,824

Prevention of liver transplant nonfunction with ATP vesicles (PI) 07/01/04 – 06/30/09
Agency: NIH
Budget Requested: $1,837,500

Gene expression in alcoholic liver (Co-I; Ion Deaciuc, PI) 09/01/03 – 08/31/05
Agency: NIH (NIAAA)
Budget Requested: $630,000

Egr-1: A candidate molecular target for treating ALD (Co-I; Laura Nagy, PI) 07/01/03 – 06/30/08
Agency: NIH (NIAAA)

Endothelium, hypoxia and hepatotoxicity (Co-I; Robert Roth, PI) 04/01/03 – 03/31/08
Agency: NIH

Dr. Jian Cai

Characteristic proteom following degradation of periodontal and cardiovascular tissues by the bacteria Porphyromonas gingivalis (Co-I; Saeed A. Jortani, PI) 04/01/04 – 03/31/06
Agency: NIDCR
Budget Requested: $403,875
### Dr. Theresa S. Chen

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Agency</th>
<th>Budget Requested</th>
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<tbody>
<tr>
<td>Glutathione intervention in diabetes mellitus (PI)</td>
<td>KSEF</td>
<td>$16,500</td>
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<td>Mechanisms of alcohol-induced immunosuppression (Co-I; Shirish Barve, PI)</td>
<td>NIAAA</td>
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<tr>
<td>Adomet and carinii pneumonitis (Co-I; Dr. Oz, PI)</td>
<td>NIH</td>
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<tr>
<td>Green tea polyphenols: A novel approach to IBD (Co-I; Dr. Oz, PI)</td>
<td>NIH</td>
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### Dr. David Gozal

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Agency</th>
<th>Budget Requested</th>
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</thead>
<tbody>
<tr>
<td>Aging, episodic hypoxia, and vagal cardiac projections (Co-I; Z. Cheng, PI) 06/01/02 – 05/31/07</td>
<td>NIH</td>
<td>$1,225,000</td>
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<tr>
<td>Sleep problems/Patters in autistic children (Co-I; P.G. Williams, PI) 07/01/02 – 06/30/04</td>
<td>NIH</td>
<td>$200,000</td>
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<td>Sleep and psychophysiological function in children (Co-I; D. Molfese, PI) 07/01/02 – 06/30/04</td>
<td>NIH</td>
<td>$1,250,000</td>
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<td>Cardiac efferents: Circuitry and regeneration (Co-I; Z. Cheng, PI) 07/01/02 – 06/30/04</td>
<td>NIH</td>
<td>$1,150,000</td>
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<td>Role of vagal afferents in hyperpnea (Co-I; J. Yu, PI) 06/01/02 – 05/31/07</td>
<td>NIH</td>
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<td>ROS in intermittent hypoxia-mediated neuronal cell death (Co-I; R. Liu, PI)</td>
<td>NIH</td>
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<td>MCT, intermittent hypoxia, and stroke (PI)</td>
<td>SCORE Project 2</td>
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<td>Neurocognitive function in snoring children (PI) 09/01/03 – 08/31/08</td>
<td>NIH/NHLBI</td>
<td>$2,030,000</td>
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<td>Monocarboxylate transporter in hypoxic pre-conditioning (Co-I; Y. Wang, PI)</td>
<td>NIH/NHLBI</td>
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<td>Dr. Evelyne Gozal</td>
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<td>Role of Hsp27 in regulation of PMN apoptosis (Co-I; Madhavi Rane, PI) 04/01/04 – 03/31/09</td>
<td>NIH/NIAID</td>
<td>$1,250,000</td>
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<td>Diet and susceptibility to intermittent hypoxia (Co-I; B.W. Row, PI) 04/01/04 – 03/30/09</td>
<td>NIH/NHLBI</td>
<td>$1,000,000</td>
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<td>Dr. Ramesh Gupta</td>
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<td>Dose effects on repair of chemical-induced DNA damage (Co-I; Christopher States, PI)</td>
<td>NIH</td>
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<td>Molecular analysis of human cervical cancer development (PI)</td>
<td>NCI</td>
<td>$1,947,142</td>
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<tr>
<td>Dr. David W. Hein</td>
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<tr>
<td>Molecular epidemiology of environmental/occupational diseases (PI) 07/01/04 – 06/30/09</td>
<td>NIH/NIEHS</td>
<td>$1,113,019</td>
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<td>Pharmacogenetics of drug and carcinogen metabolism (supplement) (PI) 04/01/04 – 06/30/08</td>
<td>NIH/NCI</td>
<td>$936,290</td>
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<td>Research in support of Amonafide study (PI) 01/01/04 – 12/31/04</td>
<td>Chemgenex</td>
<td>$5,670</td>
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<td>Biomarkers of carcinogen exposure in tobacco smoke (Co-I; Steven Myers, PI) 07/01/04 – 06/30/06</td>
<td>NIH</td>
<td>$404,250</td>
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<td>Nashville Breast Health Study (Subproject PI; Wei Zhen, PI) 07/01/07 – 06/30/08</td>
<td>NIH</td>
<td>$189,035</td>
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<td>Comprehensive biological training for dentists (Research Mentor; Denis Kinane, PI) 08/01/04 – 07/31/09</td>
<td>NIH</td>
<td>$2,615,607</td>
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<tr>
<td>Genetic polymorphisms in manganese superoxide dismutase (MnSOD) as a predictor of lung cancer (Co-I; Robert Martin, PI) 01/01/04 – 12/31/07</td>
<td>Kentucky Lung Cancer Research Program</td>
<td>$300,000</td>
</tr>
</tbody>
</table>
**Dr. David W. Hein (continued)**

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<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Phenotyping of CYP1A2 and NAT2 enzymes by LC/MS/MS (Co-I; Harrell Hurst, PI) 12/01/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
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<tr>
<td>Use of NAT1 and 2 SNP analysis and functional genomics to determine susceptibility to smoking-induced cancer (Collaborator; Kent Mitchell, PI) 03/01/04 – 02/28/07</td>
<td>Philip Morris USA</td>
<td>$906,575</td>
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<tr>
<td>Transcriptional regulation of human NAT1 and 2 genes (Collaborator; Kent Mitchell, PI) 07/01/04 – 06/30/06</td>
<td>NIH</td>
<td>$1,479,409</td>
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<tr>
<td>Evaluation of N-acetyltransferase 1 and N-acetyltransferase 2 expression in pancreatic adenocarcinoma and relation to chemoresistance (Co-I; Robert Martin, PI) 07/01/04 – 06/30/06</td>
<td>AACR</td>
<td>$100,000</td>
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<tr>
<td>DOD FY03 Breast Cancer research Program Predoctoral Fellowship (Mentor; Anwar Husain, PI) 12/1/03 – 11/30/05</td>
<td>Department of Defense</td>
<td>$60,000</td>
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<tr>
<td>Molecular Biomarkers of Tobacco Smoke Exposure (Co-I; Steven Myers, PI) 07/01/04 – 06/30/07</td>
<td>Philip Morris USA</td>
<td>$1,119,047</td>
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<tr>
<td>Center for Pediatric Clinical Pharmacology Research (Director, Pharmacogenetics Core laboratory; Janice Sullivan, PI) 01/01/04 – 12/31/08</td>
<td>NIH/NICHD</td>
<td>$1,862,408</td>
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<tr>
<td>Kosair Charities Birth Defects Research Fellowship (Mentor, Co-I; Jason Neale, PI) 01/01/04 – 12/31/04</td>
<td>Kosair Charities</td>
<td>$25,000</td>
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<tr>
<td>Effects of environmental tobacco smoke exposure on DNA adduct formation in rapid and slow acetylator rat mothers, fetuses, and neonates (Mentor, Co-I; Jason Neale, PI) 01/01/04 – 12/31/05</td>
<td>Philip Morris USA</td>
<td>$86,400</td>
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<tr>
<td>Regulatory genes of NFkappaB and their effect on IBD (Co-I; Susan Galandiuk, PI) 04/01/04 – 03/31/06</td>
<td>NIH</td>
<td>$293,750</td>
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</tbody>
</table>
### Dr. David W. Hein (continued)

<table>
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<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>Cigarette smoke exposure and IBD (Co-I; Susan Galandiuk, PI) 04/01/04 – 03/31/07</td>
<td>Philip Morris USA</td>
<td>$440,416</td>
</tr>
<tr>
<td>Cigarette smoke exposure and IBD (Co-I; Susan Galandiuk, PI) 04/01/04 – 03/31/07</td>
<td>NIH</td>
<td>$293,416</td>
</tr>
<tr>
<td>Gene expression in UC dysplasia/cancer (Co-I; Susan Galandiuk, PI) 04/01/04 – 03/31/06</td>
<td>NIH</td>
<td>$293,750</td>
</tr>
<tr>
<td>Cigarette smoke exposure and IBD (Co-I; Susan Galandiuk, PI) 04/01/04 – 03/31/06</td>
<td>NIH</td>
<td>$293,750</td>
</tr>
<tr>
<td>Genetic polymorphisms in manganese superoxide dismutase (MnSOD) as a predictor of lung cancer (Co-I; Robert Martin, PI) 01/01/04 – 12/31/04</td>
<td>Kentucky Lung Cancer Research Program</td>
<td>$300,000</td>
</tr>
<tr>
<td>Oxidative stress in the progression of Barrett’s esophagus to adenocarcinoma (Co-I; Robert Martin, PI) 07/01/04 – 06/30/06</td>
<td>Sidney Kimmel Foundation for Cancer Research</td>
<td>$200,000</td>
</tr>
<tr>
<td>Predictive NAT polymorphism in pancreatic cancer (Co-I; Robert Martin, PI) 04/01/04 – 03/30/06</td>
<td>NIH</td>
<td>$146,875</td>
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<tr>
<td>Genetic polymorphisms in Manganese superoxide dismutase (MnSOD) as a predictor of lung cancer (Co-I; Robert Martin, PI) 07/01/04 – 06/30/06</td>
<td>American Lung Association</td>
<td>$70,000</td>
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<tr>
<td>Predictive NAT polymorphism in pancreatic cancer (Co-I; Robert Martin, PI) 01/01/05 – 12/31/07</td>
<td>NIH</td>
<td>$100,000</td>
</tr>
<tr>
<td>Genetic polymorphisms in the 5’-UTR of human NAT1 and NAT2 (PI) 12/01/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
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<tr>
<td>Prostate cancer susceptibility: Smoking and NAT SNPs (Collaborator) 04/01/04 – 03/31/06</td>
<td>NIH</td>
<td>$138,450</td>
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<tr>
<td>Mechanistic studies on the NAT2 genetic polymorphism: a potential factor that modifies individual breast cancer risk (Mentor, Co-I; Yu Zang, PI) 05/01/04 – 04/30/06</td>
<td>Susan G. Komen Breast Cancer Foundation</td>
<td>$30,000</td>
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</table>
### Dr. David W. Hein (continued)

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<tr>
<th>Project Description</th>
<th>Agency</th>
<th>Budget Requested</th>
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<tbody>
<tr>
<td>Environmental genomics and molecular epidemiology of lung cancer (PI) 10/01/03 – 09/30/04</td>
<td>Kentucky Lung Cancer Research Program</td>
<td>$99,983</td>
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<tr>
<td>University of Louisville Oncology Training Program (Faculty Mentor; Donald Miller, PI) 07/01/04 – 06/30/09</td>
<td>NIH</td>
<td>$1,187,734</td>
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<tr>
<td>Biomarkers of maternal and fetal tobacco exposure (Co-I; Steven Myers, PI) 07/01/03 – 06/30/06</td>
<td>Kentucky Lung Cancer Res. Fdn.</td>
<td>$291,300</td>
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### Dr. Harrell E. Hurst

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<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>West Louisville partnership for environmental justice (Co-I; David Tolerud, PI) 08/01/03 – 07/31/07</td>
<td>NIH</td>
<td>$899,681</td>
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<tr>
<td>Molecular biomarkers of tobacco smoke exposure (Co-I; Steve Myers, PI) 07/01/04 – 06/30/07</td>
<td>Philip Morris USA</td>
<td>$764,038</td>
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<tr>
<td>Biomarkers of carcinogen exposure in tobacco smoke (Co-I; Steve Myers, PI) 07/01/04 – 06/30/06</td>
<td>NIH</td>
<td>$275,000</td>
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<tr>
<td>Phenotyping of CYP1A2 and NAT2 enzymes by LC/MS/MS (PI)</td>
<td>CGeMM Pilot Project Award Program</td>
<td>$30,000</td>
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<tr>
<td>Center for Pediatric Clinical Pharmacology Research (Janice Sullivan, PI) 01/01/04 – 12/31/08</td>
<td>NIH/NICHD</td>
<td>$1,862,408</td>
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### Dr. Y. James Kang

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<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>Cadmium Cardiotoxicity (PI)</td>
<td>Philip Morris USA</td>
<td>$786,800</td>
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<tr>
<td>Metallothionein and hepatic oxidative stress (Co-I; Wolfgang Maret, PI)</td>
<td>NIH/NIAAA</td>
<td>$3,085,971</td>
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<tr>
<td>Zinc and alcohol-induced oxidative liver injury (Co-I; James Kang, PI)</td>
<td>NIH/NIAAA</td>
<td>$1,000,000</td>
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<tr>
<td>Arsenic trioxide cardiotoxicity and prevention (PI)</td>
<td>NIH/NIEHS</td>
<td>$1,634,000</td>
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<tr>
<td><strong>Dr. W. Glenn McGregor</strong></td>
<td><strong>Agency</strong></td>
<td><strong>Budget Requested</strong></td>
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<tr>
<td>Host responses to simulated space travel stresses (Co-I; Eugenia Wang, PI) 10/01/03 – 09/30/04</td>
<td>NASA Cell Science Program</td>
<td>$131,982</td>
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<tr>
<td>Inflammation and mutagenesis in lung carcinogenesis 12/01/03 – 11/30/04</td>
<td>CGeMM –UofL</td>
<td>$30,000</td>
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<tr>
<td>Inflammation and mutagenesis in lung cancer</td>
<td>Philip Morris USA Fellowship</td>
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<tr>
<th><strong>Dr. Steven R. Myers</strong></th>
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<th><strong>Budget Requested</strong></th>
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<tr>
<td>Biomarkers of maternal and fetal tobacco smoke exposure (PI) 08/01/02 – 06/30/04</td>
<td>Kentucky Lung Cancer Research Foundation</td>
<td>$96,426</td>
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<tr>
<td>Biomarkers for air pollutants: Development of hemoglobin adduct methodology for assessment of exposure to butadienes and polycyclic aromatic hydrocarbons (Co-I; Harrell Hurst, PI)</td>
<td>Kentucky EPSCoR Program</td>
<td>$753,654</td>
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<tr>
<td>Analysis of urine samples for carcinogenic PAHs (PI) 02/24/04 – 02/03/05</td>
<td>USEPA</td>
<td>$89,935</td>
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<tr>
<th><strong>Dr. William M. Pierce, Jr.</strong></th>
<th><strong>Agency</strong></th>
<th><strong>Budget Requested</strong></th>
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</thead>
<tbody>
<tr>
<td>Center for Regulatory Metabolomics (Co-I; Teresa Fan, PI) 2004 – 2007</td>
<td>NSF</td>
<td>$3,000,000</td>
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<tr>
<td>Pediatric Clinical Proteomic Center (Co-I; Mary Jayne Kennedy, PI) 2004 - 2009</td>
<td>Department of Energy</td>
<td>$1,985,000</td>
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<tr>
<td>Cellular and Molecular Bases of Iron Toxicity (Co-I; John W. Eaton, PI) 2004 - 2009</td>
<td>NIH</td>
<td>$1,653,188</td>
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<tr>
<td>General Clinical Research Center (Co-I; Joel A. Kaplan, PI) 2004 - 2008</td>
<td>NIH</td>
<td>$7,250,614</td>
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<tr>
<td>Roles of Smurf1 in Cbfa1 Degradation and Bone Formation (Co-I; Di Chen, PI) 2004 – 2009</td>
<td>NIH</td>
<td>$1,600,000</td>
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<tr>
<td>George O’Brien Center for Renal Proteomics (Co-I; Jon B. Klein, PI) 2004 – 2009</td>
<td>NIH</td>
<td>$3,741,402</td>
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### Dr. William M. Pierce, Jr. (continued)

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<tr>
<th>Project Description</th>
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<tr>
<td>Kinase Pathways in Diabetic Nephropathy (Co-I; Kenneth R. McLeish, PI) 2004 – 2009</td>
<td>NIH</td>
<td>$1,836,875</td>
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<tr>
<td>Kinase Regulation of Neutrophil Exocytosis (Co-I; Kenneth R. McLeish, PI) 2004 – 2009</td>
<td>NIH</td>
<td>$1,837,500</td>
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### Dr. Zhao-hui (Joe) Song

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<thead>
<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>Structure and function of CB2 cannabinoid receptor (PI) 12/01/03 – 11/30/08</td>
<td>NIH</td>
<td>$1,468,833</td>
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<tr>
<td>New methods for studying CB1 structure and function (PI) 04/01/04 – 03/30/07</td>
<td>NIH</td>
<td>$439,344</td>
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<tr>
<td>Purification and characterization of CB1 (PI)</td>
<td>NIH</td>
<td>$286,000</td>
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<tr>
<td>Molecular epidemiology – Environmental/occupational diseases (Co-I; David W. Hein, PI) 07/01/04 – 06/30/09</td>
<td>NIEHS</td>
<td>$1,240,452</td>
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### Dr. J. Christopher States

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<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>Murine model for arsenic induced atherogenesis (PI) 12/1/03 – 11/30/04</td>
<td>CGeMM Pilot Project, UofL</td>
<td>$30,000</td>
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<tr>
<td>Genetic polymorphisms in 5’-UTR of human NAT1 and NAT2 (Co-I) 12/1/03 – 11/30/04</td>
<td>CGeMM Pilot Project, UofL</td>
<td>$30,000</td>
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<tr>
<td>Chromium DNA damage and nucleotide excision repair (PI) 12/01/03 – 11/30/07</td>
<td>NIH/George Washington Univ.</td>
<td>$146,000</td>
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<tr>
<td>Dose effects on repair of chemical-induced DNA damage (PI) 12/01/03 – 11/30/06</td>
<td>NIH/NIEHS</td>
<td>$550,520</td>
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<tr>
<td>Dose effects on repair of chemical-induced DNA damage (PI) 07/01/04 – 06/30/07</td>
<td>NIH/NIEHS</td>
<td>$748,250</td>
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<tr>
<td>Arsenic inhibition of mitotic progression (Mentor) 05/01/04 – 07/31/07</td>
<td>NIH/NIEHS</td>
<td>$81,884</td>
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</table>
XI. Research Grants and Contracts in Force (salaried faculty)

<table>
<thead>
<tr>
<th>Dr. Gavin E. Arteel</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Hypoxia and free radicals in alcoholic pancreatitis (PI) 08/01/01-07/31/06</td>
<td>NIH (NIAAA)</td>
<td>$555,846</td>
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<tr>
<td>Control of drug and ethanol metabolism (PI) 11/01/01-06/30/04</td>
<td>NIH (NIAAA)</td>
<td>$594,413</td>
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<tr>
<td>Prevention of hepatic ischemia reperfusion injury by liposomal delivery of ATP (PI) 01/01/03 – 12/31/03</td>
<td>Intramural IRIG Grant</td>
<td>$10,000</td>
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<tr>
<td>Oval cells in alcoholic hepatocellular carcinoma (Co-I; Jason Lambert, PI) 07/01/03 – 06/30/04</td>
<td>James Graham Brown Cancer Center</td>
<td>$28,000</td>
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<tr>
<th>Dr. Jian Cai</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Cardiovascular toxicity of environmental aldehydes (Co-I; Aruni Bhatnagar, PI) 07/01/03 – 06/30/08</td>
<td>NIH</td>
<td>$6,986,000</td>
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<tr>
<th>Dr. Theresa S. Chen</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Nutritional Modulation of Glutathione Status and Longevity (PI) 07/01/02 – 06/30/03</td>
<td>Kentucky Science and Technology Corporation</td>
<td>$15,000</td>
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<tr>
<td>Oral Antioxidant/Anticytokine Therapy for ALD (Co-I; Dan Hill, PI) 08/01/02 – 07/31/06</td>
<td>NIAAA</td>
<td>$1,000,000</td>
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<thead>
<tr>
<th>Dr. Paul N. Epstein</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Altered glucose homeostasis by sleep impairment (PI) 09/30/03 – 06/30/07</td>
<td>NIH/NHLBI</td>
<td>$200,000</td>
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<tr>
<td>β-cell antioxidant transgenes in diabetes and transplantation (PI) 09/01/00 – 08/31/04</td>
<td>NIH/NIDDK</td>
<td>$125,000</td>
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<tr>
<td>Reducing diabetic cardiomyopathy by increasing glycolysis (PI) 09/30/00 – 09/29/04</td>
<td>NIH/NHLBI</td>
<td>$172,000</td>
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<tr>
<td>Antioxidant transgenes in diabetic cardiomyopathy (PI) 08/01/99 – 07/30/07</td>
<td>NIH/NHLBI</td>
<td>$200,000</td>
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</table>
### Dr. Paul N. Epstein (continued)

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Molecular determinants of developmental defects (Co-I; Ye Qi Liu, PI) 09/29/02 – 09/30/07</td>
<td>NIH/NGA</td>
<td>$1,080,000</td>
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<tr>
<td>Analysis of diabetic nephropathy (Co-I; Jon Klein, PI) 7/1/02-6/30/04</td>
<td>NIH</td>
<td>$100,000</td>
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### Dr. David Gozal

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Neurocognitive function in snoring children (PI) 10/01/99 - 07/31/2003</td>
<td>NHLBI</td>
<td>$1,000,000</td>
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<tr>
<td>Sleep episodic hypoxia and memory deficit in aging rats: Protection by platelet-activating factor antagonists (PI) 01/00-12/02</td>
<td>American Heart Association</td>
<td>$214,500</td>
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<tr>
<td>REM sleep deprivation, hypoxia, and hippocampal function (PI) 09/01/00-6/30/2004</td>
<td>NHLBI</td>
<td>$900,000</td>
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<tr>
<td>Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J.B. Klein, P.I.) 10/01/00 -06/30/04</td>
<td>NHLBI</td>
<td>$700,000</td>
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<tr>
<td>Sleep Associated Learning Morbidity in 3-4 Year Old Children (PI) 07/01/01 - 09/30/02</td>
<td>Department of Education</td>
<td>$921,000</td>
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<tr>
<td>Pulse Arterial Tonometry in Sleeping Children (PI) 08/01/01 - 07/31/03</td>
<td>Itamar Ltd.</td>
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<tr>
<td>CPAP vs. BiPAP in Children with OSA (PI) 10/1/01 - 09/30/02</td>
<td>ResMed Corporation</td>
<td>$7,800</td>
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<tr>
<td>Postnatal Brain Susceptibility to Intermittent Hypoxia (PI) 03/01/02 - 02/28/06</td>
<td>NHLBI</td>
<td>$1,250,000</td>
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<tr>
<td>Reversal of Learning Deficits in 3-4 Year Old Children with Obstructive Sleep Apnea (PI) 07/01/02 - 06/30/03</td>
<td>Department of Education</td>
<td>$500,000</td>
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<tr>
<td>Neurocognitive Function in Snoring Children (PI) 03/01/02-07/31/03</td>
<td>NIH/Minority Supplement Grant</td>
<td>$200,000</td>
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<tr>
<td>Dr. David Gozal (continued)</td>
<td>Agency</td>
<td>Project Award</td>
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<tr>
<td>Whole-Body Hypoxic Pre-Conditioning (Co-I; Yang Wang, M.D., Ph.D., PI) 06/01/02-05/31/03</td>
<td>Department of Defense</td>
<td>$150,000</td>
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<tr>
<td>Role of Vagal Afferents in Hyperpnea (Co-I; Jerry Yu, Ph.D., PI) 01/01/03-12/31/07</td>
<td>NHLBI</td>
<td>$1,100,000</td>
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**Dr. Evelyne Gozal**

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<th>Project Description</th>
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<tr>
<td>Hypoxia-induced Akt signaling module in neuronal cells (PI) 07/01/03 – 06/30/08</td>
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<td>$1,250,000</td>
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<tr>
<td>Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; Jon B. Klein, PI) 10/01/00 – 09/30/04</td>
<td>NHLBI</td>
<td>$700,000</td>
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<tr>
<td>Postnatal brain susceptibility to intermittent hypoxia (Co-I; D. Gozal, PI) 04/01/02 – 03/31/06</td>
<td>NHLBI</td>
<td>$1,000,000</td>
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**Dr. Ramesh Gupta**

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<th>Project Description</th>
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<tr>
<td>Techniques for detecting and identifying DNA adducts (PI) 09/98 – 06/04</td>
<td>NCI</td>
<td>$57,137</td>
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<tr>
<td>Superfund chemicals: Transport, metabolism and toxicity (Co-I; Bernie Henning, PI) 04/97 – 03/05</td>
<td>NIEHS</td>
<td>$215,670</td>
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<tr>
<td>Breast cancer etiology (PI) 11/01 – 10/05</td>
<td>NCI</td>
<td>$1,093,925</td>
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<td>Chemoprevention of experimental tobacco tumorigenesis (PI) 06/02 – 04/05</td>
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<td>$1,461,364</td>
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<td>Role of antioxidants in breast cancer prevention (PI) 04/02 – 03/04</td>
<td>NCI</td>
<td>$112,684</td>
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<td>Etiology &amp; prevention of lung cancer (PI) 01/02 – 12/04</td>
<td>Kentucky Lung Cancer Research Board</td>
<td>$116,835</td>
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<tr>
<td>Dr. David W. Hein</td>
<td>Agency</td>
<td>Project Award</td>
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<td>Pharmacogenetics of drug and carcinogen metabolism (PI) 09/01/97 – 06/30/03</td>
<td>NIH/NCI</td>
<td>$1,859,936</td>
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<td>Effect of acetylator genotype on genotoxicity from aromatic and heterocyclic</td>
<td>Philip Morris USA</td>
<td>$615,848</td>
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<td>amine carcinogens (PI) 07/01/02 – 06/30/05</td>
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<tr>
<td>Environmental genomics and molecular</td>
<td>Kentucky Lung Cancer</td>
<td>$299,949</td>
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<td>epidemiology of lung cancer (PI) 10/1/01 – 09/30/04</td>
<td>Research Program</td>
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<tr>
<td>Education in genetics ethics (EDGE) (Co-I); Mark Rothstein (PI) 5/3/02 – 03/31/05</td>
<td>NIH</td>
<td>$1,360,592</td>
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<tr>
<td>Hybrid quadrupole – Time of flight mass</td>
<td>NIH</td>
<td>$500,000</td>
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<tr>
<td>spectrometer (Major user and member of technical advisory committee; William</td>
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<tr>
<td>M. Pierce, Jr., PI) 04/01/02 – 03/31/04</td>
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<tr>
<td>Biomarkers of maternal and fetal tobacco smoke exposure (Co-I; Steven R. Myers,</td>
<td>Kentucky Lung Cancer</td>
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<td>PI) 07/01/02 – 06/30/04</td>
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<td>James Graham Brown P20 Application (Project Director; Donald M. Miller, PI)</td>
<td>NIH/NCI</td>
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<td>08/02/02 – 07/31/05</td>
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<tr>
<td>Cancer Education Grant Program (Mentor; Norbert J. Burzynski, PI) 08/01/02 –</td>
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<td>07/31/07</td>
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<tr>
<td>Functional genomics of the human N-</td>
<td>CGeMM</td>
<td>$10,000</td>
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<tr>
<td>acetyltransferase 1 polymorphism (Research Mentor; Yuanqi Zhu, PI) 07/01/02 –</td>
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<tr>
<td>06/30/03</td>
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<tr>
<td>Single nucleotide polymorphisms: Mechanisms for functional changes in N-</td>
<td>CGeMM</td>
<td>$10,000</td>
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<td>acetyltransferase 2 (NAT2) (Research Mentor; Yu Zang, PI) 07/01/02 – 06/30/03</td>
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<td>Pharmacogenetics of drug and carcinogen metabolism (minority supplement) (PI)</td>
<td>NIH/NCI</td>
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<td>12/01/00 – 06/30/03</td>
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### Dr. David W. Hein (continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Agency</th>
<th>Project Award</th>
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<tbody>
<tr>
<td>Pharmacogenetics of drug and carcinogen metabolism (PI) 07/01/03 – 06/30/08</td>
<td>NCI</td>
<td>$1,724,900</td>
</tr>
<tr>
<td>Cardiovascular toxicity of environmental aldehydes (Co-I; A. Bhatnagar, PI; R. Prough, Project PI) 07/01/03 – 06/30/08</td>
<td>NIH/NIEHS</td>
<td>$6,986,060</td>
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<tr>
<td>Metabolism and Detoxification of Base Propenals (Collaborator; S. Srivastava, PI) 06/01/03 – 03/31/08</td>
<td>NIH</td>
<td>$1,559,485</td>
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<tr>
<td>Metabolism and toxicity of aromatic amines associated with hair dyes (PI) 07/01/02 – 08/31/04</td>
<td>Procter and Gamble Inc.</td>
<td>$310,885</td>
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<tr>
<td>Research in support of Amonafide study (PI) 07/01/02 – 06/30/03</td>
<td>Chemgenex Therapeutics</td>
<td>$2,394</td>
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<tr>
<td>Genetic polymorphisms in manganese superoxide dismutase (MnSOD) as a predictor of lung cancer (Co-I; R. Martin, PI) 03/01/03 – 02/28/04</td>
<td>James Graham Brown Cancer Center</td>
<td>$30,000</td>
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<tr>
<td>Histamine pharmacogenetics in children with atopic dermatitits (Collaborator/Mentor; Mary Jayne Kennedy, PI) 07/01/03 – 06/30/04</td>
<td>Research Institute of the American College of Pharmacy</td>
<td>$12,500</td>
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<tr>
<td>Genetic polymorphisms in the 5’-UTR of human NAT1 and NAT2 (PI) 12/01/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
</tr>
<tr>
<td>Genetic polymorphisms in the 5’-UTR of human NAT1 and NAT2 (Mentor) NRSA Fellowship for Anwar Husain 07/01/03 – 06/30/05</td>
<td>NIEHS</td>
<td>$51,248</td>
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</table>

### Dr. Harrell E. Hurst

<table>
<thead>
<tr>
<th>Description</th>
<th>Agency</th>
<th>Project Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomarkers for air pollutants, R-829419E02 (PI) 10/01/01 – 09/30/04</td>
<td>USEPA/EPSCoR</td>
<td>$753,654</td>
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<tr>
<td>Cardiovascular toxicity of environmental aldehydes (Co-I; A. Bhatnagar, PI) 07/01/03 – 06/30/08</td>
<td>NIH/NIEHS</td>
<td>$6,986,060</td>
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<tr>
<td><strong>Dr. W. Glenn McGregor</strong></td>
<td><strong>Agency</strong></td>
<td><strong>Project Awarded</strong></td>
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<tr>
<td>Mechanisms of mutagenic processing of DNA damage, CA 73984 (PI) 08/01/97 – 07/31/03</td>
<td>NCI</td>
<td>$513,016</td>
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<tr>
<td>Mechanisms of BPDE-induced mutagenesis and mutation avoidance (PI) 10/01/01 – 09/30/04</td>
<td>Kentucky Lung Cancer Research Program</td>
<td>$225,000</td>
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<tr>
<td>Shared genomic responses to space flight and aging (Co-I; Eugenia Wang, PI) 05/01/03 – 04/30/04</td>
<td>NASA Cell Science Program</td>
<td>$115,000</td>
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<tr>
<td>Inflammation and mutagenesis in lung carcinogenesis (PI) 12/01/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
</tr>
<tr>
<td>Role of chemoattractant-mediated inflammation in development and progression of lung cancer (Co-I with Harri Bodduluri) 10/01/03 – 9/30/06</td>
<td>Kentucky Lung Cancer Research Board</td>
<td>$270,000</td>
</tr>
<tr>
<td>Cancer Education Grant Program (Participating mentor); Norbert Burzynski (PI) 9/01/2002-8/31/2007</td>
<td>NIH/NCI</td>
<td>$516,145</td>
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<tr>
<td>Molecular Strategies to Avoid Mutagenesis by Cigarette Smoke-Associated Carcinogens (PI) 6/01/2002-5/31/2005</td>
<td>Philip Morris USA</td>
<td>$349,700</td>
</tr>
<tr>
<td>Biacore 3000 Shared Instrument Grant (Participating Investigator; Donald Miller, PI)</td>
<td>National Center for Research Resources</td>
<td>$270,000</td>
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</tbody>
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<thead>
<tr>
<th><strong>Dr. Steven R. Myers</strong></th>
<th><strong>Agency</strong></th>
<th><strong>Project Awarded</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomarkers for air pollutants: Development of hemoglobin adduct methodology for assessment of exposure to butadienes and polycyclic aromatic hydrocarbons (Co-I; H.E. Hurst, PI) 10/01/01 – 09/30/03</td>
<td>Kentucky EPSCoR Program</td>
<td>$753,654</td>
</tr>
<tr>
<td>Biomarkers of maternal and fetal tobacco smoke exposure (PI) 08/01/02 – 06/30/04</td>
<td>Kentucky Lung Cancer Research Foundation</td>
<td>$96,426</td>
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</tbody>
</table>
**Dr. Steven R. Myers (continued)**

| Analysis of urine samples for carcinogenic PAHs (PI) 02/04/04 – 02/03/05 | USEPA | $89,935 |

**Dr. William M. Pierce, Jr.**

| Proteomic Analysis of Diabetic Nephropathy (Co-I; J.B. Klein, PI) 2002-2004 | NIH/NIDDK | $200,000 |
| Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J.B. Klein, PI) 10/00-9/04 | NIH | $1,653,750 |
| Evolution of a pheromone signaling system (Co-I; Lynne Houck, PI) 07/15/01 - 07/14/04 | NSF-Subcontract to UofL from Oregon State University. | $500,000 |
| Toxicity and Detoxification of 4-hydroxyalkenals in Heart (Co-I; A. Bhatnagar, PI) 10/00-9/04 | NIH | $1,220,000 |
| Cardioprotective effects of ethanol (Co-I; A. Bhatnagar, PI) 10/00-9/04 | NIH | $144,000 |
| Gene Expression of Persistent Chlamydia (Co-I; J.T. Summersgill, PI) December 2001 – November 2006 | NIH | $1,200,000 |
| Analysis of PTH and Dopamine Receptor Signaling in Proximal Tubules (Co-I; Eleanor Lederer, PI) August 2001 - July 2005 | Veterans Administration | $665,500 |
| Seed investment in biotechnology (Co-I; Patrick Migliore Novera, PI) 12/02 – 12/03 | Kentucky Science and Technology Corporation | $100,000 |

**Dr. Peter P. Rowell**

<p>| Effects of self-administered versus noncontingent nicotine (Co-I; A.R. Caggiula, PI) 10/01/00 – 09/30/05 | NIH | $819,469 |
| Postnatal brain susceptibility to intermittent hypoxia (Co-I; D.A. Gozal, PI) 04/01/2002 – 03/31/2007 | NIH (NHLBI) | $1,250,000 |</p>
<table>
<thead>
<tr>
<th>Dr. Peter P. Rowell (continued)</th>
<th>Agency</th>
<th>Project Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose and time dependent effects of nicotine on bone blood flow (Co-I; C.S. Roberts, PI) 01/01/03 – 12/31/03</td>
<td>Fischer-Owen Orthopaedic Trust Fund</td>
<td>$8,517</td>
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<tr>
<th>Dr. Zhao-Hui (Joe) Song</th>
<th>Agency</th>
<th>Project Award</th>
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</thead>
<tbody>
<tr>
<td>Structure and function of CB2 cannabinoid receptor, DA11551 (PI) 09/30/98 – 02/01/04</td>
<td>NIH</td>
<td>$507,304</td>
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<tr>
<td>Cannabinoid receptors-potential targets for novel antiglaucoma drugs (PI) 08/01/03 – 07/31/07</td>
<td>NIH</td>
<td>$1,174,166</td>
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<tr>
<td>The characterization of the human CB1 receptor (Mentor; Brandon Kellie, PI) 09/15/03 – 08/15/04</td>
<td>UofL Research Scholar Program</td>
<td>$3,000</td>
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<thead>
<tr>
<th>Dr. J. Christopher States</th>
<th>Agency</th>
<th>Project Award</th>
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</thead>
<tbody>
<tr>
<td>Mechanisms of Chemoresistance in Ovarian Cancer (PI) 06/01/01 - 05/31/03</td>
<td>Elsa U. Pardee Foundation</td>
<td>$128,418</td>
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<tr>
<td>Pharmacogenetics of drug and carcinogen metabolism 07/01/02 - 06/30/07 (Co-I; David W. Hein, PI)</td>
<td>NCI</td>
<td>$2,510,251</td>
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<tr>
<td>Cancer Education Grant Program (Participating mentor); Norbert J. Burzynski (PI) 12/01/02 - 11/30/07</td>
<td>NCI</td>
<td>$557,437</td>
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<tr>
<td>Arsenic induced mitotic arrest associated apoptosis (PI) 07/01/03 – 06/30/08</td>
<td>NIEHS</td>
<td>$1,385,869</td>
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<tr>
<td>Murine model for arsenic induced atherogenesis (PI) 12/1/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
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<tr>
<td>Metabolism and detoxification of base propenals (Co-I; S. Srivastava, PI) 06/01/03 – 03/31/08</td>
<td>NIEHS</td>
<td>$1,650,750</td>
</tr>
<tr>
<td>Genetic polymorphisms in 5’-UTR of human NAT1 and NAT2 (Co-I) 12/01/03 – 11/30/04</td>
<td>CGeMM</td>
<td>$30,000</td>
</tr>
</tbody>
</table>
XII. Teaching

School of Medicine

The Department team-taught the Medical Pharmacology course to second year medical students. Dr. Mike Williams served as course director. Individual faculty contributions are identified in the Appendix.

School of Dentistry

The Department team-taught the Dental Pharmacology and Therapeutics course to second year dental students. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

The Department team-taught a Pharmacology course to second year students in the Dental Hygiene Program. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

School of Nursing

The Department team-taught a Basic Pharmacology for Nursing course to second year nursing students. The course is also cross-listed as Biology 390 and is taken by other undergraduate students. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

The Department team-taught an Advanced Pharmacology course to graduate nursing students. Dr. Leonard Waite served as course director. Individual faculty contributions are identified in the Appendix.

Graduate School

The Department team-taught several courses for graduate students. The individual courses and course directors were as follows:

- Principles of Drug Action (Dr. Frederick Benz)
- Research Methods (Dr. Chris States and Dr. Joe Song)
- Pharmacology Seminar (Dr. Donald Nerland)
- Graduate Pharmacology (Dr. Len Waite)

Individual faculty contributions to these courses are identified in the Appendix.
XIII. Standing Committees

Graduate Program Committee
Dr. William Pierce (Chair)
Dr. Chris States (2005)
Dr. Gavin Arteel (2004)
Dr. Peter Rowell (2003)
Paul Porter (student representative)

PBSI/Grievance Committee
Dr. Peter Rowell (Chair)
Dr. Don Nerland (2005)
Dr. Harrell Hurst (2004)
Dr. Mike Williams (2003)

Teaching Evaluation Committee
Dr. Mike Williams (Chair)
Dr. Len Waite (2005)
Dr. Fred Benz (2004)
Dr. Harrell Hurst (2003)

Seminar Committee
Dr. Don Nerland (Chair)
Dr. Fred Benz (2005)
Dr. Steve Myers (2004)
Dr. Evelyne Gozal (2003)

Core Laboratories/Research Development Committee
Dr. Chris States (Chair)
Dr. Glenn McGregor (2005)
Dr. Theresa Chen (2004)
Dr. Steve Myers (2003)

Information Technology Committee
Dr. Gavin Arteel
Dr. Fred Benz
Dr. Harrell Hurst