Department of Pharmacology & Toxicology

2004 Annual Report

University of Louisville

School of Medicine

Department of Pharmacology and Toxicology-2004

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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

- **La Creis Renee Kidd, PhD, MPH** was appointed Assistant Professor of Pharmacology and Toxicology and Our Highest Potential Endowed Chair in Cancer Research. Dr. Kidd received her B.S from Spelman College. She received her PhD in Toxicology from Massachusetts Institute of Technology as an NIEHS-funded predoctoral fellow. She was subsequently appointed as an NIEHS postdoctoral Fellow at Johns Hopkins University where she also completed an MPH program with major in epidemiology and biostatistics. Prior to her recruitment to the University of Louisville, she compelted a Cancer Prevention Fellowship in the Cancer Prevention Studies at the National Cancer Institute.

Joint Appointments in the Department of Pharmacology & Toxicology

- **Richard E. Goldstein, MD, PhD** was appointed Professor of Pharmacology and Toxicology. Dr. Goldstein received his B.A. from Amherst College, his MD from Thomas Jefferson University and his PhD in Molecular Physiology and Biophysics from Vanderbilt University. He held appointments as Assistant and Associate Professor of Surgery and of Medicine at Vanderbilt University prior to his appointment as Professor of Surgery and von Roenn Family Chair in Surgical Endocrinology at the University of Louisville in 2002.

- **Kelly M. McMasters, MD, PhD** was appointed Professor of Pharmacology and Toxicology. Dr. McMasters received his B.A from Colgate University and completed the MD/PhD program at Rutgers University/UMDNJ-Robert Wood Johnson Medical School. He completed a general surgery residency at UofL, followed by a surgical oncology fellowship at the University of Texas-MD Anderson Cancer Center. He was appointed Assistant Professor of Surgery at UofL in 1996 and was subsequently promoted to associate and then full professor. Dr. McMasters holds the Sam and Lolita Weakley Chair in Surgical Oncology and was recently appointed Chairman of the Department of Surgery following a nationwide search.

- **Hong Ye PhD** was appointed Assistant Professor of Pharmacology and Toxicology. Dr. Ye received her PhD degree from Keele University (UK).

She subsequently received further postdoctoral research training at Weill Medical College of Cornell University. She was recruited to the University of Louisville Brown Cancer Center in 2003 as Assistant Professor in the Department of Medicine (Division of Hematology/Oncology).

- **Wayne Zundel, PhD** was appointed Assistant Professor of Pharmacology and Toxicology. Dr. Zundel received his B.S/B.A. from Montana State University and his PhD in Cancer Biology from Stanford University. He held appointments as Lecturer in the Department of Radiation Oncology at Stanford and Assistant Professor in the Department of Medicine at the University of Colorado Health Sciences Center. He was recruited to the University of Louisville Brown Cancer Center as Assistant Professor in the Department of Radiation Biology in 2004.

Associate Appointments in the Department of Pharmacology & Toxicology

- **Lu Cai MD, PhD** was appointed to the associate faculty. Dr. Cai received his MD and his PhD in /Radiation Biology/Oncology from Norman Bethune University of Medical Sciences. He completed postdoctoral training at Norman Bethune University of Medical Sciences, the University of Western Ontario, and McGill University. He was appointed research associate in the Department of Medicine at the University of Louisville in 1999 and promoted to Assistant Professor in 2001.

- **Daniel J. Conklin, PhD** was appointed to the associate faculty**.** Dr. Conklin received his PhD from the University of Notre Dame. He received further postodoctoral training in cardiovascular toxicology at the University of Texas Medical Branch in Galveston. In 1998, he was appointed assistant professor at the University of Wisconsin-Eau Claire and was promoted to associate professor in 2003. He was recruited to the University of Louisville as Assistant Professor of Medicine (Cardiology) in 2003.

- **Kevin H. Stansbury, PhD** was appointed to the associate faculty. Dr. Stansbury received his PhD in Toxicology from the University of Kentucky. He subsequently completed postdoctoral training in Toxicological Sciences at Johns Hopkins University and subsequently served as an Analytical Chemist in their Center in Urban Environmental Health and a Research Associate in their Division of Clinical Pharmacology.

Program Highlights

- The Department received a very complimentary review of the pharmacology and toxicology graduate programs (provided as Section XIV of the report).

- The Department in collaboration with the Department of Biochemistry and Molecular Biology received an institutional predoctoral training grant in

environmental health sciences funded by NIEHS. This is the first NIH-funded predoctoral training grant in the history of the University.

- A Departmental Teaching Incentive Program was developed and initiated.

- A new molecular toxicology course and a new medical pharmacology graduate course were developed and initiated.

- Several department faculty are active participants and are research lab directors in the Center for Pediatric Pharmacology Research Unit (Jan Sullivan, Prinipal Investigator) funded by the NIH beginning January 1, 2004.

As described more fully in their annual reports, numerous faculty and students in the Department received honors and awards. Of particular note:

- **Steven R. Myers, PhD** initiated a new online nursing pharmacology course that enrolled students throughout the Commonwealth

- **La Creis Renee Kidd, PhD, MPH** was appointed Our Highest Potential Chair in Cancer Research.

- **Y. James Kang PhD** was promoted to Distinguished University Scholar

- **Gavin E. Arteel, PhD** was received the Young Investigator Award from the Research Society on Alcohol

- **Leonard C. Waite PhD** received the University of Louisville President Award for Distinguished Service.

- **Yu (Janet) Zang** was selected for the KC Huang Outstanding Graduate Student Award and received a predoctoral fellowship from the Susan B. Komen Breast Cancer Research Foundation.

- **Frazier Taylor** and **Steve Reeves** received individual NIH-NRSA fellowships for their dissertation research.

- **Tanvi Modi Jani** received a travel award and a second place award for her abstract presentation at the annual FASEB meeting

- **Guo-hui Jiang, PhD** received first place award for his abstract presentation at the annual SOT meeting

- **Clare Shen** and **Prachi Hote** received first place awards for their abstract presentations at the annual OVSOT meeting

- **Sam McNeely** and **Frazier Taylor** received awards for their abstract presentations at the annual Brown Cancer Center Retreat

Several faculty and staff received awards for their abstract presentations at the annual meeting of Research!Louisville:

- **David Clouthier PhD**, mentor for first place School of Dentistry Student Award
- **Brad Brewer** (and **John Eaton, PhD**, mentor) for second place School of Medicine Student Award
- **Haribabu Bodduluri**, **PhD** mentor for third place School of Medicine Student Award
- **Aruni Bhatnagar**, **PhD** mentor for third place School of Medicine Student Award
- **Craig McClain**, **MD,** mentor for second place Resident/Clinical Research Fellow Award
- **Paul Epstein**, **PhD** mentor for first place postdoctoral fellow award
- **Ina Berghein, PhD** (and **Gavin Arteel**, **PhD,** mentor) for second place postdoctoral fellow award
- **Michal Hetman**, **MD,PhD,** mentor for honorable mention postdoctoral fellow award
- **John Eaton**, **PhD,** first place faculty award for scientific importance
- **Yang Wang**, **MD, PhD,** second place faculty award for scientific importance
- **Gavin Arteel**, **PhD,** third place faculty award for most promising basic science research

Research Summary

Departmental research productivity measures such as number of research grants (Fig. 1), abstracts (Fig. 2) and number of publications (Fig. 3) all document that the Department research programs are continuing to grow and mature.

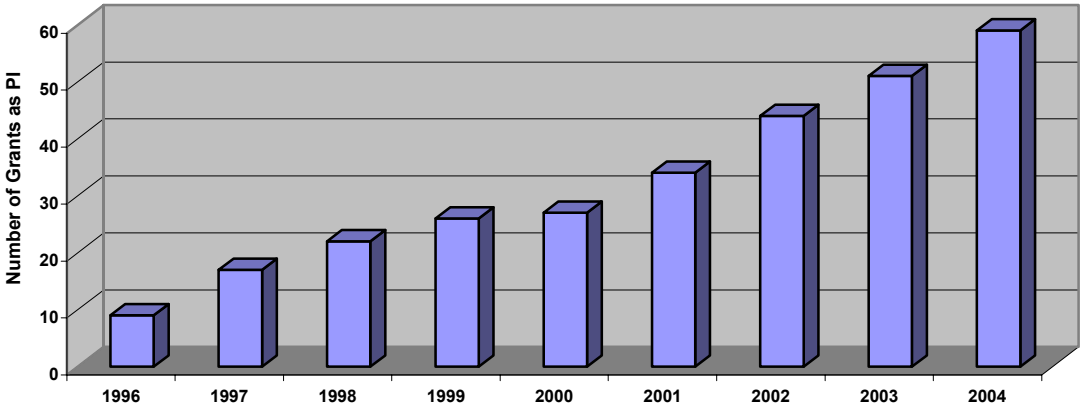


Figure 1: Grants in which Department faculty and students serve as PI by year

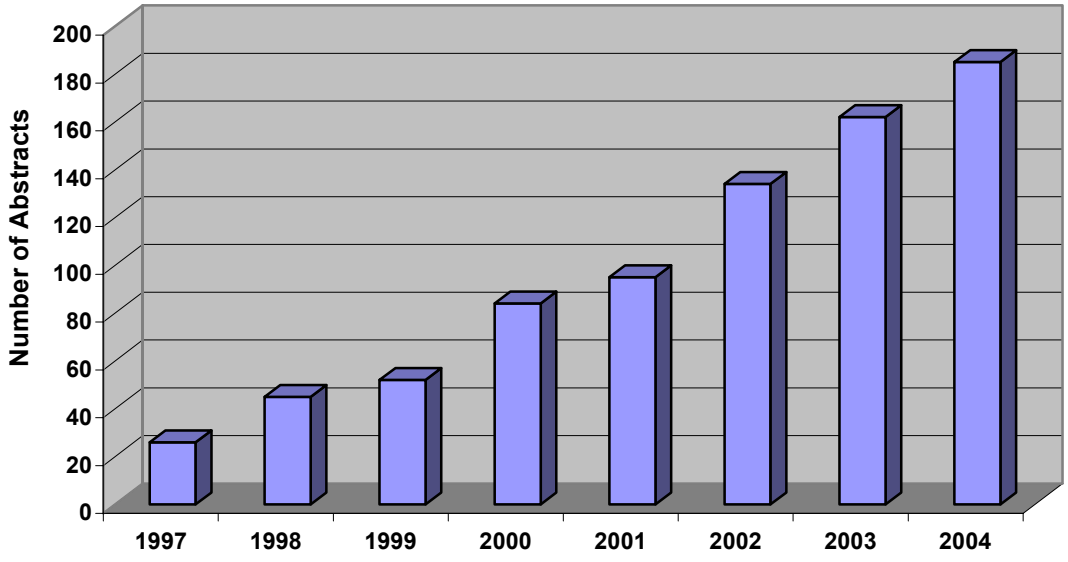


Figure 2: Department abstracts by year

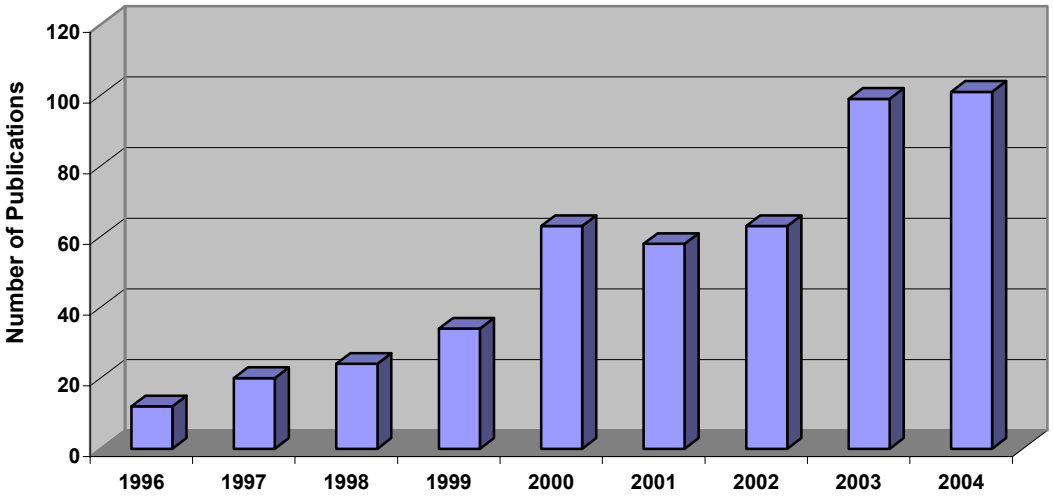


Figure 3: Department publications by year

The number of graduates increased to 14 students (Figure 4) reflective of the recent growth of the program. The Department cooperated with the Department of Biochemistry and Molecular Biology in receipt of the first NIH-funded predoctoral training grant awarded to UofL.

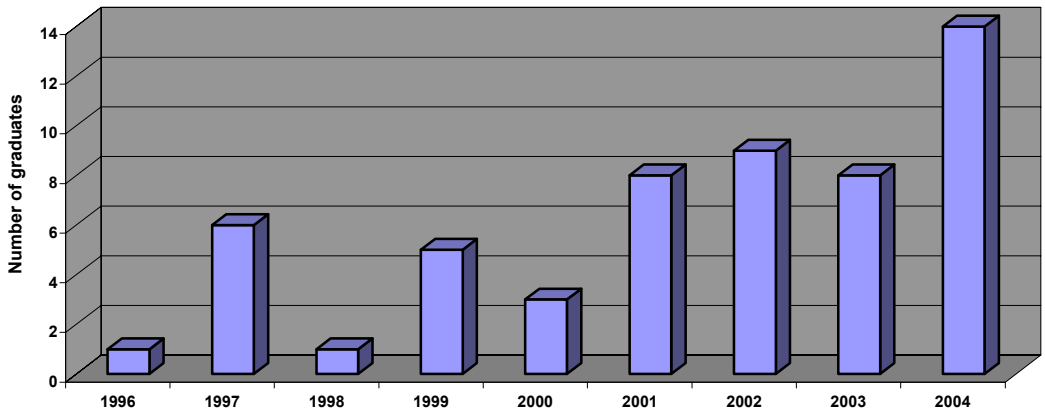


Figure 4: Department graduates by year

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.

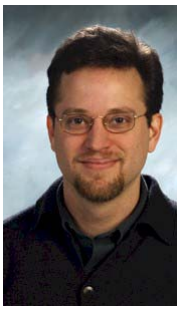
- Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

III. Faculty Research Descriptions (Primary and joint)

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

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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)

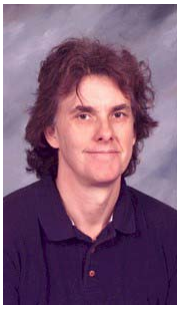
Assistant Professor

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

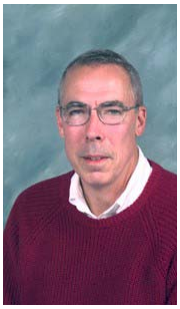
Function of endothelin-A receptor signaling during craniofacial and cardiovascular development. Mouse models of human birth defect syndromes.



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)

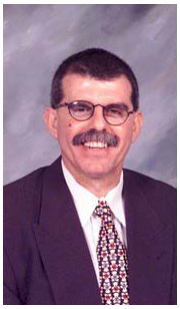
Associate Professor

Metabolomics, proteomics, ecotoxicology, contaminant bioavailability, transport, biotransformation, and bioremediation.

Richard E. Goldstein, M.D., Ph.D.
(M.D., Thomas Jefferson University; Ph.D., Vanderbilt University)

Professor and vonRoenn Family Chair in Surgical Endocrinology

Surgical endocrinology; surgical oncology.



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 adaptions 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)

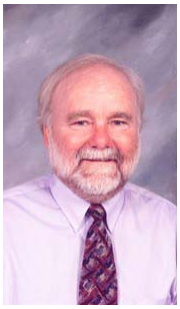
Professor
Peter K. Knoefel Chair of Pharmacology and Toxicology

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

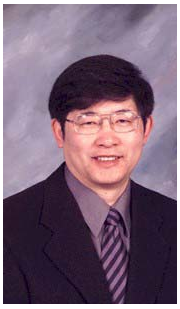
Role of signaling kinases in neuronal repair and demise.



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 antioxident 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

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La Creis Renee Kidd, Ph.D., M.P.H.
(Ph.D., Massachusetts Institute of Technology)
(M.P.H., Johns Hopkins University)

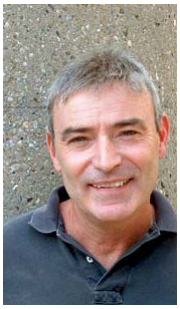
Assistant Professor
Our Highest Potential Endowed Chair in Cancer Research

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

Craig J. McClain, M.D. (University of Tennessee, Memphis)

Professor
Jewish Hospital 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.

Kelly M. McMasters, M.D., Ph.D. (University of Medicine and Dentistry of New Jersey/Rutgers Medical School)
Sam and Lolita Weakley Endowed Professor
Adenoviral vector cancer gene therapy. Development of vectors that selectively replicate in cancer cells. Mechanisms of E2F-1-induced apoptosis.

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)

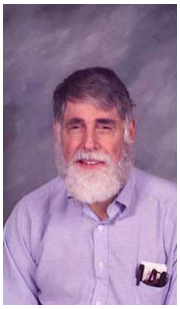
Professor

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

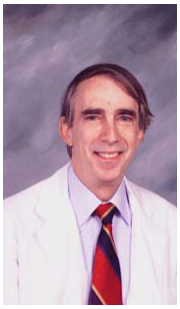
Molecular developmental toxicology; gene-environment interactions in normal and abnormal embryonic development; growth factor directed cellular signal transduction in embryonic cell growth and differentiation.



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.



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

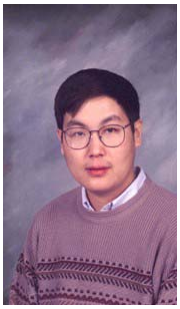
Professor

Neuropharmacology; effect of drugs on brain neurotransmitters and receptors.

Daniel I. Sessler, M.D. (Columbia University)

Professor
Weakley Distinguished University Research Chair

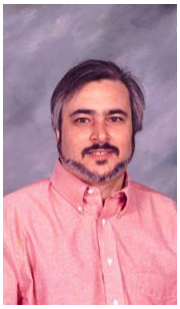
Outcomes research; effects of anesthetics on thermoregulation; perioperative heat balance; adverse effects of mild hypothermia; effects of supplemental perioperative oxygen on wound infections, nausea and vomiting.



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.



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

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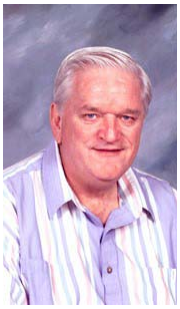

Leonard C. Waite, Ph.D. (University of Missouri)

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.

Hong Ye, Ph.D. (Keele University)

Assistant Professor

Research to understand the structure and mechanism of tumorgenesis, 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, 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.

Wayne S. Zundel, Ph.D. (Stanford University)

Assistant Professor

Molecular oncology.

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

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

Kidd, LaCreis R., Assistant Professor and Our Highest Potential Endowed Chair in Cancer Research, Ph.D., Toxicology, Massachusetts Institute of Technology (1997); M.P.H., Johns Hopkins University (2001).

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 A., 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 E., 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).

Goldstein, Richard E., Professor of Surgery, and Pharmacology and Toxicology and vonRoenn Family Chair in Surgical Endocrinology; 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*, Assistant Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Toxicology, University of Southern California (1997).

Hagg, Theo, Professor and Endowed Chair of Neurological Sugery, 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; and Endowed Professor of Molecular Signaling, 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; and Jewish Hospital Distinguished Chair in Hepatology, M.D., University of Tennessee-Memphis (1972).

McMasters, Kelly M., Sam and Lolita Weakley Endowed Professor of Surgery, and Pharmacology and Toxicology; Ph.D., Cell and Developmental Biology, Rutgers University (1988); M.D., UMDNJ Robert Wood Johnson Medical School (1989).

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 J., Professor of 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).

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

Zacharias, Wolfgang, Associate 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).

* 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).

Cai, Lu, Assistant Professor of Medicine; Ph.D., Radiation Biology/Oncology, Norman Bethune University of Medical Sciences (1987).

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

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 M., 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).

Stansbury, Kevin H., Assistant Professor, Brown Cancer Center; Ph.D. University of Kentucky (1994).

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 StateUniversity (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).

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, Lu, Associate faculty, effective January 1, 2004

Conklin, Daniel J., Associate faculty, effective June 1, 2004

Goldstein, Richard E., Professor, effective December 1, 2004

Kidd, LaCreis R., Assistant Professor, effective July 1, 2004

McMasters, Kelly M., Professor, effective July 1, 2004

Stansbury, Kevin H., Associate faculty, effective January 1, 2004

Ye, Hong, Assistant Professor, effective April 1, 2004

Zundel, Wayne S., Assistant Professor, effective December 1, 2004

Staff

Aiyer, Harini, Research Assistant
Azeem, Nabel, Student Assistant
Barker, David, Research Associate
Baumgarten, Sara, Student Assistant
Buck, Joshua, Student Assistant
Burke, Tom, Research Technologist II
Carpenter, Sharon, Executive Secretary
Casey, Jonathan, Student Assistant
Doll, Mark, Research Associate
Greca, Edie, Business Manager III
Holloman, Jessica, Student Assistant
Kellie, Brandon, Student Assistant
Lederer, Paul, Student Assistant
Liu, Marcia, Research Associate
Martini, Ben, Student Assistant
Miller, Heather, Senior Research Technician
Rubin-Teitel, Heddy, Program Assistant III
Smith, Ned, Senior Research Technologist
Stover, Rebekah, Student Assistant
Tucker, Alison, Lab Research Technician III
Turner, Delano, Lab Research Technician III
Vadhanam, Manicka, Senior Research Associate
Venugopal, Kamal, Research Associate
Walker, Dan, Student Assistant
Watson, Nick, Lab Research Technician III
Wicks, Chelsea, Student Assistant

Continuing Graduate Students

Name	Advisor
Cristian Campian	Fred Benz
Alex Carrasquer	Joe Song
Wendy Chang	Theresa Chen
Chris Cunningham	Steve Myers
Molly Davis	Gavin Arteel
Chad Dumstorf	Glenn McGregor
Laila Elsherif	James Kang
Agata Habas	Michal Hetman
April Hartford	Nick Delamere
Prachi Hote	Shirish Barve
Anwar Husain	David Hein
Nina Li	Paul Epstein
Jin Liu	Michael Brier
Jennifer Loehle	David Hein
Sam McNeely	Chris States
Kevyn Merten	James Kang
Kristin Metry	David Hein
Tanvi Modi	Shirish Barve
Lasharon Mosley	Richard Goldstein
Sheila Mullins	Paul Epstein
Miranda Nebane	Joe Song
YaFatou Njie	Joe Song
John Philipose	Michele Pisano
Paul Porter	Chris States
Stephen Reeves	David Gozal
Katie Richardson	Gavin Arteel
Gilandra Russell	Gavin Arteel
Lebnan Saad	David Gozal
Clare Shen	Paul Epstein
Frazier Taylor	Chris States
Joshua Thornburg	Jason Chesney
Jason Walraven	David Hein
Cindy Wang	David Gozal
Lipeng Wang	James Kang
Nick Watson	Glenn McGregor
Janet Zang	David Hein
Rundong Zhang	Joe Song
Susan Zhang	David Hein
Yuanqi Zhu	David Hein

New Graduate Students

Anthony, Cherone
Bagshaw, Aisha
Green, Maia
Martin, Robert
Moktar, Afsoon
Roberts, Emily
Wiegand, Christina
Xu, Xiaoqiang (Steven)
Yang, Lu
Zhou, Yang

Postdoctoral Fellows

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

V. Graduates

Prachi T. Hote (M.S.) Mentor: Shirish Barve, Ph.D.
Ethanol mediated loss of MAT2A (Methionine adenosylmethyltransferase) expression and SAMe (S-adenosylmethionine) biosynthesis induce Fas-mediated CD4+ T lymphocyte death: Potential mechanism(s) for alcohol mediated immunotoxicity

Ntsang Miranda Nebane (M.S.) Mentor: Zhao-Hui (Joe) Song, Ph.D.
Effects of D3.49N mutations on ligand binding and activation of the CB1 and CB2 cannabinoid receptors

Xia (Clare) Shen (Ph.D.) Mentor: Paul N. Epstein, Ph.D.
Mitochondrial damage and biogenesis in diabetic heart and protection by overexpression of manganese superoxide dismutase

Chad A. Dumstorf (M.S.) Mentor: W. Glenn McGregor, M.D.
Mutagenesis of induced tumors in murine lung

Yuanqi Zhu (Ph.D.) Mentor: David W. Hein, Ph.D.
Human NAT1 genetic polymorphisms: coding region & non-coding region

Agata M. Habas (M.S.) Mentor: Michal Hetman, M.D., Ph.D.
The role of nuclear factors of activated T-cells (NFAT) in neuronal death

Yu (Cindy) Wang (M.S.) Mentor: David Gozal, M.D.
Cooperative effects of amyloid beta (25-35) and hypoxia-reoxygenation on cell death in primary cultured mouse neurons of cerebral cortex

Christopher R. Cunningham (Ph.D.) Mentor: Steven R. Myers, Ph.D.
Hemoglobin adducts and the role of genotype in the modification of risk associated with tobacco smoke exposure to the fetus

Xiaoyan (Nina) Li (Ph.D.) Mentor: Paul N. Epstein, Ph.D.
The roles of pancreatic beta cell antioxidants in islet transplantation and type 1 diabetes

Kristin J. Metry (M.S.) Mentor: David W. Hein, Ph.D.
NAT polymorphism in breast cancer risk

Wei (Wendy) Yuan Cheng (M.S.) Mentor: Theresa S. Chen, Ph.D.
Mechanism of oxidative stress induced cell toxicity

Jennifer A. Loehle (M.S.) Mentor: David W. Hein, Ph.D.
Pediatric pharmacogenetic studies: The advent of genomics, clinical implications and current initiatives in research

April K. Hartford (Ph.D.) Mentor: Nicholas A. Delamere, Ph.D.
NA,K-ATPase Alpha 2: Its role in calcium homeostasis, signalling and cell survival in astrocytes

Laila Elsherif (Ph.D.) Mentor: Y. James Kang, Ph.D.
Dietary copper restriction-induced cardiomyopathy and its reversibility

VI. Publications (salaried and emeritus faculty)

Papers

1. Adams TB, Cohen SM, Doull J, Feron VJ, Goodman JI, Marnett LJ, Munro IC, Portoghese PS, Smith RL, Waddell WJ, and Wagner BM (2004) The FEMA GRAS assessment of cinnamyl derivatives used as flavor ingredients. *Food and Chemical Toxicology* **42**:157-185.

2. Arteel GE (2004) "HOPE" for the liver? Mechanistic insight into the role of the renin-angiotensin system in hepatic fibrosis. *Hepatology* **40**:263-265.

3. Bass JL, Corwin M, Gozal D, Moore C, Nishida H, Parker S, Schonwald A, Wilker RE, Stehle S, and Kinane TB (2004) The effect of chronic or intermittent hypoxia on cognition in childhood: a review of the evidence. *Pediatrics* **114**:805-816.

4. Brewer BG, Roberts AM, and Rowell PP (2004) Short-term distribution of nicotine in the rat lung. *Drug and Alcohol Dependence* **75**:193-198.

5. Chagpar A, Martin RC, III, Chao C, Wong SL, Edwards MJ, Tuttle T, and McMasters KM (2004) Validation of subareolar and periareolar injection techniques for breast sentinel lymph node biopsy. *Arch.Surg.* **139**:614-618.

6. Chagpar AB, Martin RC, Hagendoorn LJ, Chao C, and McMasters KM (2004) Lumpectomy margins are affected by tumor size and histologic subtype but not by biopsy technique. *Am.J Surg.* **188**:399-402.

7. Cheng Z, Zhang H, Guo SZ, Wurster R, and Gozal D (2004) Differential control over postganglionic neurons in rat cardiac ganglia by NA and DmnX neurons: anatomical evidence. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology* **286**:R625-R633.

8. Cheng Z, Zhang H, Yu J, Wurster RD, and Gozal D (2004) Attenuation of baroreflex sensitivity after domoic acid lesion of the nucleus ambiguus of rats. *Journal of Applied Physiology* **96**:1137-1145.

9. Crabtree VM, Varni JW, and Gozal D (2004) Health-related quality of life and depressive symptoms in children with suspected sleep-disordered breathing. *Sleep* **27**:1131-1138.

10. Deaciuc IV, Arteel GE, Peng X, Hill DB, and McClain CJ (2004) Gene expression in the liver of rats fed alcohol by means of intragastric infusion. *Alcohol* **33**:17-30.

11. Deitz AC, Rothman N, Rebbeck TR, Hayes RB, Chow WH, Zheng W, Hein DW, and Garcia-Closas M (2004) Impact of misclassification in genotype-exposure interaction studies: example of N-acetyltransferase 2 (NAT2), smoking, and bladder cancer. *Cancer Epidemiology Biomarkers & Prevention* **13**:1543-1546.

12. Donny EC, Lanza ST, Balster RL, Collins LM, Caggiula A, and Rowell PP (2004) Using growth models to relate acquisition of nicotine self-administration to break point and nicotinic receptor binding. *Drug and Alcohol Dependence* **75**:23-35.

13. Donthi RV, Ye G, Wu C, McClain DA, Lange AJ, and Epstein PN (2004) Cardiac expression of kinase-deficient 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase inhibits glycolysis, promotes hypertrophy, impairs myocyte function, and reduces insulin sensitivity. *Journal of Biological Chemistry* **279**:48085-48090.

14. Edwards MJ, Broadwater R, Tafra L, Jarowenki D, Mabry C, Beitsch P, Whitworth P, Martin RC and Oetting L (2004) Progressive adoption of cryoablative therapy for breast fibroadenoma in community practice. *American Journal of Surgery* **188**: 221-224.

15. Elsherif L, Jiang Y, Saari JT, and Kang YJ (2004) Dietary copper restriction-induced changes in myocardial gene expression and the effect of copper repletion. *Exp.Biol.Med.(Maywood.)* **229**:616-622.

16. Elsherif L, Wang L, Saari JT, and Kang YJ (2004) Regression of dietary copper restriction-induced cardiomyopathy by copper repletion in mice. *Journal of Nutrition* **134**:855-860.

17. Filppula S, Yaddanapudi S, Mercier R, Xu W, Pavlopoulos S, Cai J, Pierce WM, Jr., and Makryannis A (2004) Purification and mass spectroscopic analysis of human CB2 cannabinoid receptor expressed in the baculovirus system. *Journal of Peptide Research* **64**:225-236.

18. Finder JD, Birnkrant D, Carl J, Farber HJ, Gozal D, Iannaccone ST, Kovesi T, Kravitz RM, Panitch H, Schramm C, Schroth M, Sharma G, Sievers L, Silvestri JM, and Sterni L (2004) Respiratory care of the patient with Duchenne muscular dystrophy: ATS consensus statement. *American Journal of Respiratory and Critical Care Medicine* **170**:456-465.

19. Fu X, Chen TS, Ray MB, Nagasawa HT, and Williams WM (2004) p-Aminophenol-induced hepatotoxicity in hamsters: role of glutathione. *Journal of Biochemical and Molecular Toxicology* **18**:154-161.

20. Gennaro LA, Vadhanam M, Gupta RC, and Vouros P (2004) Selective digestion and novel cleanup techniques for detection of benzo[a]pyrene diol epoxide-DNA adducts by capillary electrophoresis/mass spectrometry. *Rapid Communications in Mass Spectrometry* **18**:1541-1547.

21. Goldbart AD, Veling MC, Goldman JL, Li RC, Brittian KR, and Gozal D (2004) Glucocorticoid Receptor Subunit Expression in Adenotonsillar Tissue of Children with Obstructive Sleep Apnea. *Pediatric Research*.

22. Goldbart AD, Goldman JL, Li RC, Brittian KR, Tauman R, and Gozal D (2004) Differential expression of cysteinyl leukotriene receptors 1 and 2 in tonsils of children with obstructive sleep apnea syndrome or recurrent infection. *Chest* **126**:13-18.

23. Goldbart AD and Gozal D (2004) Non-invasive ventilation in preterm infants. *Pediatric Pulmonology Supplement* **26**:158-161.

24. Gozal D (2004) New concepts in abnormalities of respiratory control in children. *Current Opinion in Pediatrics* **16**:305-308.

25. Gozal D, O'Brien L, and Row BW (2004) Consequences of snoring and sleep disordered breathing in children. *Pediatric Pulmonology Supplement* **26**:166-168.

26. Gozal D and O'Brien LM (2004) Snoring and obstructive sleep apnoea in children: why should we treat? *Paediatric Respiratory Reviews* **5 Suppl A**:S371-S376.

27. Gozal D and Burnside MM (2004) Increased upper airway collapsibility in children with obstructive sleep apnea during wakefulness. *American Journal of Respiratory and Critical Care Medicine* **169**:163-167.

28. Gozal E, Sachleben Jr LR, Rane MJ, Vega C, and Gozal D (2004) Mild Sustained and Intermittent Hypoxia Induce Apoptosis in PC-12 Cells via Different Mechanisms. *American Journal of Physiology-Cell Physiology*.

29. Guo L, Richardson KS, Tucker LM, Doll MA, Hein DW, and Arteel GE (2004) Role of the renin-angiotensin system in hepatic ischemia reperfusion injury in rats. *Hepatology* **40**:583-589.

30. Hartford AK, Messer ML, Moseley AE, Lingrel JB, and Delamere NA (2004) Na,K-ATPase alpha 2 inhibition alters calcium responses in optic nerve astrocytes. *Glia* **45**:229-237.

31. Hein DW and Doll MA (2004) TaqMan real time polyerase chain reaction methods for determination of nucleotide polymorphisms in human N-acetyltransferase-1 (NAT1) and -2(NAT2), in *Current Protocols in Toxicology, supplement 22* (Maines MD, Costa LG, Hodgson E, Lawrence D, Oxolins T, and Reed DJ eds) p 4.15.1-4.15.11, John Wiley and Sons, Hoboken,NJ.

32. Hein DW (2004) NAT2 gene polymorphism in bladder cancer: A study from North India (editorial comment). *International Braz J Urol* **30**:287.

33. Hurst HE and Martin MD (2004) Toxicology, in *Pharmacology and Therapeutics for Dentistry* (Yagiela JA, Dowd FJ, and Neidle EA eds) pp 829-848, Elsvier Mosby, St. Louis, MO.

34. Husain A, Barker DF, States JC, Doll MA, and Hein DW (2004) Identification of the major promoter and non-coding exons of the human arylamine N-acetyltransferase 1 gene (NAT1). *Pharmacogenetics* **14**:397-406.

35. Ivanenko A, Barnes ME, Crabtree VM, and Gozal D (2004) Psychiatric symptoms in children with insomnia referred to a pediatric sleep medicine center. *Sleep Medicine* **5**:253-259.

36. Ivanenko A, Crabtree VM, and Gozal D (2004) Sleep in children with psychiatric disorders. *Pediatric Clinics of North America* **51**:51-68.

37. Jiang G, Jankowiak R, Grubor N, Banasiewicz M, Small GJ, Skorvaga M, Van Houten B, and States JC (2004) Supercoiled DNA promotes formation of intercalated cis-N2-deoxyguanine adducts and base-stacked trans-N2-deoxyguanine adducts by (+)-7R,8S-dihydrodiol-9S,10R-epoxy-7,8,9,10-tetra- hydrobenzo[a]pyrene. *Chemical Research in Toxicology* **17**:330-339.

38. Jiang Y and Kang YJ (2004) Metallothionein gene therapy for chemical-induced liver fibrosis in mice. *Molecular Therapeutics* **10**:1130-1139.

39. Jiang Y, Liu J, Waalkes M, and Kang YJ (2004) Changes in the gene expression associated with carbon tetrachloride-induced liver fibrosis persist after cessation of dosing in mice. *Toxicological Sciences* **79**:404-410.

40. Kannan M, Wang L, and Kang YJ (2004) Myocardial oxidative stress and toxicity induced by acute ethanol exposure in mice. *Exp.Biol.Med.(Maywood.)* **229**:553-559.

41. Lambert JC, Zhou Z, Wang L, Song Z, McClain CJ, and Kang YJ (2004) Preservation of intestinal structural integrity by zinc is independent of metallothionein in alcohol-intoxicated mice. *American Journal of Pathology* **164**:1959-1966.

42. Li RC, Row BW, Kheirandish L, Brittian KR, Gozal E, Guo SZ, Sachleben LR, Jr., and Gozal D (2004) Nitric oxide synthase and intermittent hypoxia-induced spatial learning deficits in the rat. *Neurobiological Diseases* **17**:44-53.

43. Li SY, Gomelsky M, Duan J, Zhang Z, Gomelsky L, Zhang X, Epstein PN, and Ren J (2004) Overexpression of aldehyde dehydrogenase-2 (ALDH2) transgene prevents acetaldehyde-induced cell injury in human umbilical vein endothelial cells: Role of ERK and p38 MAP kinase. *Journal of Biological Chemistry* **279**:11244-11252.

44. Li X, Chen H, and Epstein PN (2004) Metallothionein protects islets from hypoxia and extends islet graft survival by scavenging most kinds of reactive oxygen species. *Journal of Biological Chemistry* **279**:765-771.

45. Li Y, Gu Y, Song Y, Zhang L, Kang YJ, Prabhu SD, and Cai L (2004) Cardiac functional analysis by electrocardiography, echocardiography and in situ hemodynamics in streptozotocin-induced diabetic mice. *Journal of Health Science* **50**:356-365.

46. Liu YQ, Han J, Epstein PN, and Long YS (2004) Enhanced Rat {beta} Cell Proliferation in 60% Pancreatectomized Islets by Increased Glucose Metabolic Flux through Pyruvate Carboxylase Pathway. *American Journal of Physiology-Endocrinology and Metabolism*.

47. Macey PM, Valderama C, Kim AH, Woo MA, Gozal D, Keens TG, Harper RK, and Harper RM (2004) Temporal trends of cardiac and respiratory responses to ventilatory challenges in congenital central hypoventilation syndrome. *Pediatric Research* **55**:953-959.

48. Marks MJ, Rowell PP, Cao JZ, Grady SR, McCallum SE, and Collins AC (2004) Subsets of acetylcholine-stimulated 86Rb+ efflux and [125I]-epibatidine binding sites in C57BL/6 mouse brain are differentially affected by chronic nicotine treatment. *Neuropharmacology* **46**:1141-1157.

49. Martin RC, Edwards MJ, and McMasters KM (2004) Morbidity of adjuvant hepatic arterial infusion pump chemotherapy in the management of colorectal cancer metastatic to the liver. *Am.J Surg.* **188**:714-721.

50. Martin RC, Hughes K, Doll MA, Lan Q, Martini BD, Lissowska J, Rothman N, and Hein DW (2004) Method for determination of (-102C>T) single nucleotide polymorphism in the human manganese superoxide dismutase promoter. *BMC Genetics* **5**:33.

51. McClain CJ, Mokshagundam PL, Barve SS, Song Z, Hill DB, Chen T, and Deaciuc I (2004) Mechanisms of non-alcoholic steatohepatitis. *Alcohol* **34**:1-13.

52. Miller KK, Cai J, Ripp SL, Pierce WM, Jr., Rushmore TH, and Prough RA (2004) Stereo- and regioselectivity account for the diversity of dehydroepiandrosterone (DHEA) metabolites produced by liver microsomal cytochromes P450. *Drug Metabolism and Disposition* **32**:305-313.

53. Montgomery-Downs HE, O'Brien LM, Holbrook CR, and Gozal D (2004) Snoring and sleep-disordered breathing in young children: subjective and objective correlates. *Sleep* **27**:87-94.

54. Morris KF and Gozal D (2004) Persistent respiratory changes following intermittent hypoxic stimulation in cats and human beings. *Respiratory Physiology and Neurobiology* **140**:1-8.

55. Mukhopadhyay S, Clark DR, Watson NB, Zacharias W, and McGregor WG (2004) REV1 accumulates in DNA damage-induced nuclear foci in human cells and is implicated in mutagenesis by benzo[a]pyrenediolepoxide. *Nucleic Acids Research* **32**:5820-5826.

56. Nohynek GJ, Skare JA, Meuling WJ, Hein DW, De Bie AT, and Toutain H (2004) Urinary acetylated metabolites and N-acetyltransferase-2 genotype in human subjects treated with a para-phenylenediamine-containing oxidative hair dye. *Food and Chemical Toxicology* **42** :1885-1891.

57. O'Brien LM, Mervis CB, Holbrook CR, Bruner JL, Klaus CJ, Rutherford J, Raffield TJ, and Gozal D (2004) Neurobehavioral implications of habitual snoring in children. *Pediatrics* **114**:44-49.

58. O'Brien LM, Mervis CB, Holbrook CR, Bruner JL, Smith NH, McNally N, McClimment MC, and Gozal D (2004) Neurobehavioral correlates of sleep-disordered breathing in children. *Journal of Sleep Research* **13**:165-172.

59. O'Brien LM, Tauman R, and Gozal D (2004) Sleep pressure correlates of cognitive and behavioral morbidity in snoring children. *Sleep* **27**:279-282.

60. O'Brien LM and Gozal D (2004) Neurocognitive dysfunction and sleep in children: from human to rodent. *Pediatric Clinics of North America* **51**:187-202.

61. Oz HS, Ray M, Chen TS, and McClain CJ (2004) Efficacy of a transforming growth factor beta 2 containing nutritional support formula in a murine model of inflammatory bowel disease. *Journal of the American College of Nutrition* **23**:220-226.

62. Palmer LI, Martin RC, and Hein DW (2004) Chemopreventive drug treatment in subjects with genetic predisposition to cancer: prescriber liability and healthcare disparities. *Pharmacogenomics* **5**:319-329.

63. Payne RS, Goldbart A, Gozal D, and Schurr A (2004) Effect of intermittent hypoxia on long-term potentiation in rat hippocampal slices. *Brain Research* **1029**:195-199.

64. Pierce WM and Cai J (2004) Applications of mass spectrometry in proteomics. *Contributions in Nephrology* **141**:40-58.

65. Ramaiah S, Rivera C, and Arteel G (2004) Early-phase alcoholic liver disease: an update on animal models, pathology, and pathogenesis. *International Journal of Toxicology* **23**:217-231.

66. Reeves SR and Gozal D (2004) Platelet-activating factor receptor and respiratory and metabolic responses to hypoxia and hypercapnia. *Respiratory Physiology and Neurobiology* **141**:13-20.

67. Reeves SR and Gozal D (2004) Platelet-activating factor receptor modulates respiratory adaptation to long-term intermittent hypoxia in mice. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology* **287**:R369-R374.

68. Row BW, Kheirandish L, Li RC, Guo SZ, Brittian KR, Hardy M, Bazan NG, and Gozal D (2004) Platelet-activating factor receptor-deficient mice are protected from experimental sleep apnea-induced learning deficits. *Journal of Neurochemistry* **89**:189-196.

69. Rowell PP and Volk KA (2004) Nicotinic activation of mesolimbic neurons assessed by rubidium efflux in rat accumbens and ventral tegmentum. *Neurosignals* **13**:114-121.

70. Shen X, Zheng S, Thongboonkerd V, Xu M, Pierce WM, Jr., Klein JB, and Epstein PN (2004) Cardiac mitochondrial damage and biogenesis in a chronic model of type 1 diabetes. *American Journal of Physiology-Endocrinology and Metabolism* **287**:E896-E905.

71. Shen X, Gang Y, Metreveli NS, and Epstein PN (2004) Cardiomyocyte defects in diabetic models and protection with cardiac targeted transgenes. *Methods in Molecular Medicine* **112**:379-389.

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VII. Additional Publications of Faculty with Joint Appointments

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162. C.A. Dumstorf, E. Krishnan, H. Bodduluri, W.G. McGregor. Inflammation enhances mutagenesis and carcinogenesis in murine lungs. Research! Louisville November 2004.

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168. Christopher Cunningham, Terry Wright, Harrell Hurst, and Steven R. Myers, *Characterization of Epoxide Adducts of Polycyclic Aromatic Hydrocarbons with Hemoglobin.* American Association for Cancer Research, Orlando, FL, 2004.

169. Steven R. Myers, Christopher R. Cunningham, Terry Wright, and Jonathan Weeks, *Levels of Polycyclic Aromatic Hydrocarbons in Amniotic Fluid Samples from Smokers and Nonsmokers.* American Association for Cancer Research, Orlando, FL, 2004.

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175. A Carrasquer and Z. H. Song. The functional significance of polymorphisms at positions 63 and 316 of the CB2 cannabinoid receptor. Meeting on Pharmacogenomics, 2004.

176. R. Zhang, P. H. Reggio and Z. H. Song. Mutagenesis of aromatic microdomains at human CB2 cannabinoid receptor. International Cannabinoid Research Society Conference, 2004.

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182. States J, McNeely S, McCabe M. Arsenic-Induced Disruption Of Mitotic Progression: Implications For Carcinogenesis And Potential For Chemotherapy, *Toxicologist* (2004) abstract #1217.

183. Porter P, Mellon I, States J. Discovery and Functional Analysis of XPA Polymorphisms, *Toxicologist* (2004) abstract #144.

184. Jiang G, Jankowiak R, Grubor N, Banasiewicz M, Small G, Skorvaga M, Van Houten B, States J. Formation Of *cis*- BPDE-Adducts And Base-Stacked *trans*-BPDE-Adducts Is Increased On Supercoiled DNA, *Toxicologist* (2004) abstract #534.

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IX. Invited Scientific Presentations and Seminars (salaried faculty)

Dr. Gavin Arteel

Research seminar, 01/04, "Reactive oxygen species", University of Louisville, GI Liver Group, Louisville, KY.

Research symposium, 01/04, "Liver transplantation", University of Louisville, Dept of Medicine Research Conference, Louisville, KY.

Research seminar, 04/04, "Oxidants and antioxidants in ALD: tipping the balance", University of Louisville, Dept of Microbiology and Immunology, Louisville, KY.

Research symposium, 05/04, "Oxidants and antioxidants in alcoholic liver disease: tipping the balance", University of Kentucky, Graduate Center for Nutritional Sciences, Lexinton, KY.

Research seminar, 06/04, "Spin-offs", University of Louisville, Dept of Biochemistry, Ken Ramos laboratory, Louisville, KY.

Research seminar, 06/04, "What's good for your heart is *good* for your liver?" Dept of Medicine-Cardiology, Bhatnagar PPG group, Louisville, KY.

Research symposium, 06/04, "Alcoholic liver disease: crossroads between TLRs and oxidative stress," NIAAA satellite session, Research Society on Alcoholism, Vancouver, Canada.

Research Seminar, 09/04, "New targets against oxidative stress and inflammation in the liver," Heinrich Heine Universität, Institut für Biochemie und Molekularbiologie I, Düsseldorf, Germany.

Research Syposium, 09/04, "Investigations on the source(s) and type(s) of oxidants in alcoholic liver disease," ISBRA annual meeting, International society on Biomedical Research on Alcoholism, Heidelberg, Germany.

Research Syposium, 09/04, "Kupffer cell-derived mediators involved in ALD: Reactive oxygen and nitrogen species," ISBRA annual meeting, International society on Biomedical Research on Alcoholism, Heidelberg, Germany.

Research Seminar, 10/04, "New pathways and potential targets in hepatic inflammation," University of Louisville, Dept of Pharmacology and Toxicology, Louisville, KY.

Research Seminar, 11/04, "Potential new therapies against oxidative stress and liver damage," Michigan State University, Dept of Pharmacology and Toxicology, East Lansing, MI.

Dr. Paul Epstein

Paul N Epstein September 2004, University of Louisville, Endocrine Grand Rounds, Diabetic Nephropathy

Paul N Epstein September 2004, University of Louisville, CGEMM Diabetic Nephropathy and Cardiomyopathy

Dr. David Gozal

Snore the Alarm: The Neurobehavioral Consequences of Sleep-Disordered Breathing. Pediatric Grand Rounds, The Hospital for Sick Children, January 14, 2004, Toronto, Canada.

Consequences of Snoring and Sleep Disordered Breathing. Invited Lecture, CIPP 6, February 29, 2004, Lisbon, Portugal.

Nasal Intermittent Positive Pressure Ventilation. Invited Lecture, CIPP 6, March 2, 2004, Lisbon, Portugal.

Obstructive Sleep Apnea: Lessons from Animal Models. IX "Hot Topics" Forum: Sleep Apnea Syndrome, Palma de Mallorca, Spain, March 26-27, 2004.

Sleep Apnea Syndrome and Hypertension: Causality and Effects of CPAP. IX "Hot Topics" Forum: Sleep Apnea Syndrome, Palma de Mallorca, Spain, March 26-27, 2004.

SIDS Update. Celebration of Pediatric Pulmonology, April 2-4, 2004, Sonesta Beach Resort Key Biscayne, Miami, FL.

Topics in Congenital Central Hypoventilaiton Syndrome. Celebration of Pediatric Pulmonology, April 2-4, 2004, Sonesta Beach Resort Key Biscayne, Miami, FL.

Pre-Laboratory Evaluation of Sleep-Disordered Breathing. Celebration of Pediatric Pulmonology, April 2-4, 2004, Sonesta Beach Resort Key Biscayne, Miami, FL.

Developmental Plasticity of Peripheral Chemoafferent Pathways. Symposium on Development of Respiratory Control: Bench to Bedside, Experimental Biology Meeting, April 20, 2004, Washington, DC.

New Developments in Pediatric Obstructive Sleep Apnea. XII Reunion Anual de la Asociacion Iberica de Patologia del Sueno, 6-7 May, 2004, Valencia, Spain.

Diseases of Infants and Children – Now. ALA-ATS Joint Symposium on "Milestones in Advancing Lung Disease Research: An Historical Contrast from Then to Now", American Thoracic Society International Conference, May 21-26, 2004, Orlando, FL.

Inflammatory Response to Hypoxia: Mechanisms and Consequences. Symposium on "Inflammation and Sleep-Disordered Breathing," American Thoracic Society International Conference, May 21-26, 2004, Orlando, FL.

Cognitive Deficits in Pediatric Obstructive Sleep Apnea Are Completely Reversible: Con. Symposium on "Controversies in Seep Disordered Breathing: Pro-Con Session," American Thoracic Society International Conference, May 21-26, 2004, Orlando, FL.

Classical OSAS is Just the Tip of the Iceberg: Redefining Childhood SDB in Light of the Full Spectrum of Morbidity. Symposium on "Redefining Obstructive Sleep-Disordered Breathing in the 21st Century: From Arbitrary Thresholds to Evidence-Based Diagnostic Criteria", American Thoracic Society International Conference, May 21-26, 2004, Orlando, FL.

Proteomics: Defining Gene Function. Symposium on "Genomic and Proteomic Techniques in SDB: Bringing the Bench to the Bedside", American Thoracic Society International Conference, May 21-26, 2004, Orlando, FL.

Pediatric Morbidity in Obstructive Sleep Apnea. Speaker, Post-Graduate Course on "Pediatric Clinical Issues in Sleep and OSA", 18th APSS Meeting, June 5-10, 2004, Philadelphia, PA.
Is Sleep and Anti-Oxidant?

Speaker, Symposium on "Sleep and Oxidative Stress", 18th APSS Meeting, June 5-10, 2004, Philadelphia, PA.

Effects of Intermittent Hypoxia on Adult Neurogenesis in Rodents. Speaker, Symposium on "Adult Neurogenesis: A Biological Link Between Sleep Disorders, Cognitive Deficits in Obstructive Sleep Apnea, and Depression", 18th APSS Meeting, June 5-10, 2004, Philadelphia, PA.

Special Lecture, Society for Neuroscience Annual Conference, San Diego 2004

Dr. Evelyne Gozal

To Bind or Not to Bind ? Akt-heat Shock Proteins Interactions in Hypoxia: A Question of Survival. Seminaire Grenoblois de Neurosciences. Universite Joseph Fourier, Grenoble France. January 9, 2004.

To Bind or Not to Bind ? Akt-heat Shock Proteins Interactions in Hypoxia: A Question of Survival. Faculte des Sciences Jussieu, Paris VI, France January 6, 2004.

Heat Shock Proteins / Akt Binding in Hypoxia: A Question of Life and Death ?

Invited lecture, Societe de Circulation et Metabolisme du Cerveau (SCMC) Spring Meeting Dijon, France. June 17, 2004.

Hypoxia-induced Akt-Heat Shock Proteins interaction in Neuronal Cells: A Survival Response. Department of Pediatrics Research Luncheon. University of Louisville, July 19, 2004.

Dr. Ramesh Gupta

Presented a research seminar to the Environmental Cardiology Group.

Dr. David W. Hein

Human and Rabbit NAT Metabolism of Arylamines, Toxicology Peer Review Panel Meeting, Procter and Gamble Company, Cincinnati, Ohio, March 2004.

Investigations of Arylamine N-acetyltransferase Genetic Polymorphisms in Animal Models, Environmental Cardiology Program, University of Louisville, Louisville, Kentucky, June 2004.

NAT2 Genetic Polymorphisms: Effects on Cancer Risk (Many) and Treatment (Some), Poa Pratensis Seminar, James Graham Brown Cancer Center, University of Louisville, Louisville, Kentucky, July 2004.

NAT2 Metabolism and Hair Dyes. Epidemiology-Toxicology Workshop on Hair Dyes, Baltimore, Maryland, October 2004.

Update on N-acetylation of Hair Dye Chemicals by Human NAT1 and NAT2. Procter and Gamble meetings, University of Louisville, Louisville, Kentucky, October 2004.

Cancer Center Support Grants: Cancer Prevention and Control Criteria for an NCI Comprehensive Cancer Center. Cancer Prevention and Control Program, James Graham Brown Cancer Center, University of Louisville, Louisville, Kentucky, November 2004.

Dr. Y. James Kang

Nov 11, 2004 Invested Speaker, "The VIIth Conference of the International Society for Trace Element Research in Humans" Bangkok, Thailand, Nov. 7 – 12, 2004. "Copper and zinc dynamic changes in the progression of cardiomyopathy."

Nov 11, 2004 Invested Speaker, "The VIIth Conference of the International Society for Trace Element Research in Humans" Bangkok, Thailand, Nov. 7 – 12, 2004. "Regression of copper deficiency-induced cardiomyopathy."

Oct 18, 2004 Invested Speaker, "Modern Drug Discovery and Development" San Diego, CA, Oct 18-19, 2004. "New understanding in cardiotoxicity."

June 21, 2004 Invested Speaker, "Zinc Signals 2004" Aarhus, Denmark, June 19 to 23, 2004. "Zinc and metallothionein in cardiovascular diseases."

June 21, 2004 Invested Speaker, "Zinc Signals 2004" Aarhus, Denmark, June 19-23, 2004. "Zinc inhibition of acute alcohol-induced apoptosis and oxidative stress activated TNF-α signaling pathway in mouse liver."

Dr. W. Glenn McGregor

"S-phase dependence of RAD18 immobilization after UV irradiation", Gordon Conference on Mutagenesis, Oxford, England, September 2004.

Dr. Steven R. Myers

Biomarkers of Polycyclic Aromatic Hydrocarbons, International Biomonitoring Workshop, USEPA, Research Triangle Park, NC., Sept 21 -22, 2004.

Dr. Zhao-Hui (Joe) Song

The Mechanisms of Actions for Cannabinoids
Department of Immunology, Peking University School of Medicine, July, 2004

The Anti-glaucoma Potentials of Cannabinoids
Department of Cell Biology and Anatomy, New York Medical College, Valhalla, New York, April, 2004

Cannabinoid Receptors: Structure, Function, and Potentials as Therapeutic Targets
Department of Molecular Biology, University of Medicine and Dentistry of New Jersey, Stratford, New Jersey, March, 2004

Updates on Cannabinoid Receptor Research
University of Connecticut School of Pharmacy Seminar Series, Storrs, Connecticut, January, 2004

Dr. J. Christopher States

"Arsenic Induced Mitotic Disruption: Mechanism and Consequences" National Institute of Aging, March 19, 2004.

"Arsenic-Induced Mitotic Disruption: Mechanism and Consequences", Environmental Cardiology Program Project Group, University of Louisville, March 29, 2004.

X. Research Grants and Contracts Submitted (salaried faculty)

	Agency	***Budget Requested***
Dr. Gavin E. Arteel		
Crosstalk between PXR and A/EpRE signaling (Co-I; K Falker, PI) 10/01/04-09/30/08	NIH	$904,404
Development of a new model of recovery from ALD (PI) 12/01/04-11/30/06	NIH	$294,000
Development of a direct cellular energy delivery system (Co-I; W Ehringer, PI) 07/04/04-06/30/06	NIH	$1,655,671
Matrix metalloproteinases in alcoholic liver injury (Co-I; I Deaciuc, PI) 04/01/05-03/31/07	NIH	$362,800
Metallothionein Prevents Diabetic Cardiomyopathy (Co-I; L Cai, PI) 04/01/05-03/31/10	NIH	$1,129,615
Prevention of liver transplant nonfunction with ATP vesicles (PI) 04/01/05-03/31/10	NIH	$1,406,038
A new ATP delivery system for liver transplantation (Subcontract PI; W Ehringer, PI) 04/15/05-10/14/05	NIH	$100,000
Control of drug and ethanol metabolism (competitive renewal) (PI) 07/01/05-06/30/10	NIH	$1,506,750
University of Louisville Alcohol Research Center (PI) 07/01/05-06/30/10	NIH/NIAAA	$5,269,418
Dr. Frederick Benz		
MT Interaction with Zn-Binding Proteins in the Heart (Co-I; W Feng, PI) 04/01/05 – 03/31/07	NIH	$404,250
Dr. Jian Cai		
MT prevents diabetic protein nitration in the heart (Co-I; L Cai, PI) 09/30/2004 – 09/29/2006	NIH	$515,500

	Agency	***Budget Requested***
Dr. Jian Cai (continued)		
MT interaction with Zn-binding proteins in the heart (Co-I; W Feng, PI) 04/01/2005 – 03/31/2007	NIH	$404,250
NanoLC linear Q-trap mass spectrometer (Co-I; W Pierce, PI) 04/01/2005 – 03/31/2006	NIH	$500,000
Short term course in proteomic analysis (Co-I; J Klein, PI) 12/01/2004 – 11/30/2009	NIH	$798,328
MT prevents diabetic protein nitration in the heart (Co-I; L Cai, PI) 04/01/2005 – 03/31/2007	NIH	$404,250
Functional map of S1P signaling in endothelial cell (Co-PI; M-J Lee, PI) 07/01/2005 – 06/30/2010	NIH	$1,837,500
Dr. Theresa S. Chen		
Green tea polyphenols: A novel approach to IBD (Co-I; Dr. Oz, PI)	NIH	
Podocytes and oxidative stress in diabetic kidney (Co-I; P Epstein, PI) 09/30/05 – 08/31/10	NIH/NIDDK	$250,000
Dr. Paul N. Epstein		
Podocytes and oxidative stress in diabetic kidney (PI) 09/30/05 – 08/31/10	NIH/NIDDK	$250,000

Dr. Evelyne Gozal	***Agency***	***Budget Requested***
Heat shock proteins in spinal cord neural survival (Co-I; M Rane, PI) 07/01/05 – 06/31/10	NIH	$902,020
Role of Hsp27 in regulation of PMN apoptosis (Co-I; M Rane, PI) 04/01/04 – 03/31/09	NIH/NIAID	$1,250,000
Diet and susceptibility to intermittent hypoxia (Co-I; B Row, PI) 04/01/04 – 03/30/09	NIH/NHLBI	$1,000,000
Cell antioxidant transgenes in diabetes and transplantation (Co-I; P Epstein, PI) 08/01/04 – 07/31/09	NIH	$1,125,000
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J Klein, PI) 04/01/05 – 03/31/10	NHLBI	$1,000,000
Role of Hsp90 interactions in PC-12 survival to hypoxia (Mentor; C. Wiegand, PI) 03/05 -02/07	NIH (F30 NS051998)	$79,349
Dr. Ramesh Gupta		
Molecular analysis of human cervical cancer development (PI)	NCI	$1,243,767
Biomarkers of human cervical cancer development (PI) 07/05 – 06/10	NCI	$1,786,870
Molecular analysis of human cervical cancer development (PI) 07/05 – 06/08	NCI	$1,243,767
Biomarkers of human cervical cancer development (PI) 07/05 – 06/10	NCI	$1,786,870
Kentucky Network for Cancer Health Disparity (PI) 04/05 – 03/10	NCI	$3,814,344
Dietary chemoprevention of breast cancer (PI)	AICR	$150,000
Dr. David W. Hein		
Pharmacogenetics of drug and carcinogen metabolism (PI; minority supplement for Dr. LaCreis Kidd) 07/01/04 – 06/30/08	NIH/NCI	$509,635

Dr. David W. Hein (continued)	***Agency***	***Budget Requested***
Characterization of NAT1 overexpression in breast tumors (PI) 07/01/04 – 06/30/06	NIH/NCI	$113,749
Human hepatocyte characterization (PI) 03/01/04 – 12/31/04	Tissue Transformation Technologies	$1,386
International Conference on Tobacco Induced Diseases (Member of Organizing Committee; D Kinane, PI) 09/08/04 – 09/07/05	NCI	$3,500
Xenobiotic metabolizing genes and prostate cancer (Co-I; L Kidd, PI) 07/01/04 – 06/30/05	James Graham Brown Cancer Center	$40,000
NanoLC-Linear Q-trap Mass Spectrometer (Major User; W Pierce, PI) 04/01/05 – 03/31/06	NIH/NCRR	$500,000
Predictive genetic polymorphisms in surgical pancreatic cancers (Co-I; R Martin, PI) 2004 - 2007	US Department of Veterans Affairs Merit Review	$165,000
The role of DNA adduct formation in pancreatic cancer carcinogenesis (Co-I; R Martin, PI) 07/01/05 – 06/30/07	American Association for Cancer Research	$100,000
Polymorphisms in MnSOD as a risk factor for lung cancer (Co-I/mentor; R.Martin, PI) 04/01/05 – 03/31/10	NIH	$540,000
Regulatory genes of NFkappaB and their effect on IBD (Co-I; S Galandiuk, PI) 12/01/04 – 11/30/06	NIH	$294,000
Gene expression in UC dysplasia/cancer (Co-I; S Galandiuk, PI) 12/01/04 – 11/30/06	NIH	$294,000
Genomic assessment of human hepatic metabolism (Subproject investigator; P Wedlund, PI) 12/01/04 – 11/30/09	NIH	$2,328,285

Dr. David W. Hein (continued)	***Agency***	***Budget Requested***
MnSOD polymorphisms as a risk factor for lung cancer (Co-I; R Martin, PI) 07/01/05 – 06/30/07	Sidney Kimmel Foundation for Cancer Research	$200,000
Polymorphisms in MnSOD as a risk factor for lung cancer (Co-I; R Martin, PI) 01/01/05 – 12/31/08	Damon Runyon Cancer Research Foundation	$300,000
NAT1 and NAT2 genotype determinations in cancer center patients and controls (PI) 01/01/04 – 12/31/09	MD Anderson Cancer Center	$20,000
Dr. Harrell E. Hurst		
Biochemistry of DAF-9 and DAF-12 interaction (Co-I; K. C. Falkner, PI) 07/01/05 – 06/30/09	NIH	$900,000
Dr. Y. James Kang		
Endothelin-mediated cardiotoxicity of airborne particulate matter (PI)	Philip Morris External research Program	$1,190,000
Metallothionein and hepatic oxidative stress (Co-I; W Maret, PI)	NIH-NIAAA	$$3,085,971
Zinc and alcohol-induced oxidative liver injury (Co-I; Z Zhou, PI)	NIH-NIAAA	$1,000,000
Han-Dan-Gabn-Le therapy for toxic liver fibrosis (PI)	NIH-NCCAM	$2,217,355
Dr. La Creis R. Kidd		
Kentucky Network for Cancer Health Disparities (Co-I; R Edwards, PI)	NCI	$5,592,114
Dr. W. Glenn McGregor		
Mutagenesis as a novel target for cancer prevention (PI) 07/01/04 – 06/30/05	James Graham Brown Cancer Center pilot Grant	$40,000

	Agency	***Budget Requested***
Dr. W. Glenn McGregor (continued)		
Mutagenesis as a novel target for cancer prevention (PI) 01/05 – 12/31/08	NIH/NCI	$700,000
Novel strategies to prevent lung cancer (PI) 7/01/05-6/30/07	NIH/NCI	$100,000
Novel strategies to prevent lung cancer (PI) 01/01/05 – 12/21/06	NIH/NCI	$100,000
Estrogen receptor expression and activity in lung cancer (Co-I; C Klinge, PI) 03/01/05 – 02/28/08	NIH/NCI	
Dr. Steven R. Myers		
Establishment of Breast Milk Bank in Louisville/Carcinogens in Breast Milk (Co-I; D Adamkin, PI) 07/01/05 – 06/30/06	American Breastfeeding Institute	$189,871
Dr. Donald E. Nerland		
Inhibition of lung cancer cell growth by PPARγ (PI) 08/01/04 – 07/31/05	James Graham Brown Cancer Center	$40,000
Transcriptional control mechanisms in chemoprevention (PI) 07/01/05 – 06/30/07	NCI	$100,000
Dr. William M. Pierce, Jr.		
Biomarkers of Human Cervical Cancer Development (Co-I, R Gupta, PI) 11/1/2004 – 10/31/09	NIH/NIA	$2,548,734
Center for Regulatory Metabolomics: From Molecules to Communities (Co-I; T Fan, PI) 2005 - 2008	NSF/EPSCoR	$2,827,167
Signaling Pathways of Replicative Senescence (Co-I; E Wang, PI) 10/1//2004 – 9/30/09	NIH/NIA	
NanoLC – Linear Q-trap Mass Spectrometer (PI) 4/1/05 – 3/31/06	NIH/NCRR	$500,000

	Agency	***Budget Requested***
Dr. William M. Pierce Jr. (continued)		
Integrative Tools for Environmental Metabolomics (Co-I, T Fan, PI) 2005 - 2008	NIH/NIEHS	$5,619,296
Discovery of Protein Biomarkers for Heart Failure (Co-I; S Jortani, PI) 10/1/05 – 9/30/10	NIH/NHLBI	$1,837,500
Cellular and Molecular Bases for Iron Toxicity (Co-I; J Eaton, PI) 4/1/05 – 3/31/2010	NIH/NIDDK	$1,653,750
Kinase Pathways in Diabetic Nephropathy (Co-I; K McLeish, PI) 4/1/05 – 3/31/2010	NIH/NIDDK	$1,837,500
Estrogen expression and activity in lung cancer (Co-I; CKlinge) 7/1/05 – 6/31/2010	NIH/NCI	$1,837,500
Hormones, hypogravity and endothelial cells (Co-I; C Klinge, PI) 7/1/05 – 6/31/2010	NASA	$449,820
MT prevents diabetic protein nitration in the heart (Co-I; L Cai, PI) 4/1/05 – 3/31/2007	NIH/NIDDK	$404,250
Regulation of NaPi IIa Trafficking by NHERF-1 (Co-I; E Lederer, PI) 7/1/05 – 6/30/09	NIN/NIDDK	$1,453,550
Proteomic Analysis of Persistent *Chlamydia pneumoniae* (Co-I; J Summersgill, PI) 7/1/05 – 6/31/10	NIH	$2,842,755
Dr. Zhao-hui (Joe) Song		
Cannabinoid receptors-Potential targets for novel antiglaucoma drugs (PI) 08/01/03 – 07/31/07	NIH	$1,174,166
Dr. J. Christopher States		
Molecular mechanisms of arsenic enhancement of benzo[a]pyrene genotoxicity in human cells (PI) 09/01/04 – 08/31/05	Kentucky Science and Engineering Foundation	$15,000
Genetic Polymorphisms in 5'-UTR of human NAT1 and NAT2 (Co-I) 12/01/03 – 11/30/04	UofL CGeMM Pilot Project	$30,000

	Agency	***Budget Requested***
Dr. J. Christopher States (continued)		
Murine Model for Arsenic Induced Atherogenesis (PI) 12/01/03 – 06/30/05	UofL CGeMM Pilot Project	$30,000
Mechanism of Arsenic Induced Atherogenesis (PI) 12/01/04 – 11/30/06	NIH/NIEHS	$404,250
Effect of fetal arsenic exposure on vascular disease (PI) 04/01/05 – 03/31/08	NIH/NIEHS	$441,000
Aneuploidy & apoptosis: Ying & yang of arsenic toxicity (PI) 07/01/05-06/30/08	NIH / Fogarty International Center	$196,000

XI. Research Grants and Contracts in Force (salaried faculty)

	Agency	***Project Award***
Dr. Gavin E. Arteel		
Hypoxia and free radicals in alcoholic pancreatitis (PI) 08/01/01-07/31/06	NIH (NIAAA)	$555,846
Control of drug and ethanol metabolism (PI) 11/01/01-06/30/05	NIH (NIAAA)	$594,413
Prevention of hepatic ischemia reperfusion injury by liposomal delivery of ATP (PI) 07/01/03 – 06/30/04	Intramural IRIG Grant	$10,000
Oval cells in alcoholic hepatocellular carcinoma (Mentor; J Lambert, PI) 07/01/03 – 06/30/04	James Graham Brown Cancer Center	$28,000
Probiotic trefoil therapy for IBD-induced colorectal carcinoma (PI) 07/01/04 – 06/30/05	James Graham Brown Cancer Center	$36,307
Dr. Jian Cai		
Cardiovascular toxicity of environmental aldehydes (Co-I; A Bhatnagar, PI) 07/01/03 – 06/30/08	NIH	$6,986,000
Dr. Theresa S. Chen		
Glutathione intervention in diabetes mellitus (PI) 06/01/04 – 05/31/05	Kentucky Science and Technology Corporation	$15,000
Mechanisms of alcohol-induced immunosuppression (Co-I; S Barve, PI) 09/01/04 – 06/30/09	NIAAA	
Adomet and carinii pneumonitis (Co-I; Dr. Oz, PI) 07/01/03 – 06/30/05	NIH	$366,250
Oral Antioxidant/Anticytokine Therapy for ALD (Co-I; D Hill, PI) 08/01/02 – 07/31/06	NIAAA	$1,000,000

	Agency	***Project Award***
Dr. Paul N. Epstein		
Podocyte specific antioxidant protection in diabetic nephropathy (PI) 03/01/05 – 02/28/08	Juvenile Diabetes Res. Foundation	$149,000
Cardiac neuropathy in Type I diabetic and aging mice (PI) 09/30/04 – 08/31/08	NIH/NHLBI	$250,000
A causative role for nucleolin in malignant transformation? (Co-I; P Bates, PI) 08/01/04 – 07/31/06	NIH/NCI	$100,000
Altered glucose homeostasis by sleep impairment (PI) 09/30/03 – 06/30/07	NIH/NHLBI	$225,000
β-cell antioxidant transgenes in diabetes and transplantation (PI) 09/01/00 – 08/31/04	NIH/NIDDK	$125,000
Reducing diabetic cardiomyopathy by increasing glycolysis (PI) 09/01/00 – 08/31/04	NIH/NHLBI	$172,000
Antioxidant transgenes in diabetic cardiomyopathy (PI) 08/01/99 – 07/30/07	NIH/NHLBI	$200,000
Molecular determinants of developmental defects (Co-I; Ye Qi Liu, PI) 09/30/02 – 09/29/07	NIH/NGA	$150,000
Analysis of diabetic nephropathy (Co-I; J Klein, PI) 7/1/02-6/30/04	NIH	$100,000
Dr. David Gozal		
Neurocognitive function in snoring children (PI) 9/01/03 – 6/30/08	NHLBI	$1,200,000
REM sleep deprivation, hypoxia, and hippocampal function (PI) 09/01/00 -6/30/05	NHLBI	$900,000
Proteomic analysis of hipoccampal hypoxic vulnerability (Co-I; J Klein, PI) 10/01/00 – 9/30/05	NHLBI	$700,000
Postnatal Brain Susceptibility to Intermittent Hypoxia (PI) 03/01/02 - 02/28/06	NHLBI	$1,000,000

	Agency	***Project Award***
Dr. David Gozal (continued)		
Reversal of Learning Deficits in 3-4 Year Old Children with Obstructive Sleep Apnea (PI) 07/01/02 - 06/30/04	Centers for Disease Control	$494,000
Whole-Body Hypoxic Pre-Conditioning (Co-I; Y Wang, PI) 06/01/02-05/31/04	Department of Defense	$350,000
Role of Vagal Afferents in Hyperpnea (Co-I; J Yu, PI) 01/01/03-12/31/07	NHLBI	$1,100,000
ROS in intermittent hypoxia-mediated neuronal cell death (Co-I; R Liu, PI) 2/1/03 – 1/31/07	NINDS	$1,150,000
Aging, episodic hypoxia, and vagal cardiac projections (Co-I; Z Cheng, PI) 5/1/03 – 4/30/08	NIA	$1,225,000
Cancer Education Grant Program (student mentor) 08/01/02 – 07/31/07	NCI	
Altered glucose homeostasis by sleep impairment (Co-I; P Epstein, PI) 10/1/03 – 6/30/07	NHLBI	$900,000
Dr. Evelyne Gozal		
Hypoxia-induced Akt signaling module in neuronal cells (PI) 07/01/03 – 06/30/08	NIH	$1,000,000
Postnatal brain susceptibility to intermittent hypoxia (Co-I; D Gozal, PI) 04/01/02 – 03/31/06	NHLBI	$1,000,000
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J Klein, PI) 10/01/00 – 09/30/04	NHLBI	$700,000
Altered glucose homeostasis by sleep impairment (Co-I; P Epstein, PI) 10/1/03 – 6/30/07	NHLBI	$900,000
ROS in episodic hypoxia-induced cardiovascular dysfunction (Co-I; R Liu, PI) 10/1/03 – 6/30/07	NHLBI	$1,000,000

	Agency	***Project Award***
Dr. Evelyne Gozal (continued)		
MCT, intermittent hypoxia, and stroke (Co-I; J Siegel, PI) 6/1/03 – 5/31/08	NHLBI	$1,000,000
Dr. Ramesh Gupta		
Superfund chemicals: Transport, metabolism and toxicity (Co-I; B Henning, PI) 04/97 – 03/05	NIEHS	$215,670
Breast cancer etiology (PI) 11/01 – 10/05	NCI	$1,093,925
Chemoprevention of experimental tobacco tumorigenesis (PI) 06/02 – 04/05	NCI	$1,461,364
Role of antioxidants in breast cancer prevention (PI) 04/02 – 03/04	NCI	$112,684
Dr. David W. Hein		
Pharmacogenetics of drug and carcinogen metabolism (PI) 07/01/03 – 06/30/08	NIH/NCI	$1,724,900
Effect of acetylator genotype on genotoxicity from aromatic and heterocyclic amine carcinogens (PI) 07/01/02 – 06/30/05	Philip Morris USA	$615,848
Environmental genomics and molecular epidemiology of lung cancer (PI) 10/1/01 – 09/30/05	Kentucky Lung Cancer Research Program	$299,949
Education in genetics ethics (EDGE) (Co-I;; M Rothstein, PI) 5/3/02 – 03/31/05	NIH	$1,360,592
Hybrid quadrupole – Time of flight mass spectrometer (Major user and member of technical advisory committee; W Pierce, Jr., PI) 04/01/02 – 03/31/04	NIH	$500,000
Center for Pediatric Pharmacology Research (Co-I; J Sullivan, PI) 01/01/04 – 12/31/08	NIH	$1,862,408

Dr. David W. Hein (continued)	***Agency***	***Project Award***
Biomarkers of maternal and fetal tobacco smoke exposure (Co-I; S Myers, PI) 07/01/02 – 06/30/04	Kentucky Lung Cancer Research Program	$93,016
James Graham Brown P20 Application (Project Director; D Miller, PI) 08/02/02 – 07/31/05	NIH/NCI	$1,328,613
Cancer Education Grant Program (Mentor; N Burzynski, PI) 08/01/02 – 07/31/07	NIH/NCI	$557,437
Pharmacogenetics of drug and carcinogen metabolism (minority supplement) (PI) 07/01/04 – 06/30/08	NIH/NCI	$509,635
Cardiovascular toxicity of environmental aldehydes (Co-I; A Bhatnagar, PI; R. Prough, Project PI) 07/01/03 – 06/30/08	NIH/NIEHS	$6,986,060
Metabolism and Detoxification of Base Propenals (Collaborator; S Srivastava, PI) 06/01/03 – 03/31/08	NIH	$1,559,485
Metabolism and toxicity of aromatic amines associated with hair dyes (PI) 07/01/02 – 09/30/05	Procter and Gamble Inc.	$310,885
Research in support of Amonafide study (PI) 07/01/02 – 12/31/04	Chemgenex Therapeutics	$8,064
Genetic polymorphisms in manganese superoxide dismutase (MnSOD) as a predictor of lung cancer (Co-I; R. Martin, PI) 03/01/03 – 02/28/04	James Graham Brown Cancer Center	$30,000
Histamine pharmacogenetics in children with atopic dermatitits (Collaborator/Mentor; MJ Kennedy, PI) 07/01/03 – 06/30/05	Research Institute of the American College of Pharmacy	$12,500
Genetic polymorphisms in the 5'-UTR of human NAT1 and NAT2 (PI) 01/01/04 – 12/31/04	CGeMM	$30,000
Genetic polymorphisms in the 5'-UTR of human NAT1 and NAT2 (Mentor) NRSA Fellowship for Anwar Husain 07/01/03 – 06/30/07	NIEHS	$145,022

	Agency	***Project Award***
Dr. David W. Hein (continued)		
Characterization of NAT1 overexpression in breast tumors (PI) 07/01/04 – 06/30/06	NIH/NCI	$113,749
UofL Environmental Health Sciences Training Program (PI) 07/01/04 – 06/30/09	NIH/NIEHS	$697,188
Nashville Breast Health Study (Subproject Principal Investigator; W Zheng, PI) 06/01/04 – 05/31/09	NCI	$189,035
Kosair Charities Birth Defects Research Fellowship (Mentor/Co-investigator; Jason Neale, PI) 01/01/04 – 12/31/04	Kosair Charities	$25,000
Mechanistic studies on the NAT2 genetic polymorphism: a potential factor that modifies individual breast cancer risk (Mentor/Co-investigator; Yu Zang, PI) 05/01/04 – 04/30/06	Susan G. Komen Breast Cancer Foundation	$30,000
Human hepatocyte characterization (PI) 03/01/04 – 12/31/04	Tissue Transformation Technologies	$1,386
NAT1 and NAT2 genotype determinations in cancer patients and controls (PI) 01/01/04 – 12/31/09	MD Anderson Cancer Center	$20,000
International conference on tobacco induced diseases (Co-I; D Kinane, PI) 09/08/04 – 09/07/05	NCI	$3,500
Xenobiotic metabolizing genes and prostate cancer (Co-I) 07/01/04 – 06/30/05	James Graham Brown Cancer Center	$40,000
Dr. Harrell E. Hurst		
Biomarkers for air pollutants (PI) 10/01/04 – 09/30/05	USEPA/EPSCoR	$371,571
Center for Pediatric Pharmacology Research (Co-I; J Sullivan, PI) 01/01/04 – 12/31/08	NIH/NICHD	$1,862,408

	Agency	***Project Award***
Dr. Harrell E. Hurst (continued)		
Cardiovascular toxicity of environmental aldehydes (Co-I; A Bhatnagar, PI) 07/01/03 – 06/30/08	NIH/NIEHS	$5,015,729
Dr. Y. James Kang		
Metallothionein and adriamycin cardiotoxicity (PI) 12/01/02 – 11/30/06	NIH/NHLBI	$1,086,560
Oxidative stress and heart failure by copper deficiency (PI) 07/01/01 – 06/30/05	NIH/NHLBI	$1,312,188
Prevention by MT of chronic alcoholic liver injury (Co-I; Z Zhou, PI) 08/01/02 – 07/31/05	NIH/NIAAA	$432,000
Myocardial protection by MT from diabetes (Co-I; L Cai, PI) 08/01/02 – 07/31/05	Philip Morris External Research Program	$516,465
Dr. La Creis Kidd		
Polymorphic xenobiotic metabolizing genes and prostate cancer (PI) 07/04 – 07/05	James Graham Brown Cancer Center Pilot Research Grant	$40,000
Polymorphic N-acetyltransferase genes and prostate cancer susceptibility among African-American men (Co-I; D Hein, PI) 07/01/04 – 06/30/08	NCI	$509,635
Dr. W. Glenn McGregor		
Molecular strategies to avoid mutagenesis by cigarette smoke-associated carcinogens (PI) 06/01/02 – 05/31/05	Philip Morris External Research Program	$349,700
Mechanisms of BPDE-induced mutagenesis and mutation avoidance (PI) 10/01/01 – 09/30/05	Kentucky Lung Cancer Research Program	$225,000
Shared genomic responses to space flight and aging (Co-I; E Wang, PI) 05/01/03 – 04/30/06	NASA Cell Science Program	$115,000

	Agency	***Project Award***
Dr. W. Glenn McGregor (continued)		
Inflammation and mutagenesis in lung carcinogenesis (PI) 12/01/03 – 06/30/05	CGeMM	$30,000
Mutagenesis as a novel target for cancer prevention (PI) 07/01/04 – 06/30/05	James Graham Brown Cancer Center Pilot Grant	$40,000
Role of chemoattractant-mediated inflammation in development and progression of lung cancer (Co-I with H Bodduluri) 10/01/03 – 9/30/06	Kentucky Lung Cancer Research Board	$300,000
Cancer Education Grant Program (Participating mentor; N Burzynski, PI) 9/01/2002-8/31/2007	NIH/NCI	$516,145
Biacore 3000 Shared Instrument Grant (Participating Investigator; D Miller, PI)	National Center for Research Resources	$270,000
Lung Cancer Research Consortium (Co-I; H Bodduluri, PI)	James Graham Brown Cancer Research Consortium	$40,000
Dr. Steven R. Myers		
Biomarkers for air pollutants: Development of hemoglobin adduct methodology for assessment of exposure to butadienes and polycyclic aromatic hydrocarbons (Co-I; H Hurst, PI) 10/01/01 – 09/30/05	Kentucky EPSCoR Program	$753,654
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 Klein, PI) 2002 2004	NIH	$200,000
Hybrid Quadrupole Time of Flight Mass Spectrometer (PI) 4/1/02 – 3/31/04	NIH	$500,000

	Agency	***Project Award***
Dr. William M. Pierce, Jr. (continued)		
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J Klein, PI) 10/00-9/04	NIH	$1,000,800
Evolution of a pheromone signaling system (Co-I; L Houck and R Feldhoff, PI) 07/15/01 - 07/14/04	NSF	$3,022,625
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) 4/1/01 – 03/31/04	NIH	$144,000
Analysis of PTH and Dopamine Receptor Signaling in Proximal Tubules (Co-I; Eleanor Lederer, PI) August 2001 - July 2005	Veterans Administration	$464,500
Cardiovascular toxicity of environmental aldehydes (Co-I; A Bhatnagar, PI) 07/01/03 – 06/30/08	NIH	$5,015,729
Bone anabolic agents (PI) 12/01/04 – 11/30/07	Kentucky Science and Technology Corporation	$225,000
Bone targeting of pharmaceuticals (PI) 09/01/04 – 08/31/05	Kentucky Science and Technology Corporation	$16,500
Mechanistic studies of oligonucleotide aptamers with potent antiproliferative and pro-apoptotic activity against prostate cancer cells (Co-I; P Bates, PI) October 2003 – August 2006	Department of Defense	$375,000
Rabbit model for in vivo monitoring of bone structure (Co-I; M Voor, PI) September 2003 – August 2004	NIH	$50,000
Center for Pediatric Pharmacological Research (Co-I; J Sullivan, PI) 07/01/03 – 06/30/08	NIH	$1,862,408
Pharmacogenetics of drug and carcinogen metabolism (Co-I; D Hein, PI) 07/01/03 – 06/30/08	NIH	$1,724,900

Dr. William M. Pierce, Jr. (continued)	***Agency***	***Project Award***
A proteome map of neutrophil granules (Co-I; K McLeish, PI) 07/01/03 – 06/30/04	NIH	$100,000
Dr. Peter P. Rowell		
Effects of self-administered versus noncontingent nicotine (Co-I; A Caggiula, PI) 10/01/00 – 09/30/05	NIH	$819,469
Postnatal brain susceptibility to intermittent hypoxia (Co-I; D Gozal, PI) 04/01/2002 – 03/31/2007	NIH (NHLBI)	$1,250,000
Dose and time dependent effects of nicotine on bone blood flow (Co-I; C. Roberts, PI) 01/01/03 – 6/25/06	Fischer-Owen Orthopaedic Trust Fund	$8,517
The neuromolecular and neurochemical basis of nicotine's variable effects on behavior (PI) 06/01/01 – 03/31/05	Subcontract from Virginia Commonwealth University	$27,614
Dr. Zhao-Hui (Joe) Song		
Structure and function of CB2 cannabinoid receptor (PI) 09/30/98 – 04/30/04	NIH	$507,304
Structure and function of CB2 cannabinoid receptor (PI) 05/01/04 – 04/30/09	NIH	$1,286,104
Cannabinoid receptors-potential targets for novel antiglaucoma drugs (PI) 08/01/03 – 07/31/07	NIH	$1,174,166
The characterization of the human CB1 receptor (Mentor; Brandon Kellie, PI) 09/15/03 – 08/15/04	UofL Research Scholar Program	$3,000
Molecular epidemiology – Environmental/occupational diseases (Faculty mentor; D Hein, PI) 07/01/04 – 06/30/09	NIEHS	$1,240,452
Dr. J. Christopher States		
Pharmacogenetics of drug and carcinogen metabolism 07/01/02 - 06/30/07 (Co-I; D Hein, PI)	NCI	$2,510,251

	Agency	***Budget Requested***
Dr. J. Christopher States (continued)		
Cancer Education Program (Faculty mentor) 05/01/02 – 04/30/07	NCI	$557,437
Arsenic induced mitotic arrest associated apoptosis (PI) 07/01/03 – 06/30/08	NIEHS	$1,385,869
Murine model for arsenic induced atherogenesis (PI) 12/1/03 – 06/30/05	CGeMM	$30,000
Metabolism and detoxification of base propenals (Co-I; S Srivastava, PI) 06/01/03 – 03/31/08	NIEHS	$1,650,750
Genetic polymorphisms in 5'-UTR of human NAT1 and NAT2 (Co-I) 12/01/03 – 11/30/04	CGeMM	$30,000
Molecular mechanisms of arsenic enhancement of benzo[a]pyrene genotoxicity in human cells (PI) 09/01/04 – 08/31/05	Kentucky Science and Engineering Foundation	$15,000
Arsenic inhibition of mitotic progression (Mentor) 05/01/04 – 07/31/07	NIH/NIEHS	$81,884
UofL Environmental Health Sciences Training Program (Faculty mentor) 07/01/04 – 06/30/09	NIH/NIEHS	$667,160
Dr. Leonard C. Waite		
Bone anabolic agents (Co-I, W Pierce, PI) 12/01/04 – 11/30/07	Kentucky Science and Technology Corporation	$225,000
Bone targeting of pharmaceuticals (Co-I; W Pierce, PI) 09/01/04 – 08/31/05	Kentucky Science and Engineering Foundation	$16,500

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.

Dr. Myers developed and implemented a new online version of this course presented to students throughout the Commonwealth.

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. Evelyne Gozal (2006)
Dr. Chris States (2005)
Dr. Gavin Arteel (2004)
Yu "Janet" Zang (student representative)

SIBUP/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Joe Song (2006)
Dr. Don Nerland (2005)
Dr. Harrell Hurst (2004)

Teaching Evaluation Committee

Dr. Mike Williams (Chair)
Dr. Harrell Hurst (2006)
Dr. Len Waite (2005)
Dr. Fred Benz (2004)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Ramesh Gupta (2006)
Dr. Fred Benz (2005)
Dr. Steve Myers (2004)

Core Laboratories/Research Development Committee

Dr. Chris States (Chair)
Dr. Jian Cai (2006)
Dr. Glenn McGregor (2005)
Dr. Theresa Chen (2004)

Information Technology Committee

Dr. Gavin Arteel
Dr. Fred Benz
Dr Harrell Hurst

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OFFICE OF THE
UNIVERSITY PROVOST

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Louisville, Kentucky 40292
Office: 502-852-6153
Fax: 502-852-0657

May 21, 2004

Dr. David Hein, Chair
Department of Pharmacology and Toxicology
University of Louisville
School of Medicine
Room 1319
Louisville, KY 40292

Dear Dr. Hein:

I wish to commend you and the Department of Pharmacology and Toxicology for the excellent job you've done this year. I want to reiterate the Committee's laudatory comments about the department's steady growth in its sponsored research funding. Equally distinctive is its extensive engagement in collaborative activities with faculty members of other departments. I am particularly impressed with the level and extent to which faculty serve in joint appointments, thus, providing core research service to other units.

To reiterate Professors Wiegman's and Schweitzer's observations of your leadership as chair, the department has radically changed, but is stronger and has changed for the better under your leadership. We are indeed fortunate to have such a fine administrator as yourself at the University of Louisville.

In addition, the department's efforts in the recruitment of African American students and tenure-track faculty are to be congratulated, too.

Again, I want to thank you for your support of the Department of Pharmacology and Toxicology and the program review process. If you have any questions about my comments, please call me for clarification.

Sincerely,

Shirley C. Willihnganz
Executive Vice President and
University Provost

SCW/gh

cc: David Weigman, Associate Vice President, School of Medicine
Laura Schweitzer, Acting Dean, School of Medicine
Professor William Pierce, Department of Pharmacology, School of Medicine
University Program Review Committee
Faculty Senate Academic Programs Committee