

**Department of
Pharmacology and Toxicology**



2001

Annual Report



Department of Pharmacology and Toxicology

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INDIVIDUAL FACULTY REPORTS

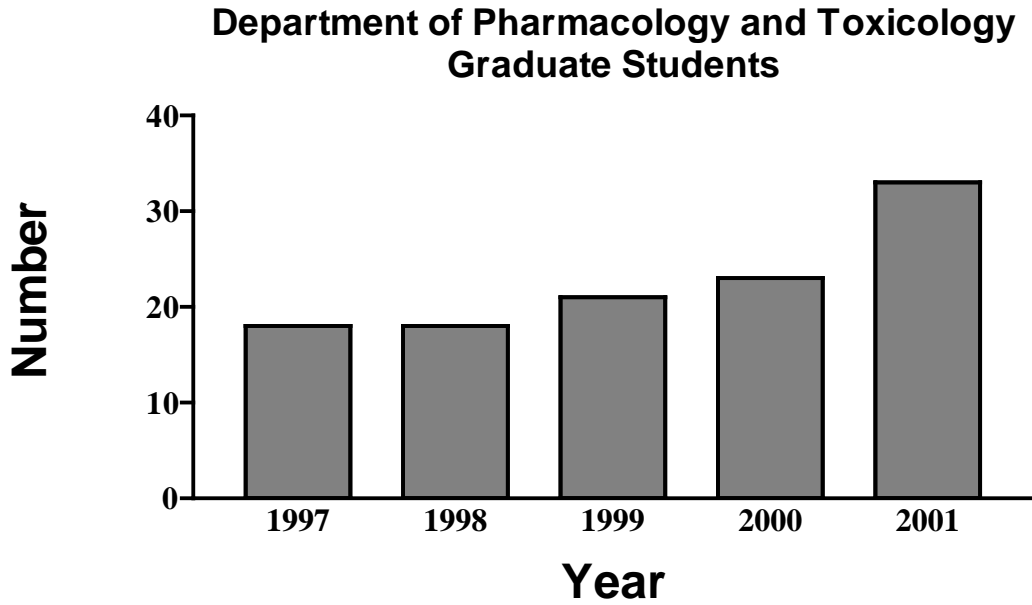
Frederick W. Benz
Theresa S. Chen
Paul N. Epstein
David Gozal
Evelyne Gozal
David W. Hein
Harrell E. Hurst
Y. James Kang
W. Glenn McGregor
Steven R. Myers
Donald E. Nerland
William M. Pierce, Jr.
Peter P. Rowell
Zhao-hui (Joe) Song
J. Christopher States
Leonard C. Waite
Walter M. Williams

I. Department Highlights

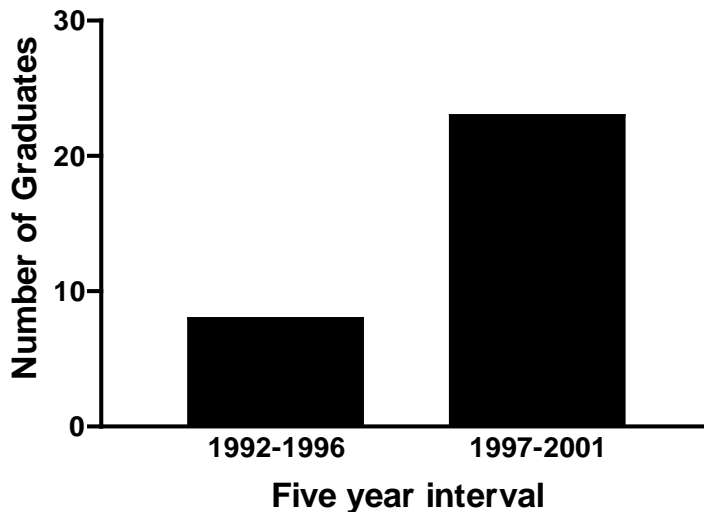
The Department of Pharmacology and Toxicology continued its efforts to increase its role in graduate education and research as outlined in its strategic plan. Some highlights of the year included:

- **Dr. Larry Carr** was honored and appointed Professor Emeritus upon his retirement as Professor of Pharmacology and Toxicology and Associate Dean for Curriculum in September. Larry provided outstanding contributions to the University of Louisville for over 30 years. He was first appointed assistant professor in 1969, and was promoted to associate professor in 1975 and full professor in 1981. In 1987, he began his additional appointment as associate dean for curriculum in the School of Medicine. A number of curricular reforms were initiated during his tenure as associate dean and he set the stage for several more to come. He directed several important courses, including the medical pharmacology course from 1981 to 1997. Seven students completed their MS or PhD degrees in his laboratory. Larry continued to be active in research as professor emeritus.
- Several new faculty members received joint appointments in the Department of Pharmacology and Toxicology bringing additional expertise to our graduate, teaching, and research programs. Descriptions of their research activities are included in the faculty listing later in this report. In addition, **Abbas Parsian, PhD**, Associate Professor in the Birth Defects Center was appointed as faculty associate. The new faculty receiving joint appointments in 2001 were:
 - **Shirish Barve, PhD**, Associate Professor
 - **Haribabu Bodduluri, PhD**, Associate Professor
 - **David E. Clouthier, PhD**, Assistant Professor
 - **Craig J. McClain, MD**, Professor
 - **David J. Tollerud, MD**, Clinical Professor
 - **Yang Wang, MD, PhD**, Assistant Professor
- The medical pharmacology course, under the direction of **Dr. Mike Williams**, continued to be one of the most highly rated courses by the medical students. The Department continued to incorporate more clinical problem based learning and small group teaching into the course format.
- The annual William J. Waddell Seminar, honoring Professor and Chair Emeritus Dr. William J. Waddell was initiated in 2001. The first speaker was Dr. Victor J. Feron, Toxicology Division, TNO Nutrition and Research, The Netherlands.
- One of our most distinguished alumni, Dr. Karl Csaky, Head of Gene Therapy, Laboratory of Immunology, National Eye Institute, NIH, presented the second annual K.C. Huang Memorial Seminar.
- The Department submitted its first NIEHS training grant in May. The priority score was promising and a revised proposal was submitted in 2002.

- The new Peter K. Knoefel Conference room was completed and was used extensively for meetings and seminars.



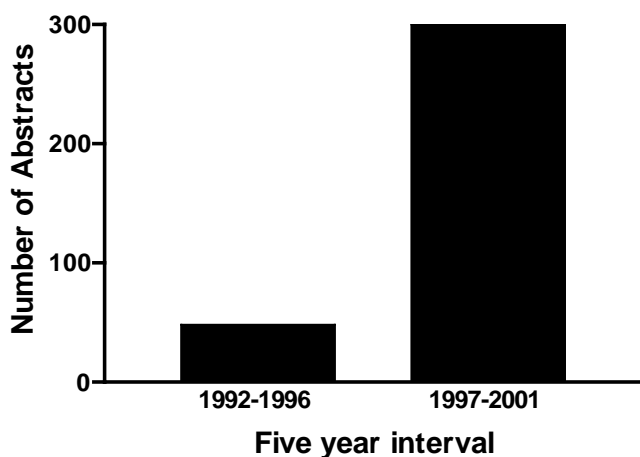
- Eight students received graduate degrees in 2001. Twelve new graduate students entered the program. The size of the graduate program continues to show steady growth.



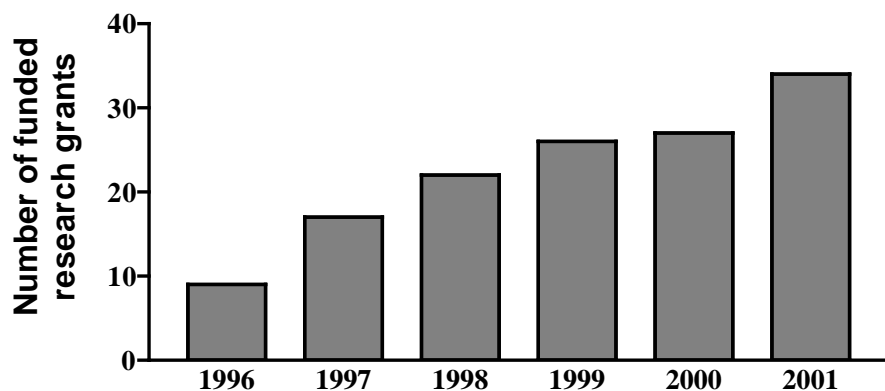
- The number of graduates of our program over the most recent five-year period has more than doubled compared to the previous five-year period.



- Published manuscripts over the most recent five-year period are up over fourfold.



- Abstracts over the most recent five-year period are up over sixfold.



- The number of funded research grants in which salaried faculty serve as principal investigator continues to increase. The number is up almost threefold over the baseline in 1996.

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 will focus on accomplishment of five broad objectives:

- Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, nursing, and other health care professional students. Emphasis will be placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.
- Advance biomedical knowledge through active contribution to high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville Challenge for Excellence.
- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who can provide and advance biomedical education, research, and service.
- Provide instruction of the highest quality in pharmacology and toxicology that is appropriate for students at the undergraduate, graduate, and postgraduate levels.
- Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

III. Faculty/Research Descriptions (Primary and joint appointments)



George R. Aronoff, M.D. (Indiana University)
Professor

Effects of uremia on drug disposition in humans; drug nephrotoxicity and renal drug metabolism, artificial intelligence.



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.



Haribabu Bodduluri (Indian Institute of Science)
Associate Professor

Signal transduction and chemoreceptors. Role of leukotriene receptors in inflammation and host response.



Laurence A. Carr, Ph.D. (Michigan State University)
Professor Emeritus

Biochemical neuropharmacology; functional role of brain biogenic amines; interaction of brain neurotransmitters with peripheral immune system.



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

Biochemical toxicology; role of glutathione in aging toxicology; general and specific toxicity of environmental pollutants.



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 aqueous humor secretion processes; the role of ion transport mechanisms in preserving transparency of the ocular lens.



John W. Eaton, Ph.D. (University of Michigan)
James Graham Brown Professor

Biomaterial-mediated inflammation and fibrosis; sub-endothelial glycochelates, transition metals and diabetic neuropathy; cellular and molecular basis of iron toxicity



Paul N. Epstein, Ph.D. (Baylor College of Medicine)
Professor
Carol B. McFerran Endowed Chair in Pediatric Diabetes Research

Development of transgenic models for the study of causes and complications of diabetes, and the production of mice that are more resistant to diabetes by introducing genes to protect from oxidative stress.



David Gozal, M.D. (Hebrew University of Jerusalem)
Professor
Children's Hospital Foundation Pediatric Research Chair

Signal transduction mechanisms underlying ventilatory response to hypoxia; neuronal adaptations to intermittent hypoxia: growth factors, intracellular signaling, and genomic implications.



Evelyne Gozal, Ph.D. (University of Southern California)
Assistant Professor

Signal transduction pathways involved in neuronal cell survival and neuronal cell death during hypoxia; cellular mechanisms underlying brain adaptation to chronic and intermittent hypoxia; identification of the kinases and transcription factors activated by hypoxia, leading to gene induction and to adaptation to oxygen deprivation.



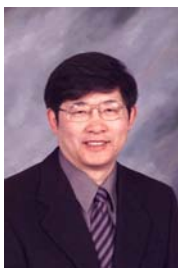
David W. Hein, Ph.D. (University of Michigan)
Peter K. Knoefel Professor and Chairman

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



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

Analytical toxicology and kinetics with emphasis on qualitative and quantitative techniques, including gas chromatography, high pressure liquid chromatography and GC/mass spectrometry.



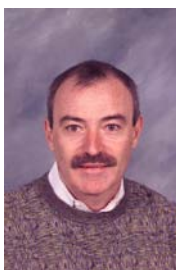
Y. James Kang, Ph.D. (Iowa State University)
Professor

Molecular and cardiac toxicology. Transgenic and knock-out animal models to study oxidative injury and antioxidant systems in the heart. Biological functions and toxicological significance of metallothionein and glutathione in vivo.



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

Role of cytokines in liver injury and other forms of hepatotoxicity, interactions with nutrition and toxicology.



W. Glenn McGregor, M.D. (University of Michigan)
Associate Professor

Molecular biology of DNA damage, repair and mutagenesis; molecular mechanisms of mutagenesis induced by model carcinogens; molecular mechanisms of replication of DNA templates containing well-defined site specific damage.



Donald M. Miller, M.D., Ph.D. (Duke University)
Professor
James Graham Brown Foundation Chair

Molecular and clinical oncology; modulation of oncogene expression; triplex DNA based gene therapy; treatment of melanoma.



Frederick N. Miller, Ph.D. (University of Cincinnati)
Professor

Macromolecular permeability in the microcirculation.



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

Drug design and organ targeting strategies; novel drugs for treatment of osteoporosis; mechanisms of bone formation and resorption; proteomic analysis and study of structure and function of biomolecules and xenobiotics using mass spectrometry.



M. Michele Pisano, Ph.D. (Thomas Jefferson University)
Associate Professor

Molecular development 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. (Yale University, Ph.D.;
State University of New York, M.D.)**
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.



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

Molecular biology and molecular genetics of DNA damage and repair in humans



Janice E. Sullivan, M.D. (University of Minnesota)
Assistant Professor

Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.



David J. Tollerud, M.D. (Mayo Medical School; M.P.H., Harvard University)
Clinical Professor

Occupational and Environmental Medicine; Occupational Toxicology; Molecular Epidemiology



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

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



Yang Wang, Ph.D. (University of Toronto)
Assistant Professor

Molecular and cellular regulation of genes implicated in hypoxic/ischemic injury and protection in the cardiovascular system. Current research is focused on (1) molecular regulation of nitric oxide synthase (NOS) genes during hypoxia/ischemia and their roles in cardiovascular protection afforded by ischemic preconditioning and (2) cyclooxygenase-2 (COX-2) pathway: biological roles and molecular regulation in late preconditioning. Gene regulation is investigated at both the gene transcription level and the RNA biology level.



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.



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

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

IV. Personnel

Faculty with Primary Appointments

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

Carr, Laurence A., Professor; Ph.D., Pharmacology, Michigan State University (1969).

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

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).

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 Graduate Program Director; 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), Assistant 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 Chairman; 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., University of Kentucky (1990).

Bodduluri, Hari, Associate Professor of Pathology and Laboratory Medicine, and Pharmacology and Toxicology; Ph.D., Indian Institute of Science (1983).

Clouthier, David, Assistant Professor of Molecular, Cellular and Craniofacial Biology, and Pharmacology and Toxicology; Ph.D., 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).

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).

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

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

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

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

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

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

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

Tollerud, David, Clinical Professor of Medicine (part-time), and Professor of Pharmacology and Toxicology; M.D., Mayo Medical School (1978); M.P.H., Harvard Medical School (1990).

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

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

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

* Partial salary from Department of Pharmacology and Toxicology

Faculty with Associate Appointments

Bhatnagar, Aruni, Professor of Medicine; Ph.D., Chemistry, University of Kanpur, India (1986).

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

Edmonds, Harvey L., Professor of Anesthesiology; Ph.D., Pharmacology, University of California at Davis (1974).

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

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

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

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

Faculty with Emeritus Appointments

Carr, Laurence A., Professor Emeritus; Ph.D., Michigan State University (1969). [Emeritus appointment September 1, 2001.]

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 of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Florida (1976); M.D., University of Illinois (1968). [Emeritus appointment January 1, 2001.]

Faculty with Adjunct Appointments

Friedman, Marvin A., Adjunct Professor of Pharmacology and Toxicology; Ph.D., Massachusetts Institute of Technology (1967).

Gruber, Scott A., Adjunct Associate Professor of Pharmacology and Toxicology; M.D., SUNY Downstate Medical School (1983); Ph.D., University of Minnesota (1991).

Hayes, A. Wallace, Adjunct Professor of Pharmacology and Toxicology; Ph.D., Auburn University (1967).

Holthouser, Michael G., Adjunct Assistant Professor of Pharmacology and Toxicology; M.D., University of Kentucky (1971).

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

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

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

Pinhas, Allan R., Visiting Assistant Adjunct Professor of Pharmacology and Toxicology; Ph.D., Cornell University (1980).

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

New Faculty Appointments

Barve, Shirish, Ph.D., Associate Professor, effective March 1, 2001.

Bodduluri, Haribabu, Ph.D., Associate Professor, effective March 1, 2001.

Clouthier, David E., Ph.D., Assistant Professor, effective November 1, 2001.

McClain, J. Craig, M.D., Ph.D., Professor, effective October 1, 2001.

Parsian, Abbas, Ph.D., Associate faculty, effective July 1, 2001.

Tollerud, David J., M.D., M.P.H., Clinical Professor, effective August 1, 2001.

Wang, Yang, M.D., Ph.D., Assistant Professor, effective February 1, 2001.

Staff

Beauerle, Brian, Research Technologist I

Burke, Tom, Research Technologist II

Cai, Jian, Technical Director, Mass Spectrometry Lab

Carpenter, Sharon; Executive Secretary

Doll, Mark; Research Associate

Greca, Edie; Business Manager III

McNeely, Sam, Research Technologist II

Rubin-Teitel, Heddy; Program Assistant III

Smith, Leo, Student Assistant

Smith, Ned; Senior Research Technologist

Spurrier, Alexandra; Student Assistant

Suresh, Karthik; Student Assistant

Tucker, Alison, Lab/Research Technician III

Tucker, Lindsay, Lab/Research Technician III

Xiao, Gong H., Research Associate

Visiting Graduate Students / Faculty

Sook un Kim (Seoul National University College of Medicine, Korea)

Allan Pinhas (University of Cincinnati)

Olga van der Hel (University Medical Centre Utrecht, The Netherlands)

Graduate Students

Name	Advisor
Brad Brewer	Peter Rowell
Cristian Campian	Fred Benz
Wendy Chang	Theresa Chen
Hainen Chen	Paul Epstein
Denise Clark	Glenn McGregor
Chris Cunningham	Steve Myers
Laila Elsherif	James Kang
Xin Fu	Mike Williams
April Hartford	Nick Delamere
John Hennion	Rif El-Mallakh
Misty Holbrook	Evelyne Gozal
Prachi Hote	Shirish Barve
Yining Hou	Nick Delamere
Al (Chip) Jacobs	Mike Brier
Felicia Jefferson	David Hein
Hana Khaled	Bill Pierce
Jason Lambert	James Kang
Jian Li	John Eaton
Nina Li	Paul Epstein
Paula Logsdon	Glenn McGregor
Carson McCloud	Joe Song
Tanvi Modi	Shirish Barve
Abubakar Naida	David Gozal
Jason Neale	Bill Pierce
Scot Payne	Avital Schurr
Paul Porter	Chris States
Katie Richardson	Shirish Barve
Clare Shen	Paul Epstein
Xichun Sun	James Kang
Yue (Cindy) Wang	David Gozal
Nick Watson	Glenn McGregor
Yu (Janet) Zang	David Hein
Yuanqi Zhu	David Hein

Postdoctoral Fellows

Feng, Wenke
 Jiang, Guo-hui
 Stefan, Mihaela
 Zhao, Shuang
 Zhong, Li-Chun
 Zhou, Dan

New Graduate Students

Chang, Wendy
Cunningham, Chris
Holbrook, Misty
Hote, Prachi
Jefferson, Felicia
Logsdon, Paula
McCloud, Carson
Naida, Abubakar
Richardson, Katie
Wang, Yue (Cindy)
Watson, Nick
Zang, Yu (Janet)

Graduations

Alfred A. Jacobs, Jr., Ph.D., 2001. Mentor: Michael E. Brier, Ph.D. Dissertation title: Influence of cyclosporin on renal hemodynamics in the isolated perfused kidney.

Jason C. Lambert, M.S., 2001. Mentor: Y. James Kang, Ph.D. Thesis title: Zinc inhibition of caspase-3 activation does not prevent apoptotic cell death.

E. Cristian Campian, M.S., 2001. Mentor: Frederick W. Benz, Ph.D. Thesis title: Acute acrylonitrile toxicity: inhibition of glyceraldehyde- 3-phosphate dehydrogenase activity in vitro.

Laila Elsherif, M.S., 2001. Mentor: Y. James Kang, Ph.D. Thesis title: Metallothionein protection against cadmium cardiotoxicity.

R. Scot Payne, Ph.D., 2001. Mentor: Avital Schurr, Ph.D. Dissertation title: The corticosterone hypothesis of hyperglycemia-enhanced cerebral ischemic damage.

Xin Fu, Ph.D., 2001. Mentor: Walter M. Williams, M.D., Ph.D. Dissertation title: *Para*-Aminophenol-induced hepatotoxicity in hamsters.

Xichun Sun, Ph.D., 2001. Mentor: Y. James Kang, Ph.D. Dissertation title: Metallothionein protection of the heart from ischemia/reperfusion injury: Cellular and molecular mechanisms.

John P. Hennion, M.S., 2001. Mentor: Rif El-Mallakh, M.D. Thesis title: Evaluation of neuroprotection by lithium and valproic acid against ouabain-induced cell damage.

V. Publications (salaried faculty)

Papers

1. Buck RA, Cai J, Eleazer PD, Staat RH, and Hurst HE (2001) Detoxification of endotoxin by endodontic irrigants and calcium hydroxide. *J.Endod.* **27**:325-327.
2. Cai L and Kang YJ (2001) Oxidative stress and diabetic cardiomyopathy. *Cardiovas.Toxicol.* **1**:181-193.
3. Chen H, Carlson EC, Pellet L, Moritz JT, and Epstein PN (2001) Overexpression of metallothionein in pancreatic beta-cells reduces streptozotocin-induced DNA damage and diabetes. *Diabetes* **50**:2040-2046.
4. Doll MA and Hein DW (2001) Comprehensive human NAT2 genotype method using single nucleotide polymorphism-specific polymerase chain reaction primers and fluorogenic probes. *Anal.Biochem.* **288**:106-108.
5. Feng W and Song ZH (2001) Functional roles of the tyrosine within the NP(X)(n)Y motif and the cysteines in the C-terminal juxtamembrane region of the CB2 cannabinoid receptor. *FEBS Lett.* **501**:166-170.
6. Fitzpatrick JL, Ripp SL, Smith NB, Pierce WM, Jr., and Prough RA (2001) Metabolism of DHEA by cytochromes P450 in rat and human liver microsomal fractions. *Arch.Biochem.Biophys.* **389**:278-287.
7. Fretland AJ, Doll MA, Leff MA, and Hein DW (2001) Functional characterization of nucleotide polymorphisms in the coding region of N-acetyltransferase 1. *Pharmacogenetics* **11**:511-520.
8. Fretland AJ, Leff MA, Doll MA, and Hein DW (2001) Functional characterization of human N-acetyltransferase 2 (NAT2) single nucleotide polymorphisms. *Pharmacogenetics* **11**:207-215.
9. Fretland AJ, Devanaboyina US, Nangju NA, Leff MA, Xiao GH, Webb SJ, Doll MA, and Hein DW (2001) DNA adduct levels and absence of tumors in female rapid and slow acetylator congenic hamsters administered the rat mammary carcinogen 2- amino-1-methyl-6-phenylimidazo[4,5-b]pyridine. *J.Biochem.Mol.Toxicol.* **15**:26-33.
10. Fretland AJ, Devanaboyina US, Feng Y, Leff MA, Xiao GH, Webb SJ, and Hein DW (2001) Oral administration of 2-amino-1-methyl-6-phenylimidazo[4,5-b]pyridine (PhIP) yields PhIP-DNA adducts but not tumors in male Syrian hamsters congenic at the N-acetyltransferase 2 (NAT2) locus. *Toxicol.Sci.* **59**:226-230.

11. Garte S, Gaspari L, Alexandrie AK, Ambrosone C, Autrup H, Autrup JL, Baranova H, Bathum L, Benhamou S, Boffetta P, Bouchardy C, Breskvar K, Brockmoller J, Cascorbi I, Clapper ML, Coutelle C, Daly A, Dell'Omo M, Dolzan V, Dresler CM, Fryer A, Haugen A, Hein DW, Hildesheim A, Hirvonen A, Hsieh LL, Ingelman-Sundberg M, Kalina I, Kang D, Kihara M, Kiyohara C, Kremers P, Lazarus P, Le Marchand L, Lechner MC, van Lieshout EM, London S, Manni JJ, Maugard CM, Morita S, Nazar-Stewart V, Noda K, Oda Y, Parl FF, Pastorelli R, Persson I, Peters WH, Rannug A, Rebbeck T, Risch A, Roelandt L, Romkes M, Ryberg D, Salagovic J, Schoket B, Seidegard J, Shields PG, Sim E, Sinnet D, Strange RC, Stucker I, Sugimura H, To-Figueras J, Vineis P, Yu MC, and Taioli E (2001) Metabolic gene polymorphism frequencies in control populations. *Cancer Epidemiol.Biomarkers Prev.* **10**:1239-1248.
12. Gozal D, Daniel JM, and Dohanich GP (2001) Behavioral and anatomical correlates of chronic episodic hypoxia during sleep in the rat. *J.Neurosci.* **21**:2442-2450.
13. Gozal D, Wang M, and Pope DW, Jr. (2001) Objective sleepiness measures in pediatric obstructive sleep apnea. *Pediatrics* **108**:693-697.
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VI. Abstracts (salaried faculty and staff)

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lung matrix metalloproteinase-13/tissue inhibitor of metalloproteinase-1 RNA expression and decreasing activating protein-1 activation. Presented at 43rd Annual Thomas I. Petty Aspen Lung Conference: Mechanisms of Pulmonary Fibrosis, May 31- June 3, 2000, Aspen, CO. Abstracted in: Chest 2001; 120 (1):2S.

31. Guo S-Z, Gozal E, Schurr A, Payne RS, Row BW, Brittain K, Gozal D. Infarct size induced by temporary middle cerebral artery occlusion (MCAO) is more extensive following chronic intermittent hypoxia (CIH) in the rat. Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA., Vol.27, Abstract # 436.3.
32. Sachleben Jr.LR, Gozal E, Zhang SX.L, Guo S-Z, Gozal D. Transcription factors NF- κ B and AP-1 are differentially activated in the rat cortex following sustained (SH) and intermittent hypoxia (IH). Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol.27, Abstract # 845.4.
33. Tseng MT, Schurr A, Payne RS, Gozal E, Gozal D. Excitotoxic preconditioning in vitro induced by hypoxia or glutamate and abolished by blockade of lactate transport. Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol.27, Abstract # 208.5.
34. Zhang SX, Sachleben LR, Gozal D, Gozal E. Hypoxia, hydrogen peroxide (H₂O₂), NMDA, staurosporine, differ in Akt activation and downstream induction of apoptosis. Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol.27, Abstract # 763.15.
35. Singleton H, Mervis RF, Row BW, Backstetter A, Gozal E, Sachleben LR, Brittain KR, Gozal D. Prolonged intermittent hypoxia leads to disruption of spatial memory task acquisition in the absence of obvious structural abnormalities in hippocampal CA1 pyramidal neurons. Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol.27, Abstract # 845.6.
36. Li RC, Gozal E, Brittain KR, Sachleben LR, Gozal D. Time-dependent modulation of inducible nitric oxide synthase (iNOS) in rat cortex following intermittent hypoxia (IH) but not sustained hypoxia (SH). Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol 27, abstract # 845.2.
37. Gozal E, Pequignot JM, Pequignot J, Row BW, Guo SZ, Sachleben LR, Gozal D. Cortical (CX) and hippocampal (Ca1, Ca3) changes in tyrosine hydroxylase (TH) expression and catecholamine turnover following 7 days of episodic hypoxia (EH) or sustained hypoxia (SH) in the rat. Presented at: 31th Annual Meeting of the Society for Neuroscience, November 10-15, 2001, San Diego, CA. Vol 27, abstract # 845.3.
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39. Hein, D.W.: Role of N-acetyltransferase polymorphisms in cancer risk from environmental carcinogens. Proceedings of the International Symposium on Environmental Genome and Pharmacogenetics, p. 14-15, Shanghai, China, May 2001.
40. Xiao, G.H., Doll, M.A., Webb, S.J., Fretland, A.J. and Hein, D.W.: Functional characterization of recombinant N-acetyltransferase 1 (NAT1) and 2 (NAT2) in the rapid and slow acetylator rat. Proceedings of the Second International NAT Workshop, Oxford, UK, October, 2001.
41. Hein, D.W.: Update on N-acetyltransferase nomenclature. Proceedings of the Second International NAT Workshop, Oxford, UK, October, 2001.
42. Hein, D.W., Fretland, A.J., Doll, M.A., Leff, M.A. and Zhu, Y.: Genetic effects on human N-acetylation of aromatic amines: Functional effects of SNPs in N-acetyltransferase-2 (NAT2). Mutation Research 483 (Suppl. 1):S22, 2001.
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44. Xiao, G.H., Jefferson, F.A. and Hein, D.W.: Functional characterization of N-acetyltransferase 1 (NAT1) and 2 (NAT2) in mammary primary cell cultures from rapid and slow acetylator Syrian hamster congenic at NAT2. Proceedings of Research!Louisville 2001, Louisville, Kentucky, October 2001.
45. Zhu, Y., Doll, M.A. and Hein, D.W.: Functional characterization of C¹⁹⁰T polymorphism in human N-acetyltransferase 2 (NAT2) gene. Proceedings of Research!Louisville 2001, Louisville, Kentucky, October 2001.
46. Hein, D.W. and Fretland, A.J.: Rapid acetylator genotype predisposes to DNA damage, aberrant crypt foci, and colorectal adenomas following dietary intake of heterocyclic amines. Proceedings of Research!Louisville 2001, Louisville, Kentucky, October 2001.
47. Hein, D.W. and Doll, M.A.: Molecular genetics and function of NAT1 and NAT2: Role in aromatic amine metabolism and carcinogenesis. Proceedings of the Eighth International Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds, p. 2, 2001.
48. Zhao, S., Doll, M.A., States, J.C., Zang, Y. and Hein, D.W.: Construction of Chinese hamster ovary cell lines expressing single copy of human N-acetyltransferase 2. Proceedings of the Ohio Valley Society of Toxicology, Cincinnati, Ohio, November, 2001.
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53. Kang, Y. J. and Cai, L. (2001). Metallothionein suppression of diabetic cardiomyopathy by inhibition of hyperglycemia-induced oxidative stress. Presented at the 8th Annual Meeting of the Oxygen Society. Free Radical Biol. Med., 27 (Supplement 1): S117.
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60. Zhou, Z., Sun, X., and Kang, Y. J. (2001). Protection by metallothionein from alcoholic liver injury in mice through inhibition of oxidative stress. Toxicol. Sci. (The Toxicologist), 60:41 (Abs. #198).
61. Sun, X. Zhou, Z, and Kang, Y. J. (2001). Inhibition of doxorubicin chronic toxicity in metallothionein-overexpressing transgenic mouse heart. Toxicol. Sci. (The Toxicologist), 60:41 (Abs. #197)

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63. McGregor, W. G., Burke, T., and Basu, A.K. Replication of DNA damaged by a lipid peroxidation product. Second international conference on oxidative stress and aging: technologies for assessment and intervention strategies. Maui, Hawaii 4/2/01-4/5/01.
64. Clark, D.R., Zacharias, W., and McGregor, W.G. Specific cleavage of REV1L mRNA by a catalytic ribozyme. Third Annual Midwest DNA Repair Symposium. Indiana University Medical Center, Indianapolis 6/2/01-6/3/01 (platform presentation).
65. McGregor, W.G. Mutagenesis by lipid peroxidation products. Third Annual Midwest DNA Repair Symposium. Indiana University Medical Center, Indianapolis 6/2/01-6/3/01 (platform presentation).
66. Clark, D.R., Zacharias, W., and McGregor, W.G. Strategies to reduce carcinogen-induced mutagenesis: ribozyme-mediated cleavage of REV1L mRNA. Research! Louisville 10/29/01-11/2/01 (Second place winner, Graduate Student Division)
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69. Kemper, R.A. and Myers, S.R. Hemoglobin adducts as biomarkers of exposure to nitroaromatics, *Toxicologist* 55:1, 394, 2001
70. Myers, S.R. Hemoglobin adducts as biomarkers of maternal and fetal tobacco smoke exposure, *Toxicologist* 55:1, 395, 2001
71. Spinnato, J.A. and Myers, S.R. Metabolism and pharmacokinetics of N-methyl-N-2,4,6-tetranitroaniline (tetryl), *Toxicologist* 55:1, 447, 2001
72. Myers, S.R. Chromatographic Characterization of Bezo(a)pyrene Hemoglobin Adducts, International Society for Exposure Analysis, November 4-8, 2001, Charleston, South Carolina.
73. Myers, S.R. Influence of GSTM1 and NAT2 Genotypes on the Relationship Between Personal Exposure to PAH and Biomarkers of Internal Dose. International Society for Exposure Analysis, November 4– 8, 2001, Charleston, South Carolina.
74. Myers, S.R. Hemoglobin – Carcinogen Adducts in Maternal and Fetal Blood of Smokers, Nonsmokers, and Passive Smoke Exposed Individuals. International Society for Exposure Analysis, November 4-8, 2001, Charleston, South Carolina.

75. Myers, S.R. Quantitative analysis of Benzo(a)pyrene hemoglobin (Hb) adducts in maternal and fetal blood obtained from smokers and nonsmokers. International Society for Exposure Analysis, November 4 – 8, 2001, Charleston, South Carolina.
76. Myers, S.R., Cerna, M., Pastorkova, A., Rossner, P., and Binkova, B. The use of a urine mutagenicity assay in the monitoring of environmental exposure to genotoxins. International Society for Exposure Analysis, November 4–8, 2001, Charleston, South Carolina.
77. Nerland, D.E., Cai, J., and Benz, F.W. Male rat liver carbonic anhydrase III is a scavenger of reactive chemical species. Abstracts of Research!Louisville, F41 (2001).
78. Rao CV, Neale JR, Mishra S, Pierce WM and Lei ZM. Bone changes in LH receptor knockout animals. Presented at the Annual Meeting of the Endocrine Society, Denver, CO June, 2001.
79. Perez-Abadia, G, Gorantla VS, Vossen M, Voor MJ, Francois CG, Ren X, Brouha PCR, Orhun H, Majzoub R, Prabhune KA, Pierce WM, Maldonado C and Barker JH. Assessing bone allograft rejection by measuring mechanical properties of bone. Presented at the Plastic Surgery Research Council National Meeting, Milwaukee, WI, June, 2001.
80. Vossen M , Perez-Abadia G, Gorantla VS, Voor MJ, Francois CG, Ren X, Brouha PCR, Orhun H, Majzoub R, Prabhune KA, Pierce WM, Kon M, Maldonado C and Barker JH. Effects of mixed allogeneic chimerism on the mechanical properties of bone. Presented at the Plastic Surgery Research Council National Meeting, Milwaukee, WI, June, 2001.
81. Neale, J.R. and Pierce, W.M., Jr. Model System for Bone Proteomic Analysis. Journal of Bone and Mineral Research. Presented at the Annual Meeting of the American Society for Bone and Mineral Research, Phoenix, AZ, October 15, 2001.
82. Khundmiri SJ, Klein JB, Pierce WM, Lederer ED. Parathyroid hormone (PTH) regulates sodium phosphate cotransport (NaPi-4) through an A kinase anchoring protein (AKAP) FASEB Journal 15 (4): A144, Part 1 Mar 7 2001.
83. Song ZH, Jiang J., Hemesath A. and Zhong L. Cannabinoid receptors in the anterior chamber of the eye. International Cannabinoid Research Society 2001 Symposium on the Cannabinoids.
84. Zhou D. and Song ZH. CB1 cannabinoid receptor mediates neurite remodeling in mouse neuroblastoma cell N1E-115. Society for Neuroscience 2001 annual meeting.
85. W. Feng and Z. H. Song. The role of the DRY motif and A6.34 in the signal transduction of CB2 cannabinoid receptor. Research!Louisville 2001
86. Porter, PC, Mellon, I and States, JC. Single Nucleotide Polymorphisms In Exons 4, 5 And 6 Of The Essential Nucleotide Excision Repair Gene XPA. Toxicological Sciences 60(1): 105 (2001)

87. Jiang, G, Skorvaga, M, Van Houten, B and States, JC. Incision Of BPDE-DNA-Adducts With Thermal-Resistant Uvrabc Excision Nuclease From B.Caldotenax. *Toxicological Sciences* 60(1): 32 (2001)
88. Porter, PC, Beauerle, BD, Hock, T, Mellon, I and States, JC, "Single Nucleotide Polymorphisms in Exons 4, 5 and 6 of the Essential Nucleotide Excision Repair Gene XPA", 3rd Annual Midwest DNA Repair Symposium, Indianapolis, IN (2001).
89. Jiang, GH, McNeely, SC, Skorvaga, M, Van Houten, B and States, JC, "Incision of BPDE—DNA-Adducts with Thermal-resistant B. caldotenax UvrABC Excision Nuclease", 3rd Annual Midwest DNA Repair Symposium, Indianapolis, IN (2001).
90. Beauerle, BD and States, JC, "A Simple and Rapid Cell Proliferation Assay to Evaluate Genotoxicant-Induced Cytotoxicity", 3rd Annual Midwest DNA Repair Symposium, Indianapolis, IN (2001).
91. Jiang, GH, Mcneely, S, Skorvaga, M, Van Houten, B, and States, JC, "Does DNA adduct conformation play a key role in nucleotide excision repair?" Research!Louisville, Louisville, KY (2001).
92. Sams, SR, Beaurle, BD, Kaplan, DJ, Elferink, CJ, and States, JC, "Localization Of DNA Binding Site Of Cisplatin Sensitivity Factor", Research!Louisville, Louisville, KY (2001).
93. Porter, PC, Beauerle, BD, Hock, T, Mellon, I and States, JC, "Identification And Functional Analysis Of Polymorphic Variants Of The Essential Nucleotide Excision Repair Gene XPA", Research!Louisville, Louisville, KY (2001)
94. States, JC, Reiners, JJ, Jr., Pounds, JG, Kaplan, DJ, Beauerle, BD, McNeely, SC and McCabe, MJ, Jr. "Arsenite Disrupts Mitosis And Induces Apoptosis In SV40-Transformed Human Skin Fibroblasts", Research!Louisville, Louisville, KY (2001)
95. Porter, PC, Hock, T, Beauerle, B, Mellon, I and States, JC. Identification And Functional Study Of Polymorphic Human XPA Genes. Ohio Valley Society of Toxicology (2001)

VII. Invited Scientific Presentations and Seminars (salaried faculty)

Dr. David Gozal

Obstructive Sleep Apnea in Children: a Thousand and One Nights of Vulnerability. Center for Transplantation Immunology Research Seminars, University of Louisville, 3 January 2001, Louisville, KY.

Neurocognitive Deficits in Obstructive Sleep Apnea: From Cell to Child. Research Seminar, Tulane Neuroscience Center, 19 March 2001, New Orleans, LA.

Obstructive Sleep Apnea in Children. American Lung Association of Kentucky Annual Meeting "The 2001 Respiratory Rumble: Controversies in Pulmonary Medicine", 29-30 March 2001, Lexington, KY.

Obstructive Sleep Apnea in Children. Invited Speaker, International Paediatric Respiratory Congress, 1-4 April, 2001, Prague, Czech Republic.

Diagnostic Algorithms Describing Respiratory Dysfunction in Pediatric Neuromuscular Diseases. Invited Speaker, International Paediatric Respiratory Congress, 1-4 April, 2001, Prague, Czech Republic.

Obstructive Sleep Apnea in Children. Invited Speaker, 2001 Odyssey: An Adventurous Journey. Region II for Respiratory Care 28th Annual Meeting, 25-27 April, 2001, Cincinnati, OH.

Non-Invasive Ventilation in Chronic Respiratory Failure in Children. The Diamond Conference, May 11, 2001, Arkansas Children's Hospital, Little Rock, AR.

Pressure Plateau Home Ventilation: Pros and Cons. The Diamond Conference, May 11, 2001, Arkansas Children's Hospital, Little Rock, AR.

Neurocognitive Morbidity of Obstructive Sleep Apnea in Children. Invited Speaker, Post-Graduate Course on Pediatric Sleep Disordered Breathing, ATS International Conference, May 18, 2001, San Francisco, CA.

Plasticity of the Ventilatory Response as Result of Chronic Versus Intermittent Hypoxia During Newborn Period. Invited Speaker, Symposium on "Neuroplasticity and Control of Breathing", ATS International Conference, May 20, 2001, San Francisco, CA.

OSA in Children: Why Treat? Invited Speaker, PostGraduate Course on "The Evolving Field of Pediatric Sleep" American Professional Sleep Societies Annual Conference, June 5-10, 2001, Chicago, IL.

Pediatric Sleep. Invited Speaker, PostGraduate Course on "Year in Review" American Professional Sleep Societies Annual Conference, June 5-10, 2001, Chicago, IL.

Neural and Cognitive Consequences of Intermittent Hypoxia. Invited Speaker, Symposium on “Intermittent Hypoxia: End Organ Injury, Repair, and Plasticity”, American Professional Sleep Societies Annual Conference, June 5-10, 2001, Chicago, IL.

Intermittent Hypoxia in Early Life: Friend or Foe? Invited Speaker, International Developmental Physiology Workshop, University of Leicester, The Fernie Lodge Hotel, Husbands Bosworth, Leicestershire, 23-24 August, 2001, England.

Intermittent Hypoxia and SIDS. Visiting Professor, University of Western Australia, October 9-10, 2001, Perth, Australia.

Congenital Hypoventilation Syndrome. Helen Bearpark Memorial Lecture, 14th Annual Scientific Meeting of the Australasian Sleep Association 12-14 October 2001, Adelaide, Australia.

Neurocognitive Deficits in Obstructive Sleep Apnea in Children. Invited Speaker, 14th Annual Scientific Meeting of the Australasian Sleep Association 12-14 October 2001, Adelaide, Australia.

Baroreceptor Function in Children with Obstructive Sleep Apnea. Invited Speaker, 14th Annual Scientific Meeting of the Australasian Sleep Association 12-14 October 2001, Adelaide, Australia.

Pediatric Respiratory Research: In Quest of New Directions. Visiting Professor, Children's Hospital at Westmead and the University of Sydney, October 15, 2001, Sydney, Australia.

Respiratory Dysfunction in Neuromuscular Diseases in Children. Guest Speaker and Symposium Chair, "Care of Patients with Muscular Dystrophy and Neuromuscular Diseases: New Developments, New Dilemmas", American Academy of Pediatrics National Conference, October 20-24, 2001, San Francisco, CA.

Nighttime Noises: Snoring and Sleep Disordered Breathing: Is T&A Always the Answer? Guest Speaker, "Tough Topics in Pulmonary Medicine", American Academy of Pediatrics National Conference, October 20-24, 2001, San Francisco, CA.

Infant Home Apnea Monitoring. Invited Speaker, Chest 2001, November 4-8, 2001, Philadelphia, PA.

Laboratory Monitoring in the Diagnosis of Obstructive Sleep Apnea in Children: Is it Necessary? Invited Speaker, Chest 2001, November 4-8, 2001, Philadelphia, PA.

Pediatric OSA: From Cell to Child. Benjamin Burrows Lecture Series, Respiratory Health Sciences Center, University of Arizona, November 29, 2001, Tucson, AZ.

Dr. Evelyne Gozal

Neuronal Survival in Hypoxia: a PDGF Story. Kentucky Spinal Cord Injury Research Center Internal Seminar, University of Louisville, January 5, 2001.

Neuronal Susceptibility in Intermittent Hypoxia. Invited Seminar. Service de Physiologie, INSERM CRI 9701, Hopital Robert Debre, Paris, France, January 17, 2001.

Neuronal Signaling in Hypoxia. Department of Pediatrics Research Luncheon, University of Louisville, March 12, 2001.

Dr. David W. Hein

The NAT1 and NAT2 Acetylation Polymorphisms as Modifiers of Breast Cancer Risk from Diet and Smoking. Department of Pathology and Laboratory Medicine, University of Louisville School of Medicine, Louisville, Kentucky, January 2001.

Role of N-Acetyltransferase Polymorphisms in Cancer Risk from Environmental Carcinogens. International Symposium on Environmental Genome and Pharmacogenetics, Shanghai, China, May 2001.

Molecular Genetics of NAT1 and NAT2 Acetyltransferases: A Possible Role in Breast Cancer Susceptibility. Institute of Materia Medica, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing, China, May 2001.

Molecular Genetics of NAT1 and NAT2 Acetyltransferases: Relationship to Breast Cancer. Beijing Institute for Cancer Research, Peking University School of Oncology, Beijing, China, May 2001.

N-Acetyltransferase Polymorphisms: Biomarkers of Cancer Susceptibility. Fred Hutchinson Cancer Center, Seattle, Washington, June 2001.

Strategies to Assess Potential Carcinogenicity of Hair Dyes. Clairol, Inc., Stamford, Connecticut, June and December 2001.

Functional Characterization of Recombinant N-acetyltransferase 1 (NAT1) and 2 (NAT2) in the Rapid and Slow Acetylator Rat. Second International NAT Workshop, Oxford, UK, October 2001.

Molecular Genetics and Function of NAT1 and NAT2: Role in Aromatic Amine Metabolism and Carcinogenesis. Eighth International Conference on Carcinogenic and Mutagenic N-Substituted Aryl Compounds, Washington, DC, November 2001.

Dr. Y. J. Kang

Metallothionein suppression of diabetic cardiomyopathy by inhibition of hyperglycemia-induced oxidative stress. The 8th Annual Meeting of The Oxygen Society, Research Triangle Park, NC, November 16, 2001.

Metallothionein protection from oxidative myocardial injury. University of Arizona Health Sciences Center, Graduate Program in Pharmacology and Toxicology, October 3, 2001.

The Impact of Human Genome Project on Medicine. Forum of Bio-Technology and Life Sciences, Liaoning Province, China, June 30, 2001.

Dr. W. Glenn McGregor

Replicative bypass of exocyclic purine adducts. DNA repair: interplay with other cellular processes. Noordwijkerhout, The Netherlands, 3/1/02.

Dr. Steven R. Myers

Biomarkers in Epidemiological Research. Center for Genetics and Molecular Medicine, University of Louisville, December 11, 2001.

Dr. William M. Pierce, Jr.

Bone-Targeting of Estrogens for Treatment of Osteopenia. University of Louisville School of Medicine Department of Orthopedic Surgery, January 16, 2001.

Biomolecule Applications of Mass Spectrometry. University of Louisville College of Arts and Sciences, Department of Chemistry, April 27, 2001.

Teaching a drug to fetch a bone: Bone-targeting for treatment of metastasis? J. Graham Brown Cancer Center July 26, 2001

Dr. Zhao-Hui Song

New insights into the molecular mechanisms of cannabinoids. Institute for Pharmacology and Toxicology, University of Bonn, Bonn, Germany, July, 2001.

Cannabinoid Receptors and Orphan G protein-coupled Receptors in Drug Discovery. Genomics and Bioinformatics Institute Chinese Academy of Sciences, Beijing, China, November, 2001.

Dr. J. Christopher States

Cisplatin regulation of XPA expression in ovarian cancer cells. NIH DNA Repair Interest Group Videoconference, University of Kentucky, Lexington, KY, November 2001.

VIII. Research Grants and Contracts (salaried faculty)**Research Grant and Contract Proposals Submitted**

	<u>Agency</u>	<u>Budget Requested</u>
Dr. Frederick Benz		
Characterization of vinyl monomer-protein adducts (Co-I; D.E. Nerland, PI)	NIEHS	\$475,000
Dr. Theresa Chen		
N-acetylcysteine therapy in steatohepatitis (Co-I; C.J. McClain, PI) 12/01/01 – 11/30/03	NIEHS	\$100,000
NIEHS Training Grant (Mentor; D.W. Hein, PI) 07/01/02 – 06/30/07	NIEHS	\$1,123,590
Mechanism of <i>p</i> -Aminophenol-induced hepatotoxicity (PI) 04/01/01 – 03/31/05	NIH	\$450,000
Nutritional modulation of glutathione status and longevity (PI) 01/01/02 - 12/31/02	Kentucky Science & Technology Corp.	\$15,000
S-adenosylmethionine (AdoMet) modulates susceptibility to <i>Pneumocystis carinii pneumonia</i> in immunocompromised hosts (Co-I; Oz, PI) 01/01/02 – 12/31/03	Jewish Hospital Foundation	\$50,000
Dr. David Gozal		
Aging, episodic hypoxia, and vagal cardiac projections (Co-I; Z. Cheng, PI) 06/01/02 - 05/31/07	NIH	\$1,225,000
Sleep problems/Patterns in autistic children (Co-I; P.G. Williams, PI) 07/01/02 - 06/30/04	NIH	\$200,000
Sleep and psychophysiological function in children (Co-I; D. Molfese, PI) 07/01/02 - 06/30/04	NIH	\$1,250,000
Cardiac efferents: Circuitry and regeneration (Co-I; Z. Cheng, PI) 07/01/02 - 06/30/04	NIH	\$1,150,000
Role of vagal afferents in hyperpnea (Co-I; J. Yu, PI) 06/01/02 - 05/31/07	NIH	\$1,100,000

	<u>Agency</u>	<u>Budget Requested</u>
Dr. Evelyne Gozal		
PDGF in development of hypoxic ventilatory response (Co-I); D. Gozal (PI) 06/00 – 06/04	NICHD	\$969,529
Dr. David W. Hein		
Pharmacogenetics of drug and carcinogen metabolism (continuation) (PI) 07/01/01 – 06/30/02	NCI	\$390,972
Molecular epidemiology of environmental/occupational diseases (PI) 07/01/02 - 06/30/07	NIH/NIEHS	\$1,123,590
Environmental genomics and molecular epidemiology of lung cancer (PI) 10/01/01 – 09/30/04	Commonwealth of Kentucky Lung Cancer Research Board	\$300,000
Effect of acetylator genotype on genotoxicity of aromatic and heterocyclic amines (PI) 04/01/02 – 03/31/05	Philip Morris External Research Program	\$659,749
Construction of CHO cells to assess genetic predisposition to aromatic amine mutagenicity (PI) 01/01/02 – 12/31/03	Kentucky Science and Engineering Foundation	\$230,097
Pharmacogenetics of drug and carcinogen metabolism (PI) 07/01/02 – 06/30/07	NIH/NCI	\$2,510,251
Education in genetic ethics (Co-I; M. Rothstein, PI) 04/01/02 – 03/31/05	NIH	\$1,509,410
Mechanism of p-aminophenol-induced hepatotoxicity (Co-I; T.S. Chen, PI) 04/01/02 – 03/31/05	NIH	\$638,760
Cancer education grant program (Core Faculty N. Burzynski, PI) 05/01/02 – 04/30/07	NIH	\$557,437
Cardiovascular toxicity of environmental aldehydes (Co-I; A. Bhatnagar, PI) 07/01/02 – 06/30/07	NIH	\$7,007,406

	<u>Agency</u>	<u>Budget Requested</u>
Dr. David W. Hein (cont.)		
Biomarkers of maternal and fetal tobacco smoke exposure (Co-I; S.R. Myers, PI) 10/01/01 – 09/30/04	Commonwealth of Kentucky Lung Cancer Research Program	\$279,048
Genetic analysis of prostate cancer in Nigerian men (Collaborator; B. Folasade Ivun, PI) 01/01/02 – 12/31/02	University of Louisville	\$4,000
Hybrid quadrupole-time of flight mass spectrometer (Major user; W.M. Pierce, PI) 04/01/02 – 03/31/03	NIH/NCRR	\$500,000
UofL NIH Center of Excellence of Biocomputing: A Planning Grant (Investigator; A. Faraq, PI) 10/01/01 – 09/30/04	NIH	\$2,041,280
Metabolism and Detoxification of Base Propenals (Collaborator; S. Srivastava, PI) 04/01/02 – 03/31/06	NIH	\$1,152,000
Epidemiologic study of breast cancer in Nashville (Collaborator; W. Zheng, PI)	Department of Defense	
Microarray analysis facility at UofL (Major User; W. Zacharias, PI) 04/01/02 – 03/31/07	NIH	\$1,404,845
Health effects of occupational exposures in PGDP workers (Co-I; David Tollerud, PI) 02/01/02 – 01/31/04	NIH	\$1,399,443
Dr. Harrell E. Hurst		
Chemoprevention of DMBA-induced mammary cancer (Co-I; S.R. Myers, PI)	Komen Breast Cancer Foundation	\$199,600
Mechanisms underlying individual variations in drug responses (Co-I; M.W. Linder, PI)	NIH	\$250,000
Biomarkers of maternal and fetal tobacco smoke exposure (Co-I); Steven R. Myers (PI) 04/01/01 – 03/31/04	Kentucky Lung Cancer Research Board	\$279,048

	<u>Agency</u>	<u>Budget Requested</u>
Dr. Harrell E. Hurst (cont.)		
Cardiovascular toxicity of environmental aldehydes (Co-I; A. Bhatnagar, PI)	NIH	\$5,015,729
Dr. Y. James Kang		
Metallothionein and adriamycin cardiotoxicity (PI) 07/01/02 – 06/30/07	NIH/NHLBI	\$1,800,000
Prevention by metallothionein of chronic liver injury (Co-I; Z. Zhou, PI) 04/01/02 – 03/31/05	NIH/NIAAA	\$432,000
Metallothionein prevention of diabetic cardiomyopathy (Co-I; Lu Cai, PI) 04/01/02 – 03/31/06	NIH/NHLBI	\$750,000
Dr. Glenn McGregor		
Molecular mechanisms of DNA damage-induced mutagenesis (PI)	NCI	\$700,000
Development of a molecular gene therapy approach for the prevention of UV-induced skin cancer (PI)	Kentucky Science and Engineering Foundation	\$100,000
Molecular strategies to avoid mutagenesis by cigarette smoke-associated carcinogens (PI)	Philip Morris External Research Program	\$344,000
Dr. Steven R. Myers		
Biomarkers of maternal and fetal tobacco smoke exposure (PI) 04/01/02 - 03/31/04	Kentucky Science and Engineering Foundation (KSEF)	\$200,000
Mechanisms underlying individual variations in drug responses (Co-I; M. Linder, PI)	NIH	\$250,000
Biomarkers of maternal and fetal tobacco smoke exposure (PI) 10/01/01 – 09/30/04	Kentucky Lung Cancer Research Board	\$279,048

	<u>Agency</u>	<u>Budget Requested</u>
Dr. Steven R. Myers (cont.)		
Chemoprevention of DMBA induced mammary cancer (PI)	Komen Breast Cancer Research Foundation	\$199,000
Cardiovascular toxicity of environmental aldehydes (Co-I; A. Bhatnagar, PI) 07/01/02 – 06/30/07	NIH	\$7,007,406
Dr. Donald E. Nerland		
Characterization of vinyl monomer-protein adducts (PI)	NIEHS	\$475,000
Dr. William M. Pierce, Jr.		
Hybrid Quadrupole Time-of-Flight Mass Spectrometer (PI) 2002 – 2003	NIH-NCRR SIG	\$500,000
Cardiovascular Toxicity of Environmental Aldehydes (Co-I; A. Bhatnagar, PI) 07/01/02 – 06/30/07	NIH	\$7,007,406
Molecular Adaptation of the Skeletal Muscle Calcium Pump in the Wood Frog (Co-I; W. Dean, PI) 2002-2005	NSF	\$221,696
DNA Sequences impact Estrogen and Antiestrogen Activity (Co-I; C.M. Klinge, PI) 01/01/03 – 12/31/07	NIH	\$1,744,218
Proteomic Analysis of Diabetic Nephropathy (Co-I; J.B. Klein, PI) 2002 - 2004	NIH	\$200,000
A Proteome Map of Neutrophil Membranes (Co-I; K.R. McLeish, PI) 2002 - 2007	NIH	\$1,400,000
Arsenic-Induced Mitotic Arrest Associated Apoptosis (Co-I, J.C. States, PI) 07/01/02 - 06/30/07	NIH	\$1,779,760

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	<u>Agency</u>	<u>Budget Requested</u>
Dr. William M. Pierce, Jr. (cont.)		
Molecular Mechanisms of Bone Targeted Estrogens (PI) 2001 – 2006	NIH	\$1,800,000
Project: Bone Proteomic Analysis (PI) 2001 – 2002	Nat'l Osteoporosis Foundation	\$57,000
Identification and Characterization of Grape Extract Metabolites (Co-I; C.M. Klinge, PI) 2001-2002	California Table Grape Commission	\$25,000
Molecular Mechanisms of DNA Damage-Induced Mutagenesis (Co-I; W.G. McGregor, PI) 2002 – 2006	NIH	\$700,000
Resveratrol Metabolism and Gene Expression (Co-I; C.M. Klinge, PI) 2002-2003	American Institute for Cancer Res.	\$165,000
Endothelium-Derived Hyperpolarizing Factor and Role in Hypertension (Co-I; A. Adeagbo, PI) 2002 - 2005	American Heart Association	\$272,242
Dr. Peter Rowell		
Postnatal brain susceptibility to intermittent hypoxia (Co-I; D. Gozal, PI) 03/01/02 – 02/28/07	NIH	\$1,250,000
Dr. Zhao-Hui (Joe) Song		
Structure and function of CB2 cannabinoid receptor, DA11551 (PI) 09/30/98 – 09/30/03	NIH	\$507,304
Cannabinoid receptors-potential targets for novel antiglaucoma drugs (PI) 07/01/02 – 06/30/07	NIH	\$1,426,560
Dr. J. Christopher States		
Mechansims of Chemoresistance in Ovarian Cancer (PI) 06/01/01 - 05/31/03	Elsa U. Pardee Foundation	\$128,418
Candidate genes for the molecular target(s) of arsenite induced mitotic arrest and associated apoptosis (PI) 01/01/02 - 06/30/02	James Graham Brown Cancer Center	\$4,500

	<u>Agency</u>	<u>Budget Requested</u>
Dr. J. Christopher States (cont.)		
Characterization of a Potential Cisplatin Sensitivity Factor (PI) 06/01/01 - 08/31/01	ULSoM Dean's Office Medical Student Summer Research Program	\$2,800
Functional Analysis of Variant DNA Repair Genes (PI) 04/01/02 - 03/31/06	NCI	\$1,035,200
Arsenic Induced Mitotic Arrest Associated Apoptosis (PI) 12/01/01 - 11/30/06	NIEHS	\$1,645,880
Health Effects of Occupational Exposures in PGDP Workers (Co-I; D. Tollerud, PI) 02/01/02 - 01/31/04	NIOSH	\$1,399,443
Chromium: How much is too much? (PI) 01/01/02 - 12/31/02	UL RIG	\$4,000
Chromium: How much is too much? (PI) 01/01/02 - 12/31/02	UL RIG	\$4,000
Arsenic Induced Mitotic Arrest Associated Apoptosis (PI) 07/01/02 - 06/30/07	NIEHS	\$1,779,760
Mechanism of Low-dose Arsenic Induced Mitotic Disruption (PI) 01/01/02 -12/31/02	KSEF	\$50,000
Cancer Education Grant Program (Core Faculty; N. Burzynski, PI) 05/01/02 - 04/30/07	NIH	\$557,437
Pharmacogenetics of drug and carcinogen metabolism (Co-I; D.W. Hein, PI) 07/01/02 - 06/30/07	NCI	\$2,510,251
Metabolism and Detoxification of Base Propenals (Collaborator; S. Srivastava, PI) 04/01/02 – 03/31/06	NIHI	\$1,152,000
Dr. Leonard C. Waite		
Molecular mechanisms of bone targeted estrogens (Co-I; W.M. Pierce, Jr., PI) 07/01/01 – 06/30/06	NIH	\$1,800,000

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	<u>Agency</u>	<u>Budget Requested</u>
Dr. Walter M. Williams		
Mechanism of <i>p</i> -Aminophenol-induced hepatotoxicity (PI) 04/01/01 – 03/31/05	NIH	\$450,000

Research Grants and Contracts in Force (salaried faculty)

	<u>Agency</u>	<u>Project Award</u>
Dr. Frederick W. Benz		
Acute acrylonitrile intoxication: Antidotal assessment (PI) 09/01/00 – 08/31/01	NIEHS	\$20,179
Dr. Theresa S. Chen		
Mechanism of <i>p</i> -Aminophenol induced hepatotoxicity (PI) 07/01/01 – 06/30/02	UofL Intramural Research Incentive Grants	\$3,668
Acute acrylonitrile intoxication: Antidotal assessment (Co-I; F.W. Benz, PI) 09/01/00 – 08/31/01	NIEHS	\$20,179
Dr. Paul N. Epstein		
β -cell antioxidant transgenes in diabetes and transplantation (PI) 09/01/00 – 08/31/04	NIH/NIDDK	\$712,000
Reducing diabetic cardiomyopathy by increasing glycolysis (PI) 09/30/00 – 09/29/04	NIH/NHLBI	\$959,930
Antioxidant transgenes in diabetic cardiomyopathy (PI) 08/01/99 – 07/30/02	NIH/NHLBI	\$692,139
Acetaldehyde transgenes alter alcoholic cardiomyopathy (PI) 07/01/99 – 06/30/02	AHA	\$164,000
Dr. David Gozal		
Neurocognitive function in snoring children (PI) 10/01/99 - 07/31/2003	NHLBI	\$1,000,000
Sleep episodic hypoxia and memory deficit in aging rats: Protection by platelet-activating factor antagonists (PI) 01/00-12/02	American Heart Association	\$214,500
REM sleep deprivation, hypoxia, and hippocampal function (PI) 09/01/00 -6/30/2004	NHLBI	\$900,000

	<u>Agency</u>	<u>Project Award</u>
Dr. David Gozal (cont.)		
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J.B. Klein, P.I.) 10/01/00 - 06/30/04	NHLBI	\$700,000
Sleep Associated Learning Morbidity in 3-4 Year Old Children (PI) 07/01/01 - 06/30/02	Department of Education	\$921,000
Pulse Arterial Tonometry in Sleeping Children (PI) 08/01/01 - 07/31/03	Itamar Ltd.	\$60,000
CPAP vs. BiPAP in Children with OSA (PI) 10/1/01-9/30/02	ResMed Corporation	\$7,800
Postnatal Brain Susceptibility to Intermittent Hypoxia (PI) 03/01/02 - 02/28/07	NHLBI	\$1,250,000
Reversal of Learning Deficits in 3-4 Year Old Children with Obstructive Sleep Apnea (PI) 07/01/02 - 06/30/03	Department of Education	\$500,000
Dr. Evelyne Gozal		
Signaling pathways in neuronal susceptibility to hypoxia (PI) 10/01/00 – 09/30/04	Project 1, COBRE NIH	\$895,786
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; Jon B. Klein, PI) 10/01/00 – 09/30/04	NHLBI	\$700,000
Postnatal brain susceptibility to intermittent hypoxia (Co-I; D. Gozal, PI) 03/01/02 – 02/28/07	NHLBI	\$1,250,000
Dr. David W. Hein		
Pharmacogenetics of drug and carcinogen metabolism (PI) 09/01/97 – 06/30/02	NCI	\$1,859,936
Metabolic basis of sulfonamide toxicity in AIDS patients (P.I. on subproject) 09/01/97 – 05/31/01	NIH-Subcontract from Wayne State	\$768,169

	<u>Agency</u>	<u>Project Award</u>
Dr. David W. Hein (cont.)		
Pharmacogenetics of drug and carcinogen metabolism (minority supplement) (PI) 12/01/00 – 06/30/02	NCI	\$16,183
Environmental genomics and molecular epidemiology of lung cancer (PI) 10/01/01 – 09/30/03	Commonwealth of Kentucky Lung Cancer Research Board	\$199,966
Dr. Harrell E. Hurst		
Biomarkers for air pollutants (PI) 10/01/01 – 09/30/03	USEPA	\$753,654
Review of records, procedures, and analytical data for measurement of volatile organic compounds using EPA method TO-15A (Co-I; R. Barnett, PI) 07/01/00 – 06/30/02	Kentucky Department of Environmental Sciences	\$200,000
Acute acrylnitrile intoxication: Antidotal assessment (Co-I; F.W. Benz, PI) 09/01/00 – 08/31/01	NIEHS	\$20,179
Dr. Y. James Kang		
Metallothionein and adriamycin cardiotoxicity (PI) 04/01/99 – 03/31/02	NHLBI	\$623,000
Oxidative stress and heart failure by copper deficiency (PI) 04/01/01 – 03/31/05	NHLBI	\$1,312,200
Cardiomyopathy induced by marginal copper deficiency (Co-I; D. Schuschke, PI) 11/15/01 – 11/14/03	USDA-CSREES	\$155,971
Metallothionein and adriamycin cardiomyopathy (PI) 04/01/99 – 03/31/01	Jewish Hospital Foundation	\$50,000
Alpha dependent myocyte apoptosis (PI) 04/01/00 – 03/31/02	Jewish Hospital Foundation	\$50,000

	<u>Agency</u>	<u>Project Award</u>
Dr. Y. James Kang (cont.)		
Metallothionein protection against diabetic cardiomyopathy (Co-I; Lu Cai, PI) 11/01/01 – 10/31/03	Jewish Hospital Foundation	\$50,000
Dr. Glenn McGregor		
Mechanisms of mutagenic processing of DNA damage, CA 73984 (PI) 08/01/97 – 07/31/02	NCI	\$350,000
Mechanisms of BPDE-induced mutagenesis and mutation avoidance (PI) 10/01/01 – 09/30/03	Kentucky Lung Cancer Research Program	\$150,000
DNA replication proteins as potential therapeutic targets (PI) 03/01/01 – 02/28/02	University of Louisville School of Medicine	\$15,000
Dr. Steven R. Myers		
Characterization of polycyclic aromatic hydrocarbons and their metabolites in urine samples (PI) 07/01/01 – 06/30/02	USEPA	\$50,000
In utero and postnatal tobacco smoke exposure and its effect on infant lung function and respiratory illness (Co-I); George Rodgers (PI) 01/01/95 – 12/31/02	Alliant Community Trust	\$204,890
Biomarkers for air pollutants: Development of hemoglobin adduct methodology for assessment of exposure to butadienes and polycyclic aromatic hydrocarbons (Co-I; H.E. Hurst, PI) 10/01/01 – 09/30/03	Kentucky EPSCoR Program	\$753,654
Dr. Donald E. Nerland		
Acute acrylonitrile intoxication: Antidotal assessment (Co-I; F.W. Benz, PI) 09/01/00 – 08/31/01	NIEHS	\$20,179

	<u>Agency</u>	<u>Project Award</u>
Dr. William M. Pierce, Jr.		
Proteomic analysis of hippocampal hypoxic vulnerability (Co-I; J.B. Klein, PI) 2000-2004	NIH	\$1,000,800
Central nervous system injury and repair (Co-I; S. Whittemore, PI) 2000-2004	NIH	\$8,500,000
Evolution of a pheromone signaling system: From molecules to mating (Co-I; L. Houck, Richard C. Feldhoff, PI) 07/15/01 - 07/14/04	NSF-Subcontract to UofL from Oregon State University.	\$700,546
Blood Lead Monitoring (Lab Director) 01/01/02 – 12/31/02	Analytical chemistry service for local and regional medical practitioners	\$32,000
Regulation of Neutrophil Activation (Collaborator; K. McLeish, PI) 1999-2002	VA Merit Review	\$407,000
Toxicity and Detoxification of 4-hydroxyalkenals in Heart (Co-I; A. Bhatnagar, PI) 2000-2004	NIH	\$1,220,000
Estrogens: Bone Blood Flow and Bone Mechanical Properties (Collaborator; J.T. Fleming, PI) 1999 - 2001	NIH	\$50,000
Cardioprotective effects of ethanol (Co-I; A. Bhatnagar, PI) 2002-2003	NIH	\$143,000
Regulatory Kinase Signal Transduction Pathways in Human Neutrophils (Co-I; K.R. McLeish, PI) 2000-2002	American Heart Association - Ohio Valley	\$89,300
Mechanisms of Chemoresistance in Ovarian Cancer (Co-I; J.C. States, PI) 2001-2003	Elsa Pardee Foundation	\$128,418
Gene Expression of Persistent Chlamydia (Co-I; J.T. Summersgill, PI) December 2001 – November 2006	NIH	\$1,200,000

	<u>Agency</u>	<u>Project Award</u>
Dr. William M. Pierce, Jr. (cont.)		
Analysis of PTH and Dopamine Receptor Signalling in Proximal Tubules (Co-I; Eleanor Lederer, PI) August 2001 - July 2005	Veterans Administration	\$464,500
Dr. Peter P. Rowell		
Functional activity of mesolimbic nicotinic receptors (PI) 09/01/99 – 06/30/02	NIH	\$299,508
Effects of self-administered versus noncontingent nicotine (Co-I; A.R. Caggiula, PI) 10/01/00 – 09/30/05	NIH	\$819,469
The neuromolecular and neurochemical basis of nicotine's variable effects on behavior (Consultant; J.A. Rosecrans, PI) 06/01/01 – 05/31/04	Virginia Commonwealth University	\$23,503
Dr. Zhao-Hui (Joe) Song		
Structure and function of CB2 cannabinoid receptor, DA11551 (PI) 09/30/98 – 09/30/03	NIH	\$507,304
Dr. J. Christopher States		
DNA Damage by Bioactivated Xenobiotics (PI) 03/01/97 - 06/30/02	NIEHS	\$862,845
Mechansims of Chemoresistance in Ovarian Cancer (PI) 06/01/01 - 05/31/03	Elsa U. Pardee Foundation	\$128,418
Characterization of a Potential Cisplatin Sensitivity Factor (PI) 06/01/01 - 08/31/01	ULSoM Dean's Office Medical Student Summer Research Program	\$2,800
Pharmacogenetics of drug and carcinogen metabolism 09/01/97 - 06/30/02 (Co-I; David W. Hein, PI)	NCI	\$1,859,936

IX. Teaching

School of Medicine

The Department team-taught the Medical Pharmacology course to second year medical students. Dr. Mike Williams served as course director. In addition, Dr. Laurence Carr served as co-director of the interdisciplinary Clinical Neuroscience course. Individual faculty contributions are identified in the Appendix.

School of Dentistry

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

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

School of Nursing

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

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

Graduate School

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

Principles of Drug Action (Dr. Frederick Benz)
Research Methods (Dr. Chris States and Dr. Joe Song)
Pharmacology Seminar (Dr. Donald Nerland)
Introduction to Environmental Health (Dr. Steve Myers)
Frameworks in Environmental Science and Technology (Dr. Steve Myers)

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

X. Service

Faculty provided service to the Department, the School of Medicine, the University of Louisville, the profession, the nation, and the community in many ways. Individual faculty service activities are identified in the Appendix.

XI. Honors and Awards

Graduate Students

Hainan Chen received a Center for Genetics and Molecular Medicine Fellowship.

Denise Clark received a second place award in graduate student competition at Research!Louisville.

Paul Porter received a first place award in graduate student research competition at the Ohio Valley Society of Toxicology. He was appointed student representative for the chapter.

Xin Fu received a graduate student travel award from the Society of Toxicology to present her research at the annual meeting in San Francisco.

Faculty

Larry Carr retired and was appointed Professor Emeritus.

Theresa Chen completed a successful periodic career review.

Paul Epstein was appointed as University Scholar.

David Gozal was keynote speaker at the 14th annual scientific meeting of the Australasian Sleep Association

David Hein was reappointed Distinguished University Scholar and received the third place research award in the category of "Potential for Major Clinical Applications" at Research!Louisville.

James Kang was promoted to Professor and received the first place award in the category of "Extramural Funding" at Research!Louisville.

William Pierce was selected as the School of Medicine's nominee for the University of Louisville Outstanding Service Award and was a finalist for a research award in the category of "Interdisciplinary collaborative research" at Research!Louisville.

Janice Sullivan was promoted to Associate Professor of Pediatrics.

XII. Standing Committees

Graduate Program Committee

Dr. William Pierce (Chair)
Dr. Peter Rowell (2003)
Dr. Chris States (2002)
Dr. Len Waite (2001)
Scot Payne/April Hartford (student
representatives)

PBSI/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Mike Williams (2003)
Dr. Don Nerland (2002)
Dr. Harrell Hurst (2001)

Teaching Evaluation Committee

Dr. Larry Carr/Dr. Mike Williams (Chair)
Dr. Len Waite (2002)
Dr. Fred Benz (2001)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Evelyne Gozal (2003)
Dr. Fred Benz (2002)
Dr. Steve Myers (2001)

Core Laboratories/Research Development Committee

Dr. Chris States (Chair)
Dr. Steve Myers (2003)
Dr. Glenn McGregor (2002)
Dr. Theresa Chen (2001)

Ad hoc Technology Committee

Dr. Harrell Hurst (Chair)
Dr. Fred Benz