Department of Pharmacology and Toxicology

UofL

1999 Annual Report
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ADDENDUM

RESOLUTION IN HONOR OF PETER K. KNOEFEL, M.D.
RESOLUTION IN HONOR OF CARLO H. TAMBURRO, M.D.
I. Executive Summary

The Department of Pharmacology and Toxicology experienced substantial growth during the past year. However, we were saddened by the deaths of Peter K. Knoefel, M.D., Professor and Chair Emeritus of the Department of Pharmacology and Toxicology and Carlo H. Tamburro, M.D., M.P.H., Professor of Medicine and Pharmacology/Toxicology and Chief of the Division of Occupational Toxicology. Dr. Peter Knoefel served as the first chairperson of the newly created Department of Pharmacology from 1941-1966, and served as chairman emeritus since 1966. Dr. Carlo Tamburro joined the University of Louisville in 1974 and the Department in 1990 serving as Professor and Chief, Division of Occupational Toxicology since 1990 and Co-Director, Center for Environmental Health Sciences since 1993. Resolutions were adopted by the Department, School of Medicine, and Faculty Senate in honor and appreciation for their service to the University of Louisville, and copies are attached in the appendix.

Faculty recruitment dominated much of the year. A search committee consisting of Dr. David Hein (Chair), Dr. Fred Benz, Dr. Theresa Chen, Dr. Fred Hendler, Dr. James Kang, Dr. Steven Myers, and Dr. Peter Rowell screened applications for three tenure track positions. Following a nationwide search and onsite interviews by several top candidates in the Spring, tenure-track associate professor positions were offered to Jun-Yan Hong, Ph.D., Research Assistant Professor, Laboratory for Cancer Research, Rutgers University, and J. Christopher States, Ph.D., Associate Professor, Institute of Chemical Toxicology, Wayne State University. Dr. States also held appointments as Associate Professor in the Molecular and Cellular Toxicology Ph.D. Program, the Cancer Biology Ph.D. Program, and the Center for Molecular Medicine and Genetics, and was Adjunct Associate Professor in the Department of Pharmaceutical Sciences. Although Dr. Hong was excited about the opportunities available in our Department, professional spouse considerations led him to accept an Associate Professor position (with tenure) at the University of Medicine and Dentistry of New Jersey. However, we are very pleased that Dr. States accepted and transferred a funded research program investigating the molecular biology and molecular genetics of DNA damage and repair in humans. Zhao-Hui (Joe) Song, Ph.D., who was Assistant Professor and Graduate Ph.D. Program Coordinator in the Department of Medical Pharmacology and Toxicology at Texas A&M University School of Medicine was offered and accepted a position as tenure track Assistant Professor. Dr. Song transferred a funded research program focusing on the cloning and molecular/functional characterization of G-protein coupled receptors, and structure-function relationships of cannabinoid receptors.

Following a new faculty search and interviews of the top candidates in the Fall, W. Glenn McGregor, M.D., Research Assistant Professor at Michigan State University College of Medicine was offered and accepted a position as tenure-track Associate Professor effective February, 2000. Dr. McGregor's recruitment was in collaboration with the James Graham Brown Cancer Center and included a joint appointment in the James Graham Brown Cancer Center and the Division of Hematology/Oncology of the Department of Medicine. Dr. McGregor transferred a funded research program investigating the molecular biology of DNA damage, repair and mutagenesis. Each of the three new faculty are housed in new space on the second floor of the Baxter Biomedical Research Building. Placement of their labs in this state-of-the-art interdisciplinary research building will
facilitate interdisciplinary interactions with the James Graham Brown Cancer Center, the Center for Genetics and Molecular Medicine, and the Kosair Children's Research Institute.

David Gozal, M.D. and Evelyne Gozal, Ph.D. were recruited to joint faculty appointments as Professor and Assistant Professor (Research), respectively, in collaboration with the Department of Pediatrics. Dr. David Gozal was Constance S. Kaufman Chair of Pediatric Pulmonary Research, Vice-Chairman for Research, and Professor in the Department of Pediatrics at Tulane University School of Medicine. He also was Director of the Tulane University Comprehensive Sleep Medicine Center. He received multiple appointments at the University of Louisville as well, including Children's Hospital Foundation Chair for Pediatric Research, Vice-Chair for Research, Director of Kosair Children's Hospital Research Institute, and Distinguished University Scholar. Dr. David Gozal transferred funded research programs investigating several interrelated areas, including signal transduction mechanisms underlying molecular and physiological responses to hypoxia and obstructive sleep apnea in children. Dr. Evelyne Gozal was a postdoctoral fellow in the Department of Medicine, Section of Pulmonary Disease, Critical Care, and Environmental Medicine at Tulane University School of Medicine. Her research includes investigation of signal transduction pathways and molecular adaptation mechanisms involved in neuronal cell survival and cell death during hypoxia. Dr. David and Evelyne Gozal's laboratories are housed in the Kosair Children's Hospital Research Institute and the third floor of the Baxter Biomedical Research Building.

Three additional new faculty were appointed to associate and adjunct faculty positions. Aruni Bhatnagar, Ph.D., whose primary appointment is Professor in the Division of Cardiology of the Department of Medicine, was appointed to our associate faculty. Dr. Bhatnagar's funded research program includes oxidative DNA damage and its role in cardiovascular disease and the role of lipid peroxidation in atherosclerosis. Stuart Horowitz, Ph.D. was appointed adjunct assistant professor. Dr. Horowitz serves as Director, Research and Technology, Heart and Lung Institute, Jewish Hospital. Dr. Horowitz has research experience and interests into investigations of oxidant-induced cell death and oxidative tissue injury, particularly relating to pulmonary and cardiovascular disease. Peter Wedlund, Ph.D. was appointed adjunct associate professor. Dr. Wedlund is Associate Professor in the College of Pharmacy and Adjunct Associate Professor in the Graduate Center for Toxicology at the University of Kentucky. Dr. Wedlund has a well-established research program in pharmacogenetics, with an emphasis towards applications of genetic testing as therapeutic tools in clinical practice.

We are very pleased with the addition of these eight outstanding new faculty and their research programs. They will no doubt contribute substantially to the expansion of research and graduate education activities of the Department, School of Medicine, and the University in the years ahead.

Dr. Leonard Waite retired as Director of the Graduate Program in Pharmacology and Toxicology effective at the end of the year. Dr. Waite led the program with distinction from 1976-1999, a period of over 23 years. Virtually all graduates of our program occurred during his tenure, for which the Department is deeply grateful. A reception to honor Dr. Waite for his service was held at the annual holiday party in December. Dr. William Pierce, professor and a graduate of our program (under the mentorship of Dr. Waite), was appointed graduate director effective in January 2000.
The very first graduate of our program, Dr. James Fisher, was honored as the School of Medicine's 1999 Alumni Fellow. Dr. Fisher met with Department faculty and students and presented the first Department K. C. Huang Memorial Lecture entitled "Signal transduction pathways in the regulation of erythropoietin production." Dr. Fisher received his Ph.D. in pharmacology from the University of Louisville in 1958 and served as Professor and Chairman of the Department of Pharmacology at Tulane University School of Medicine from 1968 to 1996. In 1987 the Louisiana Board of Regents honored Dr. Fisher with a Regents endowed professorship in pharmacology, and in 1992, Tulane University established a distinguished annual lectureship in his name. The Department is extremely proud of its first graduate who serves as an inspiration to our current faculty and students.

The Department hosted the annual fall meeting of the Ohio Valley Society of Toxicology in November. Approximately 120 scientists from across the Ohio Valley region participated. The meeting included a social day at Churchill Downs and a scientific day at the Baxter Biomedical Research Building. The featured symposium entitled "Genetic susceptibility to environmental toxins" was chaired by Drs. David Hein and Russell Prough. The featured speakers and the titles of their presentations were "Pharmacogenetics and pharmacogenomics: ethnic and genetic differences in toxicity and cancer" by Dr. Daniel W. Nebert, Center for Genetics and Department of Environmental Health, University of Cincinnati; "Genetic susceptibility to colon and pancreatic cancer and the development of high throughput genotyping methods" by Dr. Fred F. Kadlubar, Division of Molecular Epidemiology, National Center for Toxicological Research; "Dioxins, clocks, and oxygen: Prototype signals of an environmental sensor superfamily" by Dr. Chris Bradfield, McArdle Laboratory for Cancer Research, University of Wisconsin-Madison; and "Functional outcome of the interaction between the Ah receptor and the retinoblastoma protein" by Dr. Alvaro Puga, Center for Genetics and Department of Environmental Health, University of Cincinnati. Over 40 research posters were also presented at the meeting.

1999 will forever be associated with "Y2K" as a tremendous amount of effort by faculty and staff (particularly Edie Greca, our Y2K program manager) was required in response to University of Louisville directives to be fully prepared for the year 2000 turnover. Nevertheless, research productivity increased significantly during the year, and the Department contributed significantly towards the University of Louisville's transition to a premier metropolitan research University. The Department of Pharmacology and Toxicology is poised to make even greater contributions in the years ahead.
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.

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

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

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.
David Gozal, M.D. (Hebrew University of Jerusalem)  
Professor

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 and epidemiology. Genetic predisposition to cancer and drug toxicity.

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)
Associate 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.

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

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.

Thom J. Zimmerman, M.D., Ph.D. (University of Illinois, M.D.; University of Florida, Ph.D.)
Professor
Pharmacology of drugs used to treat glaucoma; carbonic anhydrase inhibitors, cholinergic and adrenergic agents.

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).

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; 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).

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).

Gozal, David, Professor of Pediatrics, and Pharmacology and Toxicology; M.D., Hebrew University of Jerusalem, Hadassah Medical School (1979).

Gozal, Evelyne, Assistant Professor (Research) of Pediatrics, and Pharmacology and Toxicology (Research); Ph.D., Toxicology, University of Southern California (1997).

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

Miller, Frederick N., Professor of Physiology and Biophysics, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Cincinnati (1971).
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., Assistant Professor of Pediatrics, and Pharmacology and Toxicology; M.D., University of Minnesota (1988).

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

Zimmerman, Thom J., Professor and Chairman of Ophthalmology and Visual Sciences, and Pharmacology and Toxicology; Ph.D., Pharmacology, University of Florida (1976); M.D., University of Illinois (1968).

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).

Lang, Calvin A., Professor of Biochemistry and Molecular Biology; Sc.D., Biochemistry and Nutrition, Johns Hopkins University (1954).

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

Ross, Mitchell P., Associate Professor of Pediatrics; M.D., Oregon Health Sciences University (1985).

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

Faculty with Emeritus Appointments

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).

Faculty with Adjunct Appointments

Epstein, Paul N., Adjunct Associate Professor of Pharmacology and Toxicology; Ph.D., Baylor College of Medicine (1981).

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).

Lewis, Richard, Adjunct Assistant Professor of Pharmacology and Toxicology; M.D., Case Western Reserve University (1980).

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).

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

Woodcock, Thomas M., Adjunct Professor of Pharmacology and Toxicology; M.D., Columbia University (1970).

New Faculty Appointments

Bhatnagar, Aruni, Ph.D., Professor (associate appointment), effective October 1

Gozal, David, M.D., Professor (joint appointment), effective October 1
Gozal, Evelyne, Ph.D., Assistant Professor (Research; joint appointment), effective November 1

Horowitz, Stuart, Ph.D. Adjunct Assistant Professor, effective October 1

Song, Zhao-Hui (Joe), Ph.D., Assistant Professor, effective August 16

States, J. Christopher, Ph.D., Associate Professor, effective September 1

Staff

Carpenter, Sharon; Executive Secretary

Clark, Denny, Lab Tech III; Therapeutics and Toxicology Laboratory

Corbett, Donna; Lab Tech III

Doll, Mark; Research Associate

Emery, Nicole; Lab Tech III

Greca, Edie; Business Manager III

Lewis, Stephanie; Lab Research Technician III

Lippmann, Melanie; Lab Research Technician III

Rich, Alexis; Student Assistant

Rutledge, Rachel; Student Assistant

Rubin-Teitel, Heddy; Program Assistant III

Smith, Ned; Senior Research Technologist

Srinivasan, Chandrika, Ph.D., Student Assistant

Volk, Kelly; Lab Research Technician III
Graduate Students

**Doctoral Program**

Brewer, Bradley G.  
Cai, Jian  
Campian, Cristian  
Elsherif, Laila  
Fretland, Adrian  
Fu, Xin  
Hartford, April  
Hennion, John  
Hou, Yining  
Jacobs, Al (Chip)

**Masters Program**

Lambert, Jason  
Lau, Joann  
Leff, Matthew  
Li, Junyu  
Nangju, Norma  
Neale, Jason  
Payne, Scot  
Porter, Paul  
Spinnato, Joe  
Sun, Xichun

**Postdoctoral Fellows**

Cai, Jian  
Devanaboyina, Udaya-sankar  
Leff, Matthew  
Meng, Xianweng  
Wang, Guang-wu  
Wang, Ju-Feng  
Wu, Huiyun  
Webb, Stephanie  
Webster, Rose  
Xiao, Gong H.  
Zhou, Zhan-Xiang  
Zhao, Shuang  
Zhong, Miao

**Division of Occupational Toxicology**

(transfered to Department of Medicine, effective July 1, 1999)

Canchis, Willie, M.D.; Research Fellow

Cho, Lori; Student Assistant

Crawford, Robert; Student Assistant

Fortwengler, Philip; Manager, Medical Surveillance

Hiser, Melissa; Clerical Specialist III

Matthews, Sherri; Executive Secretary

Miller, Barbara L., B.S.N., M.S.; Senior Clinical Research Coordinator
Morgenson, Melissa; Secretary

O’Connell, Kathleen, Ph.D.; Research Facilitator

Redferin, Lauren; Student Assistant

Reynolds, Eva; Receptionist

Reynolds, Lark; Program Assistant III

Sherrill, Mike; Student Assistant

Tamburro, Carlo H., M.D, M.P.H.; Division Chief

Wedlund, Peter J., Ph.D., Adjunct Associate Professor, effective October 1

New Graduate Student Appointments

Campian, Christian
Elsherif, Laila
Hou, Yining
Lau, Joann
Porter, Paul

Graduations


V. Publications (salaried faculty and staff)

Papers


**Additional Publications of Faculty with Joint Appointments**


VI. Abstracts (salaried faculty and staff)


49. **Song ZH** and Slowey CA. Involvement of cannabinoid receptors in the intraocular pressure-lowering effects of WIN55212-2. *Research!Louisville 1999*.

50. Zhong M and **Song ZH**. CB1 cannabinoid receptor-mediated cell migration. *Ohio Valley Society of Toxicology Meeting*, November 11-12, 1999.


VII. Invited Scientific Presentations and Seminars (salaried faculty)

Dr. David Gozal


*So What If My Child Snores?* Grand Rounds, Kosair Children’s Hospital, Department of Pediatrics, University of Louisville, Louisville, KY, December 17, 1999.

Dr. David W. Hein

*Role of the Acetylation Polymorphism in Genetic Susceptibility to Breast Cancer.* Department of Ophthalmology and Visual Sciences, University of Louisville School of Medicine, Louisville, Kentucky, January 1999.

*Molecular Epidemiology of Breast Cancer: Role of N-acetyltransferase Polymorphisms, Cigarette Smoking, and Consumption of Well-Done Meats.* Department of Pharmacology and Toxicology, Indiana University School of Medicine, Indianapolis, Indiana, February 1999.

*Gene/Environmental Interactions in Breast Cancer Risk.* Center for Environmental Health Sciences, University of Louisville, Louisville, Kentucky, April 1999.


*Acetyltransferases-Genetics and Role in Toxicology.* Symposium on Recent Advances in Phase II Enzymes and Their Role in Toxicology, XXXVII European Congress of Toxicology, Oslo, Norway, June 1999.

*Acetylation Polymorphisms as Genetic Risk Factors for Cancer.* Department of Molecular, Developmental, and Craniofacial Biology, University of Louisville School of Dentistry, Louisville, Kentucky, September 1999.

*Molecular Toxicology: N-acetyltransferase Polymorphisms as Susceptibility Biomarkers of Cancer Risk from Aromatic and Heterocyclic Amine Carcinogens.* Environmental Health Science Center, University of Wisconsin School of Medicine, Madison, Wisconsin, September 1999.
Dr. Y. J. Kang


Manipulation by metallothionein of adriamycin cardiotoxicity and anticancer therapeutic efficacy. Department of Pathology, University of Louisville, Louisville, KY, March 25, 1999.

Cardiac protection by metallothionein against oxidative injury. Department of Physiology, Texas Tech University Health Sciences Center, Lubbock, TX, March 5, 1999.

Dr. Steven R. Myers

Metabolic Activation of Polycyclic Aromatic Hydrocarbons via Methyl Substitution Reactions. 17th International Meeting on Polycyclic Aromatic Compounds (ISPAC), Bordeaux, France, October 25-29, 1999.


Quantitation analysis of benzo(a)pyrene hemoglobin adducts in maternal and fetal blood obtained from smokers. 17th International Meeting on Polycyclic Aromatic Compounds (ISPAC), Bordeaux, France, October 25-29, 1999.

Gas Chromatographic and Mass Spectrometric Determination of Hemoglobin Adducts of 1,3-Dinitrobenzene and 1,3,5-Trinitrobenzene in Shrew (cryptotis parva). International Meeting on Polycyclic Aromatic Compounds (ISPAC), Bordeaux, France, October 25-29, 1999.

Chemoprevention of DMBA Induced Mammary Carcinogenesis: Relationship Between Induction of Phase II Enzymes, Effects on DMBA Induced Hemoglobin Adducts and Decreases in Mammary Tumor Multiplicity. International Meeting on Polycyclic Aromatic Compounds (ISPAC), Bordeaux, France, October 25-29, 1999.

Sources of Human Exposure to Airborne PAH. International Meeting on Polycyclic Aromatic Compounds (ISPAC), Bordeaux, France, October 25-29, 1999.
Dr. William M. Pierce, Jr.


Dr. Peter P. Rowell

*Nicotinic Receptor Function: Consequences of Agonist Concentration and Treatment Duration.* University of Pittsburgh, May 17, 1999.

Dr. Zhao-Hui Song

*Cannabinoid Receptors as Potential Targets for Glaucoma Therapy.* First Teaching Hospital, Beijing Medical University, December 22, 1999
### Research Grants and Contracts (salaried faculty)

#### Research Grant and Contract Proposals Submitted

<table>
<thead>
<tr>
<th>Dr. David Gozal</th>
<th>Agency</th>
<th>Budget Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Episodic hypoxia, REM sleep deprivation, and hippocampal function (PI) 06/00 – 06/04</td>
<td>NHLBI</td>
<td>$900,000</td>
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<tr>
<td>PDGF in development of hypoxic ventilatory response (PI) 06/00 – 06/04</td>
<td>NICHD</td>
<td>$969,529</td>
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<th>Dr. Evelyne Gozal</th>
<th>Agency</th>
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<tr>
<td>PDGF in development of hypoxic ventilatory response (Co-I); D. Gozal (PI) 06/00 – 06/04</td>
<td>NICHD</td>
<td>$969,529</td>
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<th>Dr. David W. Hein</th>
<th>Agency</th>
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<tr>
<td>Pharmacogenetics of drug and carcinogen metabolism (continuation) (PI) 07/01/99 – 06/30/00</td>
<td>NCI</td>
<td>$371,339</td>
</tr>
<tr>
<td>Chemically-induced mutagenesis in human liver cells (Collaborator); Kent Mitchell (PI) 04/01/00 – 03/31/05</td>
<td>NIH</td>
<td>$1,392,889</td>
</tr>
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<td>Biomarkers of maternal and fetal tobacco exposure (Co-I); Steve Myers (PI) 04/01/00 – 03/31/03</td>
<td>NIH</td>
<td>$1,075,600</td>
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<td>Genetic susceptibility to vinyl chloride-induced liver cancer (Co-I); Roland Valdes (PI) 07/01/00 – 06/30/04</td>
<td>NIH</td>
<td>$1,607,680</td>
</tr>
<tr>
<td>Human obese gene and prostate cancer (Co-I); Sally Weinrich (PI) 09/01/99 – 06/30/00</td>
<td>UofL Human Genetics Enhancement Grant</td>
<td>$25,000</td>
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<tr>
<td><strong>Dr. Harrell E. Hurst</strong></td>
<td><strong>Agency</strong></td>
<td><strong>Budget Requested</strong></td>
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<tr>
<td>N-(carboxymethyl)valine-Hb: Marker for AGE in Diabetes (PI) 09/01/99 - 08/31/01</td>
<td>NIH</td>
<td>$197,731</td>
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<td>Chemoprevention using Oltipraz and N-acetylcysteine (Co-I); S.R. Myers (PI) 10/01/99 - 06/30/01</td>
<td>NCI</td>
<td>$212,508</td>
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<td>Clinical Phase I Multiple Dose Safety and Pharmacodynamic Study of the combination of N-acetylcysteine and Oltipraz (Co-I); S.R. Myers (PI) 10/01/99 - 06/30/01</td>
<td>NCI</td>
<td>$212,508</td>
</tr>
<tr>
<td>Chemoprevention of DMBA Induced Carcinogenesis (Co-I); S.R. Myers (PI) 04/01/00 - 03/31/03</td>
<td>NIH</td>
<td>$648,000</td>
</tr>
<tr>
<td>Biomarkers of Maternal and Fetal Tobacco Smoke Exposure (Co-I); S.R. Myers (PI) 04/01/00 - 03/31/03</td>
<td>NIH</td>
<td>$750,000</td>
</tr>
<tr>
<td>West Louisville Partnership for Environmental Justice (Co-I); S.R. Myers (PI) 04/01/00 - 03/031/02</td>
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<td>$397,149</td>
</tr>
<tr>
<td>Endothelial Metabolism of Atherogenic Aldehydes (Co-I); S. Srivastava (PI) 06/01/00 - 05/31/05</td>
<td>NIH</td>
<td>$875,000</td>
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</tbody>
</table>

**Dr. Y. James Kang**

Oxidative Stress and Heart Failure by Copper Deficiency (PI)  | NHLBI | $1,321,000 |

**Dr. Steven R. Myers**

Chemoprevention using Oltipraz and N-acetylcysteine (PI) 10/01/99 - 06/30/01 | NCI | $212,508 |

Clinical Phase I Multiple Dose Safety and Pharmacodynamic Study of the combination of N-acetylcysteine and Oltipraz (PI) 10/01/99 - 06/30/01 | NCI | $212,508 |
<table>
<thead>
<tr>
<th>Dr. Steven R. Myers (cont.)</th>
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<td>Chemoprevention of DMBA Induced Carcinogenesis (PI) 04/01/00 - 03/31/03</td>
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<tr>
<th>Dr. Donald E. Nerland</th>
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<tbody>
<tr>
<td>Vinyl Monomers: Detoxified by Glutathione S-Transferases (PI) 02/01/00 – 01/31/04</td>
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<thead>
<tr>
<th>Dr. William M. Pierce, Jr.</th>
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<tr>
<td>Bone Targeted Estrogens: Specificity and Mechanism (PI) 07/01/00 – 06/30/03</td>
<td>NIH</td>
<td>$963,332</td>
</tr>
<tr>
<td>Metalloproteinase – Inhibitor Interactions (Co-I); Robert D. Gray (PI) 1999 - 2002</td>
<td>NIH</td>
<td>$343,135</td>
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<tr>
<td>Proteomic analysis of MDCK cell protein expression: Identification of novel magnesium regulatory proteins (Collaborator); John Arthur (PI) 2000-2002</td>
<td>American Heart Association</td>
<td>$90,000</td>
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<tr>
<td>CYP Isoforms and Cardiovascular Function (Co-I); Ayotunde Adeagbo (PI) 02/01/99 – 01/31/01</td>
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<tr>
<td>Renal Sodium Phosphate Transporter (Co-I); Eleanor Lederer (PI) 2000 - 2003</td>
<td>Veterans Administration</td>
<td>$224,000</td>
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<tr>
<td>Endothelin, G-Proteins &amp; Renovascular Resistance in Aging (Consultant); Jeff C. Falcone (PI) 04/01/00 - 03/31/03</td>
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<tr>
<td>Platelet Intracellular Ca2+ in Renal Disease (Collaborator); William Dean (PI) 1999 – 2003</td>
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<tr>
<td>Computer Assisted Tomography Scanner (Co-I); William Hnat (PI) 2000-2002</td>
<td>NSF</td>
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</tr>
<tr>
<td>Dr. William M. Pierce, Jr. (cont.)</td>
<td>Agency</td>
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<tr>
<td>Aging Induced Renal Dysfunction: G Protein Activity (Co-I); John C. Passmore (PI) 02/01/99 – 01/31/01</td>
<td>NIH</td>
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<tr>
<td>Neutrophil Respiratory Burst in Azotemia (Collaborator); Richard Ward (PI) 1999 - 2002</td>
<td>NIH</td>
<td>$ ~200,000</td>
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**Dr. Peter P. Rowell**

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<thead>
<tr>
<th>Project Description</th>
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<tbody>
<tr>
<td>Cholinergic influences on corticothalamic transmission (Co-I); A.R. Caggiula (PI) 10/1/00 - 9/30/05</td>
<td>NIH</td>
<td>$875,000</td>
</tr>
<tr>
<td>Cholinergic influences on corticothalamic transmission (Co-I); M.E. Bickford (PI) 7/1/00 - 6/30/05</td>
<td>NIH</td>
<td>$1,227,000</td>
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<tr>
<td>Effect of nicotine dependence on work performance in chronic obstructive pulmonary disease (Co-I); J.F. Walker (PI) 7/1/00 - 6/30/02</td>
<td>American Lung Association</td>
<td>$46,004</td>
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</table>

**Dr. Zhao-Hui (Joe) Song**

<table>
<thead>
<tr>
<th>Project Description</th>
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<th>Budget Requested</th>
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<tbody>
<tr>
<td>Structure and Function of CB2 Cannabinoid Receptor, DA11551 (PI) 09/30/98 – 09/30/03</td>
<td>NIH</td>
<td>$507,304</td>
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**Dr. Leonard C. Waite**

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<tr>
<td>Bone Targeted Estrogens: Specificity and Mechanism (Co-I); William M. Pierce, Jr. (PI) 07/01/00 – 06/30/03</td>
<td>NIH</td>
<td>$963,332</td>
</tr>
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</table>
### Research Grants and Contracts in Force (salaried faculty)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Project Award</th>
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</thead>
<tbody>
<tr>
<td>Dr. Frederick W. Benz</td>
<td></td>
</tr>
<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (PI) 09/01/98 – 08/31/99</td>
<td>NIEHS $108,088</td>
</tr>
<tr>
<td>Dr. Laurence A. Carr</td>
<td></td>
</tr>
<tr>
<td>An Immunological Role for Brain Dopamine Systems (PI) 09/01/98-03/01/00</td>
<td>SOM Research Committee $7,920</td>
</tr>
<tr>
<td>Dr. Theresa S. Chen</td>
<td></td>
</tr>
<tr>
<td>Acute Acrylonitrile Intoxication: Antidotal Assessment (Co-I); F.W. Benz (PI) 09/01/98 – 08/31/99</td>
<td>NIEHS $105,432</td>
</tr>
<tr>
<td>Role of Genetic Polymorphism in Liver Toxicity (PI) 09/01/98 – 08/31/99</td>
<td>IDEA Pilot Proposal $8,077</td>
</tr>
<tr>
<td>Dr. David Gozal</td>
<td></td>
</tr>
<tr>
<td>Central role of platelet-activating factor in the hypoxic ventilatory response (PI) 07/97 – 06/00</td>
<td>American Lung Association Career Development Award $105,000</td>
</tr>
<tr>
<td>Neurocognitive function in snoring children (PI) 10/99 – 9/03</td>
<td>NHLBI $1,000,000</td>
</tr>
<tr>
<td>Sleep episodic hypoxia and memory deficit in aging rats: Protection by platelet-activating factor antagonists (PI) 01/00 – 12/02</td>
<td>American Heart Association $214,500</td>
</tr>
<tr>
<td>Dr. David W. Hein</td>
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<tr>
<td>Pharmacogenetics of Drug and Carcinogen Metabolism (PI) 09/01/97 – 06/30/02</td>
<td>NCI $1,859,936</td>
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<tr>
<td>Dr. David W. Hein (cont.)</td>
<td>Agency</td>
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<tr>
<td>Metabolic Basis of Sulfonamide Toxicity in AIDS patients (P.I. on subproject) 09/01/97 – 05/31/00</td>
<td>NIH-Subcontract from Wayne State</td>
</tr>
<tr>
<td>Role of genetic polymorphism in liver toxicity (Co-I); Theresa S. Chen (PI) 09/01/98 – 08/31/99</td>
<td>IDEA Pilot Proposal</td>
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<thead>
<tr>
<th>Dr. Harrell E. Hurst</th>
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<tbody>
<tr>
<td>The Center for the Study of Environmental Hazards to Reproductive Health (Project Investigator/Core Lab Director); F.J. Hendler (PI) 01/01/97 - 12/31/99</td>
<td>Veterans Administration</td>
</tr>
<tr>
<td>Acute Acrylonitrile Intoxication – Antidotal Assessment (Collaborator); F.W. Benz (PI) 09/01/98 - 08/31/99</td>
<td>NIEHS</td>
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<thead>
<tr>
<th>Dr. Y. James Kang</th>
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<tbody>
<tr>
<td>Effect of Catalase on Adriamycin Cardiotoxicity (PI) 08/01/95-07/31/00</td>
<td>NCI</td>
</tr>
<tr>
<td>Suppression of Cardiac Ischemia-Reperfusion Injury by Overexpression of metallothionein (PI) 01/01/97-12/31/00</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>Metallothionein and Adriamycin Cardiotoxicity (PI) 04/01/99 – 03/31/02</td>
<td>NHLBI</td>
</tr>
<tr>
<td>Metallothionein and Adriamycin Cardiotoxicity (PI) 04/01/99 – 03/31/02</td>
<td>Jewish Hospital Foundation</td>
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<tr>
<td>Metallothionein and Alcoholic Liver Injury (PI) 12/01/98-10/31/99</td>
<td>UofL Medical School</td>
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<table>
<thead>
<tr>
<th>Dr. Steven R. Myers</th>
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<tbody>
<tr>
<td>Hemoglobin adducts of tobacco smoke carcinogens (PI) 12/31/98 – 12/31/00</td>
<td>NCI – McKesson Bioservices</td>
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<tr>
<td>Dr. Steven R. Myers (cont.)</td>
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<tr>
<td>In Utero and neonatal exposure to environmental tobacco smoke and its effects on pulmonary development, lung function, and respiratory illness in the first year of life (Co-I); M.P. Ross (PI) 1/1/95 – 12/31/00</td>
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<tr>
<td>Alliant Community Trust</td>
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<td>$203,980</td>
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<tr>
<td>Equipment purchase: Mass Spectrometer (PI)</td>
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<tr>
<td>WHAS Crusade for Children</td>
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<td>$100,000</td>
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<thead>
<tr>
<th>Dr. William M. Pierce, Jr.</th>
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<tbody>
<tr>
<td>Bone Targeting of Estrogens for Osteoporosis (PI) 02/01/99 – 09/30/99</td>
</tr>
<tr>
<td>KOWA</td>
</tr>
<tr>
<td>$167,000</td>
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<tr>
<td>Bone Targeting of Pharmaceutical Agents for Osteoporosis – Phase 3 (P.I.) 08/01/98 – 02/01/99</td>
</tr>
<tr>
<td>KOWA</td>
</tr>
<tr>
<td>$32,692</td>
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<tr>
<td>HPLC Electrospray Mass Spectrometer (P.I.) 6/1/97 – 05/31/98</td>
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<td>Blood Lead Monitoring (PI) 01/01/99 – 12/31/99</td>
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<td>Service to Regional Practitioners</td>
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<td>Atomic Absorption Spectrophotometer (PI) 08/01/98 – 07/31/99</td>
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<td>WHAS Crusade for Children</td>
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<tr>
<td>Regulation of Neutrophil Activation (Collaborator); Kenneth McLeish (PI) 1999-2002</td>
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<tr>
<td>VA Merit Review</td>
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<tr>
<td>$300,000</td>
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<tr>
<td>Estrogens: Bone Blood Flow and Bone Mechanical Properties (Collaborator); John Fleming (PI) 1999 - 2000</td>
</tr>
<tr>
<td>NIH</td>
</tr>
<tr>
<td>$50,000</td>
</tr>
<tr>
<td>Dr. Peter P. Rowell</td>
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<tr>
<td>Effect of nicotine on central nicotinic receptor activation and desensitization (PI) 07/01/99 – 06/30/01</td>
</tr>
<tr>
<td>Functional activity of mesolimbic nicotinic receptors (PI) 9/1/99 - 6/30/02</td>
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<th>Dr. J. Christopher States</th>
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<tbody>
<tr>
<td>DNA Damage by Bioactivated Xenobiotics (PI) 09/99 - 07/00</td>
<td>NIEHS</td>
<td>$862,845</td>
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<tr>
<td>Genetic Polymorphisms in the Xeroderma Pigmentosum Group A Gene (PI) 10/99 - 6/00</td>
<td>IDEA Pilot Proposal</td>
<td>$18,000</td>
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<td>KOWA</td>
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<td>IDEA Pilot Proposal</td>
<td>$8,077</td>
</tr>
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</table>
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.

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. William Pierce 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.

School of Allied Health

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.

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. William Pierce)
- Pharmacology Seminar (Dr. Donald Nerland)

Individual faculty contributions to these courses are identified in the Appendix.
Individual faculty served on a number of graduate student committees as 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

Several faculty, students and staff were received research poster awards from the Jewish Hospital Foundation at the Research!Louisville meeting. **Drs. William Pierce** and **Len Waite** received first place, and **Dr. David Hein** received third place (faculty) awards in the category of Potential for Major Clinical Applications. **Jason Neale** received second place and **Adrian Fretland** received honorable mention awards in the graduate student competition. **Dr. Stephanie Webb** received an honorable mention award in the postdoctoral fellow competition.

**Adrian Fretland** received the third place award for his research poster at the annual meeting of the Ohio Valley Society of Toxicology, and was selected the 1999 K.C. Huang Outstanding Graduate Student in the Department of Pharmacology and Toxicology.

**Dr. David Gozal** was an invited Speaker at the 3rd International Congress of the World Federation of Sleep Research Societies, and was appointed Distinguished University Scholar at the University of Louisville.

**Dr. David Hein** was an invited Speaker at the XXXVII European Congress of Toxicology, and served as President of the Ohio Valley Society of Toxicology.

**Dr. James Kang** was an invited plenary speaker at the 6th Annual meeting of the Oxygen Society and the 2nd International Conference on Antioxidants and Free Radicals in Health and Disease.

**Dr. Steven Myers** was an invited speaker at the 17th International Meeting on Polycyclic Aromatic Compounds.

**Dr. Mitchell Ross** was promoted to associate professor with tenure.
XII. Standing Committees

Graduate Program Committee

Dr. Len Waite (Chair)
Dr. William Pierce (2001)
Dr. Peter Rowell (2000)
Dr. Fred Benz (1999)

PBSI/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Harrell Hurst (2001)
Dr. Mike Williams (2000)
Dr. Don Nerland (1999)

Teaching Evaluation Committee

Dr. Larry Carr (Chair)
Dr. Fred Benz (2001)
Dr. Mike Williams (2000)
Dr. Len Waite (1999)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Steve Myers (2001)
Dr. Theresa Chen (2000)
Dr. Harrell Hurst (1999)

Core Laboratories/Research Development Committee

Dr. William Pierce (Chair)
Dr. Theresa Chen (2001)
Dr. Steve Myers (2000)
Dr. Larry Carr (1999)

Ad hoc Technology/Y2K Committee

Dr. Harrell Hurst (Chair)
Dr. Fred Benz
Ms. Edie Greca
A Resolution in Recognition of the Service of
Dr. Peter K. Knoefel to the University of Louisville

Whereas, Peter Kline Klerner Knoefel was born in 1906 in New Albany, Indiana, received his Bachelor of Arts and Master of Arts from the University of Wisconsin, and his M.D. (cum laude) with special honors in physiology from Harvard Medical School; and

Whereas, Dr. Knoefel served as an assistant (1927-1928) and an instructor (1928-1929) in the Department of Pharmacology at the University of Wisconsin, served as a National Research Council Fellow (1931-1932), and as a research associate (1932-1935) in the Department of Pharmacology at Vanderbilt University; and

Whereas, Dr. Knoefel joined the University of Louisville in 1935, where he served as assistant professor of pharmacology (1935-1938), associate professor of pharmacology (1938-1939), professor of pharmacology (1939-1968), and professor emeritus of pharmacology (1968-1999); and

Whereas, Dr. Knoefel was appointed and served as the first chairperson of the newly created Department of Pharmacology at the University of Louisville (1941-1966), where he recruited and led an outstanding faculty and program, and served as chairman emeritus (1966-1999) of the Department; and

Whereas, Dr. Knoefel established the graduate training program in pharmacology in 1954 and served as the advisor of four students receiving the Ph.D. degree; and

Whereas, Dr. Knoefel was a member of the American Society for Pharmacology and Experimental Therapeutics, The Society of Experimental Biology and Medicine, The American Chemical Society, and Sigma Xi; and

Whereas, Dr. Knoefel was an expert in nervous system pharmacology, renal pharmacology and tubular transport mechanisms; on snake venoms, and radiopaque substances; and published numerous articles in scientific journals on local and general anesthetics, central stimulants, autonomic drugs, spasmolytic drugs, alimentary drugs, cardiac output and fluid therapy, radiopaque substances, alcohol, renal transport, and drug distribution; and

Whereas, Dr. Knoefel authored a book on Radiopaque Diagnostic Agents, edited and contributed to two volumes of the International Encyclopedia of Pharmacology and Therapeutics, edited and contributed to a textbook on the Absorption, Distribution, Transformation and Excretion of Drugs; and
**Whereas**, Dr. Knoefel served as Visiting Professor at the Institute and Museum of History of Science, Florence, Italy, was a distinguished scholar on the history of pharmacology and medicine, wrote *Felice Fontana 1730-1805. An Annotated Bibliography, Felice Fontana Life and Works;* and *Francesco Redi on Vipers, and A Hellenistic Treatise on Poisonous Animals (The “Theriaca” of Nicandos of Colophon),* and

**Whereas**, endowments have been established in his name to support an award for a graduating medical student at the University of Louisville who has shown special interest and ability in the basic and clinical areas of pharmacology, and for an endowed professorship in the Department of Pharmacology and Toxicology; and

**Whereas**, Dr. Knoefel was universally admired, appreciated, and respected by his colleagues, students, and friends; and

**Whereas**, Dr. Knoefel’s death on January 14, 1999, is a great loss to his friends and family, to the Department, the School of Medicine, and to the entire scientific community, all of whom hold him in highest respect and esteem; now

**Therefore Be It Resolved**, the Medical Council of the University of Louisville School of Medicine extends its deepest sympathy to his wife, the former Francesca Spina; and

**Be It Further Resolved** that this resolution by spread upon the minutes of the Medical Council this 24th day of February in the year nineteen hundred ninety-nine.
Whereas, Carlo H. Tamburro was born January 20, 1936, in Caserta, Italy, received his B.S. in Biology at Georgetown University, his M.D. from Seton Hall College of Medicine & Dentistry, and his M.P.H. in Environmental Sciences (Toxicology) from Columbia University School of Public Health, and

Whereas, Dr. Tamburro completed a National Institutes of Health Postdoctoral Fellowship under the direction of Dr. C. M. Leevy in the Division of Hepatic Metabolism & Nutrition at the Jersey City Medical Center and the East Orange Veterans Administration Hospital, East Orange, New Jersey, from 1965 to 1968, and served as Coordinator of these programs from 1969-1974, and

Whereas, Dr. Tamburro joined the University of Louisville in 1974 and served as Chief, Division of Digestive Diseases and Nutrition (1974-1980), Head, Occupational Medical Surveillance Team (1974-1979), Director, Vinyl Chloride Project (1974-1985), Director, Liver Research Center and Liver Reference Laboratory (1980-1999), Chief, Division of Occupational Health (1981-1989), Acting Chairman, Department of Community Health (1985-1989), Chief, Division of Occupational Toxicology (1990-1999), and founding Co-Director, Center for Environmental Health Sciences (1993-1999), and

Whereas, Dr. Tamburro served as Assistant in Medicine at Tufts Medical School (1964-1965), Assistant (1966-1967) and Instructor (1967-1969) in Medicine at the New Jersey College of Medicine, Assistant (1970-1974) and Associate (1974) Professor of Medicine at the College of Medicine & Dentistry of New Jersey, Associate Professor of Medicine (1974-1977), Associate in Oncology (1975-1999), Associate in Pediatrics (1977-1999), Professor of Medicine (1977-1999), Professor of Community Health (1981-1989), Associate in Pharmacology and Toxicology (1982-1989), Professor of Pharmacology and Toxicology (1990-1999), Member of the Graduate Faculty (1991-1999) and Associate of the Center of Excellence in Applied Microcirculatory Research (1991-1999) of the University of Louisville, and

Whereas, Dr. Tamburro was elected to thirty-four international, national, regional, and professional societies, and

Whereas, Dr. Tamburro received several honors from the College of Medicine and Dentistry of New Jersey, including receipt of the the Alumni Award for Distinguished Service in 1972, election to Alpha Omega Alpha in 1979, election as a fellow of the American College of Physicians in 1984, selection for the J. James Smith, M.D. Memorial Lecture, and selection as the commencement speaker at the New Jersey Medical School House Officer Commencement in 1988, and

Whereas, Dr. Tamburro served as a consultant in hepatology and nutrition for a number of organizations and hospitals, and was a scientific reviewer for 14 different scientific journals, and
Whereas, Dr. Tamburro was listed in Who’s Who in Health Care, Who’s Who in Legal Medicine, American Men and Women of Science, Who’s Who in the Southwest in Medicine, Who’s Who in American Education, Who’s Who in Science and Engineering, and Who’s Who in Medicine and Health Care, and

Whereas, Dr. Tamburro served as a mentor to many graduate students, postgraduate fellows, physician preceptors, and summer research students, and

Whereas, Dr. Tamburro participated in 80 scientific research grants, contracts and services, and authored or co-authored over 100 scientific and professional articles in books and journals, and over 100 additional scientific abstracts and presentations, and

Whereas, Dr. Tamburro was universally admired, appreciated, and respected by his colleagues, students, and friends; and

Whereas, Dr. Tamburro’s death on January 29, 1999 is a great loss to his friends and family, to the Department of Medicine, and Pharmacology and Toxicology, the School of Medicine, and to the entire scientific community, all of whom hold him in highest respect and esteem; now

Therefore Be It Resolved, the Department of Medicine, and Pharmacology and Toxicology extends its deepest sympathy to his wife, Kathleen O’Connell, his sons Carlo, Alexander, and Stefan, his daughter, Katerina, and his sister Mary Grace O’Connor, and

Be It Further Resolved that this resolution be spread upon the minutes of the Department of Pharmacology and Toxicology this 2nd Day of February, and the Department of Medicine on the 7th Day of February in the year nineteen hundred and ninety nine.