Department of Pharmacology & Toxicology

2005 Annual Report

University of Louisville

School of Medicine
Department of Pharmacology and Toxicology-2005
# TABLE OF CONTENTS

I. DEPARTMENT HIGHLIGHTS ................................................. 1
II. MISSION STATEMENT ...................................................... 4
III. FACULTY/RESEARCH DESCRIPTIONS (PRIMARY AND JOINT APPOINTMENTS) .... 5
IV. PERSONNEL ............................................................... 14
V. GRADUATES ............................................................... 21
VI. PUBLICATIONS (SALARIED FACULTY AND STAFF) .............. 22
VII. PUBLICATIONS (JOINT FACULTY) .................................. 31
VIII. ABSTRACTS (SALARIED FACULTY AND STAFF) ............... 36
IX. INVITED SCIENTIFIC PRESENTATIONS AND SEMINARS (SALARIED FACULTY) .... 51
X. TEACHING ............................................................... 58
XI. STANDING COMMITTEES ................................................ 59
XII. INDIVIDUAL FACULTY REPORTS

- Gavin E. Arteel
- Frederick W. Benz
- Jian Cai
- Theresa S. Chen
- Paul N. Epstein
- David Gozal
- Evelyne Gozal
- Ramesh Gupta
- David W. Hein
- Harrell E. Hurst
- Y. James Kang
- La Creis R. Kidd
- 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 foster excellence in graduate education and research as outlined in this annual report. Much of the details are provided in the individual faculty reports from each of the salaried faculty members. Notable achievements were the initiation of a new start up biotechnology company (Pradama, Inc) by Dr. William Pierce and receipt of a many awards by faculty, staff, and students as described below.

Faculty Awards

School of Medicine Golden Apple Award for Outstanding Teaching

• Dr. W. Michael Williams

Department of Pharmacology and Toxicology Outstanding Teaching Award

• Dr. W. Michael Williams

School of Medicine nominee: President’s Award for Outstanding Research, Scholarship, and Creative Activity (Career)

• Dr. William M. Pierce, Jr.

Ohio Valley Society of Toxicology Young Investigator’s Award

• Dr. Gavin E. Arteel

First place Award, Scientific Importance of Research, Research!Louisville

• Dr. Gavin E. Arteel

Appointment as Distinguished University Scholar

• Dr. Nick A. Delamere
• Dr. Paul N. Epstein
• Dr. David J. Tollerud

Appointment as University Scholar

• Dr. Zhao-Hui (Joe) Song

Health Science Center Technology Innovation Teaching Award

• Dr. Steven R. Myers
President’s Award for Outstanding Research, Scholarship, and Creative Activity

- Dr. David Gozal

President’s Award for Outstanding Research, Scholarship, and Creative Activity (Career)

- Dr. Donald M. Miller

Faculty Appointments/Promotions/Tenure

Promoted to Professor

- Dr. W. Glenn McGregor
- Dr. J. Christopher States

Promoted to Associate Professor

- Dr. David E. Clouthier
- Dr. Evelyne Gozal
- Dr. Yang Wang

Approved for Tenure

- Dr. David E. Clouthier
- Dr. Evelyne Gozal
- Dr. W. Glenn McGregor
- Dr. Yang Wang

Faculty Appointments

- Dr. Craig J. McClain

Dr. McClain left to take a position at Ohio State University, was but recruited back to UofL soon thereafter and was reappointed Professor of Medicine and Pharmacology/Toxicology. Dr. McClain agreed to take the lead role in UofL’s application for the Center for Translational Science Award. Dr. McClain’s new appointment includes a salary component from the Department.

Administrative Appointments

Associate Dean for Research, School of Medicine

- Dr. Peter P. Rowell
Chair, Department of Surgery

- Dr. Kelly M. McMasters

Staff Promotions

Administrative Assistant

- Sharon Carpenter
- Heddy Rubin

Research Scientist

- Mark Doll

Graduate Student Awards

KC Huang Outstanding Graduate Student Award

- Anwar Husain

John Richard Binford Memorial Award

- Anwar Husain

First place research award, FASEB/ASPET

- Tanvi Jani

First place research award, Ohio Valley Society of Toxicology

- Sam McNeely

Cancer Center Retreat Research Award

- Chad Dumstorf

Research!Louisville Awards

- Frazier Taylor
- Yu (Janet) Zang
Graduate Dean’s Citations

- Sam McNeely
- Jason Walraven
- Xiaoyan (Susan) Zhang

School of Medicine Distinguished Alumni Award

- Brian Lukey

II. Mission Statement

The Department of Pharmacology and Toxicology is committed to academic excellence and to the attainment of regional, national, and international recognition for the quality of its educational, research, and service activities. Guided by the University of Louisville Challenge for Excellence to become a preeminent metropolitan research university, the Department Strategic Plan focuses on five broad objectives:

- Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, nursing, and other health care professional students. Emphasis will be placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.

- Advance biomedical knowledge through active contribution to high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville Challenge for Excellence.

- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who can provide and advance biomedical education, research, and service.

- Provide instruction of the highest quality in pharmacology and toxicology that is appropriate for students at the undergraduate, graduate, and postgraduate levels.

- Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.
III. Faculty/Research Descriptions (Primary and joint appointments)

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

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

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

Mechanisms of oxidative stress; mechanisms of alcohol-induced hepatitis, pancreatitis, and hepatocellular carcinoma.

Shirish Barve, Ph.D. (University of Kentucky)
Associate Professor

Effects of alcohol on molecular mechanisms of cytokine action, gene expression and liver injury.

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

Biochemical pharmacology and toxicology; biochemical mechanisms of drug action and toxicity.

Aruni Bhatnagar, Ph.D. (University of Kanpur)
Professor

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

Jian Cai, Ph.D. (University of Louisville)
Instructor
Application of mass spectrometry in biomedical research. Drug and metabolite identification and quantification. Protein identification and post-translational modification. Hemoglobin adducts as biomarkers of chemical exposure and pathogenesis.

Theresa S. Chen, Ph.D. (University of Louisville)
Professor
Biochemical toxicology; role of glutathione in aging toxicology; general and specific toxicity of environmental pollutants.

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

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

---

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

---

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

---

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

---

**Richard E. Goldstein, M.D., Ph.D.**
(M.D., Thomas Jefferson University; Ph.D., Vanderbilt University)
Professor and vonRoenn Family Chair in Surgical Endocrinology
Surgical endocrinology; surgical oncology.
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>David Gozal, M.D.</strong></td>
<td>(Hebrew University of Jerusalem)</td>
<td>Professor</td>
<td>Signal transduction mechanisms underlying ventilatory response to hypoxia; neuronal adaptations to intermittent hypoxia: growth factors, intracellular signaling, and genomic implications.</td>
</tr>
<tr>
<td><strong>Evelyne Gozal, Ph.D.</strong></td>
<td>(University of Southern California)</td>
<td>Associate Professor</td>
<td>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.</td>
</tr>
<tr>
<td><strong>Ramesh C. Gupta, PhD</strong></td>
<td>(University of Roorkee)</td>
<td>Professor and Agnes Brown Duggan Chair of Oncological Research</td>
<td>Development and identification of intermediate biomarkers to investigate etiology and prevention of human cancers resulting from both environmental and endogenous exposures.</td>
</tr>
<tr>
<td><strong>Theo Hagg, MD, PhD</strong></td>
<td>(MD, University of Leiden; PhD, University of California, San Diego)</td>
<td>Professor and Endowed Chair In Neurological Surgery</td>
<td>Neurotrophic factor receptors and endogenous stem cells as drug targets to develop repair strategies for neurological disorders, including spinal cord injury.</td>
</tr>
<tr>
<td><strong>David W. Hein, Ph.D.</strong></td>
<td>(University of Michigan)</td>
<td>Professor</td>
<td>Molecular pharmacogenetics; molecular epidemiology; functional genomics; genetic predisposition to chemical carcinogenesis and drug toxicity; molecular genetics; environmental toxicology.</td>
</tr>
</tbody>
</table>
Michal Hetman, M.D., Ph.D.
(M.D., Warsaw Medical School; Ph.D., Polish Academy of Sciences)
Assistant Professor
Endowed Professor of Molecular Signaling
Role of signaling kinases in neuronal repair and demise.

Harrell E. Hurst, Ph.D. (University of Kentucky)
Professor
Analytical toxicology and kinetics with emphasis on qualitative and quantitative
techniques, including gas chromatography, high pressure liquid chromatography and
GC/mass spectrometry.

Y. James Kang, Ph.D. (Iowa State University)
Professor
Molecular and cardiac toxicology. Transgenic and knock-out animal models to study
oxidative injury and antioxidant systems in the heart. Biological functions and
toxicological significance of metallothionein and glutathione in vivo.

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

La Creis Renee Kidd, Ph.D., M.P.H.
(Ph.D., Massachusetts Institute of Technology)
(M.P.H. Johns Hopkins University)
Assistant Professor
Our Highest Potential Endowed Chair in Cancer Research
Gene-gene and gene-environmental interactions; polymorphic xenobiotic metabolizing
enzymes and prostate cancer susceptibility; cancer health disparities.
Craig J. McClain, M.D. (University of Tennessee, Memphis)
Professor
Jewish Hospital Distinguished Chair in Hepatology
Role of cytokines in liver injury and other forms of hepatotoxicity, interactions with nutrition and toxicology.

W. Glenn McGregor, M.D. (University of Michigan)
Professor
Molecular biology of DNA damage, repair and mutagenesis; molecular mechanisms of mutagenesis induced by model carcinogens; molecular mechanisms of replication of DNA templates containing well-defined site specific damage.

Kelly M. McMasters, M.D., Ph.D.
(University of Medicine and Dentistry of New Jersey/Rutgers Medical School)
Sam and Lolita Weakley Endowed Professor

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

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

Professor

Biochemical toxicology; metabolism of drugs and environmental pollutants.

William M. Pierce, Jr., Ph.D. (University of Louisville)

Professor

Mechanisms of bone formation and resorption; design of novel drugs for management of osteoporosis; biomolecular mass spectrometry; proteomics in structural biology.

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

Professor

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

George C. Rodgers, Jr. M.D., Ph.D.
(Ph.D., Yale University; M.D., State University of New York)

Professor

Toxicokinetics in drug overdoses and pharmacokinetics in pediatric disease states.

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

Professor

Neuropharmacology; effect of drugs on brain neurotransmitters and receptors.
Daniel I. Sessler, M.D. (Columbia University)
Professor
Weakley Distinguished University Research Chair
Outcomes research; effects of anesthetics on thermoregulation; perioperative heat balance; adverse effects of mild hypothermia; effects of supplemental perioperative oxygen on wound infections, nausea and vomiting.

Zhao-Hui (Joe) Song, Ph.D. (University of Minnesota)
Associate Professor
Molecular pharmacology; cloning and functional characterization of novel G protein-coupled receptors; molecular mechanisms of action and structure-function relationships of cannabinoid (marijuana) receptors.

J. Christopher States, Ph.D. (Albany Medical College/Union University)
Professor
Molecular biology and molecular genetics of DNA damage and repair in humans; mechanisms of chemoresistance; arsenic toxicity and cell cycle disruption.

Janice E. Sullivan, M.D. (University of Minnesota)
Associate Professor
Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.

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

Professor

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

Yang Wang, M.D. Ph.D. (M.D., Jiangxi Medical College; Ph.D., University of Toronto)

Associate Professor

Molecular and cellular regulation of genes implicated in hypoxic/ischemic injury and protection in the cardiovascular system.

Walter M. Williams, M.D., Ph.D. (University of Louisville)

Professor

Studies of drug elimination (metabolism and excretion).

Hong Ye, Ph.D. (Keele University)

Assistant Professor

Research to understand the structure and mechanism of tumorigenesis, with focus on Notch signaling pathway and chromosome DNA damage. X-ray crystallography, in combination with other biochemical and biophysics methods to understand the function of various molecular complexes.

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

Associate Professor

Ribozymes for gene therapy in rheumatoid arthritis; involvement and roles of cathepsins in oral cancers; gene expression profiling with DNA microarray chip technology.
Wayne S. Zundel, Ph.D. (Stanford University)
Assistant Professor
Molecular oncology.

IV. Personnel

Faculty with Primary Appointments

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

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

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

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

Gupta, Ramesh, Professor and Agnes Brown Duggan Chair of Oncological Research; Ph.D. Analytical/Physical Chemistry, University of Roorkee (1972).

Hein, David W., Peter K. Knoefel Professor and Chair; Ph.D., Pharmacology, University of Michigan (1982).

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

Kidd, LaCreis R., Assistant Professor, Ph.D., Toxicology, Massachusetts Institute of Technology (1997).

McGregor, W. Glenn, Professor; M.D., University of Michigan (1976).

Myers, Steven R., Associate Professor; Ph.D., Pharmacology, University of Kentucky (1986).

Nerland, Donald E., Professor; Ph.D., Medicinal Chemistry, University of Kansas (1974).

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

Rowell, Peter P., Professor; Ph.D., Pharmacology and Therapeutics, University of Florida (1975).
Song, Zhao-Hui (Joe), Associate Professor; Ph.D., Pharmacology, University of Minnesota (1992).

States, J. Christopher, Professor; Ph.D., Molecular Biology and Pathology, Albany Medical College/Union University (1980).

Waite, Leonard C., Professor and Vice Chair for Professional Education; Ph.D., Pharmacology, University of Missouri (1969).

Williams, Walter M., Professor; Ph.D., Pharmacology, University of Louisville (1970); M.D., University of Louisville (1974).

Faculty with Joint Appointments

Aronoff, George R., Professor of Medicine, and Pharmacology and Toxicology; M.D., Indiana University (1975).

Barve, Shirish, Associate Professor of Medicine (Gastroenterology), and Pharmacology and Toxicology; Ph.D., Molecular Pathogenesis, University of Kentucky (1990).

Bhatnagar, Aruni, Professor of Medicine (Cardiology), and Pharmacology and Toxicology; Ph.D., Chemistry, University of Kanpur (1985).

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

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

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

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

Eaton, John W., James Graham Brown Professor of Cancer Biology, Department of Medicine, and Professor of Pharmacology and Toxicology; Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969).
Epstein, Paul N.*, Carol B. McFerran Chair in Pediatric Diabetes Research and Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Pharmacology, Baylor College of Medicine (1981).

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

Goldstein, Richard E., Professor of Surgery, and Pharmacology and Toxicology; M.D., Thomas Jefferson University (1982); Ph.D., Molecular Physiology and Biophysics, Vanderbilt University School of Medicine (1994).

Gozal, David*, Children’s Hospital Foundation Pediatric Research Chair, Professor of Pediatrics, and Pharmacology and Toxicology; M.D., Hebrew University of Jerusalem, Hadassah Medical School (1979).

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

Hagg, Theo, Professor and Endowed Chair of Neurological Surgery, and Professor of Pharmacology and Toxicology; M.D., University of Leiden (1985), Ph.D., Neurosciences, University of California-San Diego (1998).

Hetman, Michal, Assistant Professor of Neurological Surgery, and Pharmacology and Toxicology; M.D., Warsaw Medical School (1994); Ph.D., Experimental and Clinical Medicine, Polish Academy of Sciences (1997).

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

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

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

McMasters, Kelly M., Professor of Surgery, and Pharmacology and Toxicology; Ph.D., Cell and Developmental Biology, Rutgers University (1988); M.D., UMDNJ R.W. Johnson Medical School (1989).

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

Pisano, M. Michele, Professor of Molecular, Cellular and Craniofacial Biology, and Pharmacology and Toxicology; Ph.D., Anatomy, Thomas Jefferson University (1985).
Rodgers, George C., Jr., Professor of Pediatrics, and Pharmacology and Toxicology; Ph.D., Organic Chemistry, Yale University (1964); M.D., State University of New York (1975).

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

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

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

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

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

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

Zundel, Wayne S., Assistant Professor of Radiation Oncology, and Pharmacology and Toxicology; Ph.D., Cancer Biology, Stanford University (2000).

* Partial salary from Department of Pharmacology and Toxicology

Faculty with Associate Appointments

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

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

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

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

Schurr, Avital, Professor of Anesthesiology; Ph.D., Biochemical Pharmacology, Ben Gurion University, Beer Sheva, Israel (1977).
Stansbury, Kevin H., Assistant Professor, Brown Cancer Center; Ph.D. University of Kentucky (1994).

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

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

Faculty with Emeritus Appointments

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

Dagirmanjian, Rose, Professor Emerita; Ph.D., University of Rochester (1960).

Darby, Thomas D., Adjunct Professor Emeritus; Ph.D., Medical College of South Carolina (1957).

Jarboe, Charles H., Professor Emeritus; Ph.D., University of Louisville (1956).

Scharff, Thomas G., Professor Emeritus; Ph.D., University of Rochester (1956).

Waddell, William J., Professor and Chair Emeritus; M.D., University of North Carolina (1955).

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

Faculty with Adjunct Appointments

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

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

Hong, Jun-Yan, Adjunct Professor of Pharmacology and Toxicology; Ph.D., University of Medicine and Dentistry of New Jersey (1987).

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).
Staff

Aiyer, Harini, Research Assistant
Barker, David, Research Scientist
Baumgarten, Sara, Student Assistant
Benford, Marnita, Laboratory Assistant
Burke, Tom, Research Technologist II
Carpenter, Sharon, Administrative Assistant
Doll, Mark, Research Scientist
Duveau, Ilinca, Research Technologist II
Greca, Edie, Business Manager InterIII
Guo, Luping, Senior Research Associate
Holloman, Jessica, Student Assistant
Hollkamp, Judy, Administrative Assistant
Jiang, Guohui, Research Associate Senior
Kellie, Brandon, Student Assistant
Liu, Marcia, Research Associate
Martini, Ben, Student Assistant
Miller, Heather, Senior Research Technician
Rubin-Teitel, Heddy, Administrative Assistant
Smith, Ned, Senior Research Technologist
Taylor, Kevin G., Research Technologist IV
Templeton, Tiva, Research Technologist II
Tucker, Alison, Lab Research Technician III
Turner, Delano, Lab Research Technician III
Vadhanam, Manicka, Senior Research Associate
Venugopal, Kamal, Research Associate
Watson, Nick, Lab Research Technician III

Postdoctoral Fellows

Ali, Yeakub
Bendaly, Jean
Beier, Juliane
Bergheim, Ina
Jiang, Guo-hui
Kim, Tae Kang
Mukhopadhyay, Suparna
Neale, Jason
Ravoori, Srivani
Thaiparambil, J. Thomas
Zhao, Shuang
### Continuing Graduate Students

<table>
<thead>
<tr>
<th>Name</th>
<th>Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherone Anthony</td>
<td>Aruni Bhatnagar</td>
</tr>
<tr>
<td>Aisha Bagshaw</td>
<td>Bill Pierce</td>
</tr>
<tr>
<td>Cristian Campian</td>
<td>Fred Benz</td>
</tr>
<tr>
<td>Alex Carrasquer</td>
<td>Joe Song</td>
</tr>
<tr>
<td>Wendy Chang</td>
<td>Theresa Chen</td>
</tr>
<tr>
<td>Molly Davis</td>
<td>Gavin Arteel</td>
</tr>
<tr>
<td>Chad Dumstorf</td>
<td>Glenn McGregor</td>
</tr>
<tr>
<td>Agata Habas</td>
<td>Michal Hetman</td>
</tr>
<tr>
<td>Anwar Husain</td>
<td>David Hein</td>
</tr>
<tr>
<td>Jin Liu</td>
<td>Michael Brier</td>
</tr>
<tr>
<td>Sam McNeely</td>
<td>Chris States</td>
</tr>
<tr>
<td>Robert Martin</td>
<td>David Hein</td>
</tr>
<tr>
<td>Kevyn Merten</td>
<td>James Kang</td>
</tr>
<tr>
<td>Kristin Metry</td>
<td>David Hein</td>
</tr>
<tr>
<td>Tanvi Jani</td>
<td>Shirish Barve</td>
</tr>
<tr>
<td>Sam McNeely</td>
<td>Chris States</td>
</tr>
<tr>
<td>Afsoon Moktar</td>
<td>Ramesh Gupta</td>
</tr>
<tr>
<td>Lasharon Mosley</td>
<td>Richard Goldstein</td>
</tr>
<tr>
<td>Sheila Mullins</td>
<td>Paul Epstein</td>
</tr>
<tr>
<td>Miranda Nebane</td>
<td>Joe Song</td>
</tr>
<tr>
<td>YaFatou Njie</td>
<td>Joe Song</td>
</tr>
<tr>
<td>John Philipose</td>
<td>Michele Pisano</td>
</tr>
<tr>
<td>Paul Porter</td>
<td>Chris States</td>
</tr>
<tr>
<td>Stephen Reeves</td>
<td>David Gozal</td>
</tr>
<tr>
<td>Katie Richardson</td>
<td>Gavin Arteel</td>
</tr>
<tr>
<td>Emily Esposito</td>
<td>Michele Pisano</td>
</tr>
<tr>
<td>Gilandra Russell</td>
<td>Gavin Arteel</td>
</tr>
<tr>
<td>Frazier Taylor</td>
<td>Chris States</td>
</tr>
<tr>
<td>Joshua Thornburg</td>
<td>Jason Chesney</td>
</tr>
<tr>
<td>Jason Walraven</td>
<td>David Hein</td>
</tr>
<tr>
<td>Nick Watson</td>
<td>Glenn McGregor</td>
</tr>
<tr>
<td>Christina Wiegand</td>
<td>Evelyne Gozal</td>
</tr>
<tr>
<td>Steven Xu</td>
<td>Theresa Fan</td>
</tr>
<tr>
<td>Lu Yang</td>
<td>Paul Epstein</td>
</tr>
<tr>
<td>Janet Zang</td>
<td>David Hein</td>
</tr>
<tr>
<td>Rundong Zhang</td>
<td>Joe Song</td>
</tr>
<tr>
<td>Susan Zhang</td>
<td>David Hein</td>
</tr>
<tr>
<td>Yang Zhou</td>
<td>James Kang</td>
</tr>
</tbody>
</table>
New Graduate Students

Bratcher, Jeremy
Decker, Rebecca
Hoetker, David
Jones, Kay
Kaiser, Phillip
Kamga, Christelle
Kennedy, Mary Jayne
Ma, Shankang
Mathews, Stephanie
Menchu, Mildred
Nzimulinda, Jean Claude
Phelps, Allison
Rogers, Erica
Smith, Wesley
Souza, Vinnie
Wang, Jianxun

V. Graduates

<table>
<thead>
<tr>
<th>Graduate</th>
<th>Degree</th>
<th>Mentor</th>
<th>Dissertation or Thesis Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul C. Porter</td>
<td>Ph.D.</td>
<td>J. Christopher States, Ph.D.</td>
<td>Discovery and functional analysis of XPA polymorphisms and use of telomerase immortalized cells for nucleotide excision repair studies</td>
</tr>
<tr>
<td>Ya Fatou Njie</td>
<td>M.S.</td>
<td>Zhao-Hui (Joe) Song, Ph.D.</td>
<td>Effects of the endogenous cannabinoid, noladin ether on aqueous humor outflow facility mediated by the CB1 cannabinoid receptor</td>
</tr>
<tr>
<td>Molly Anne Davis</td>
<td>M.S.</td>
<td>Gavin E. Arteel, Ph.D.</td>
<td>Characterization of recovery from liver damage by choline deficiency: Effect of biochemical modulators of lipid metabolism?</td>
</tr>
<tr>
<td>E. Cristian Campian</td>
<td>Ph.D.</td>
<td>Frederick W. Benz, Ph.D.</td>
<td>Acute acrylonitrile toxicity: Mechanistic studies</td>
</tr>
<tr>
<td>Anwar Husain</td>
<td>Ph.D.</td>
<td>David W. Hein, Ph.D.</td>
<td>Regulatory control regions of human arylamine N-acetyltransferase 1 and 2: Implications for genetic predisposition to breast cancer</td>
</tr>
<tr>
<td>Name</td>
<td>Degree</td>
<td>Advisor(s)</td>
<td>Title</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------</td>
<td>------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Xiaoyan (Susan) Zhang</td>
<td>M.S.</td>
<td>David W. Hein, Ph.D.</td>
<td>Role of N-acetyltransferase (NAT) polymorphism on 4,4’-methylene bis (2-chloroaniline) and 4,4’-methylenedianiline (MDA) acetylation, MDA hepatotoxicity and a proposal to study NAT expression in breast cancer</td>
</tr>
<tr>
<td>Gilandra Russell</td>
<td>M.S.</td>
<td>Gavin E. Arteel, Ph.D.</td>
<td>Protection of cultured hepatocytes from hypoxic death by ATP-delivery with lipid vesicles</td>
</tr>
<tr>
<td>Samuel C. McNeely</td>
<td>M.S.</td>
<td>J. Christopher States, Ph.D.</td>
<td>Arsenic: A potential chemotherapeutic for melanoma</td>
</tr>
<tr>
<td>Tanvi S. Jani</td>
<td>M.S.</td>
<td>Shirish Barve, Ph.D.</td>
<td>Methionine adenosyltransferase IIA (MAT IIA) and S-adenosylmethionine (SAMe) are critical for the survival of CD4+ T lymphocytes</td>
</tr>
<tr>
<td>Jin Liu</td>
<td>M.S.</td>
<td>Michael E. Brier, Ph.D.</td>
<td>An evaluation of pharmacokinetic study design for describing drug disposition in renal failure</td>
</tr>
<tr>
<td>Kevyn E. Merten</td>
<td>M.S.</td>
<td>Y. James Kang, Ph.D.</td>
<td>Molecular mechanisms of metallothionein protection from Adriamycin cardiotoxicity</td>
</tr>
<tr>
<td>Jason M. Walraven</td>
<td>M.S.</td>
<td>David W. Hein, Ph.D.</td>
<td>Investigations of N-acetyltransferases in human hepatocytes and rat models</td>
</tr>
<tr>
<td>Nicholas B. Watson</td>
<td>M.S.</td>
<td>W. Glenn McGregor, M.D.</td>
<td>The ubiquitin ligase RAD18 is implicated in mutagenic translesion synthesis of DNA damage in human cells</td>
</tr>
</tbody>
</table>

VI. Publications (salaried and emeritus faculty)

Papers


30


**VII. Additional Publications of Faculty with Joint Appointments**


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


96. La Creis Renee Kidd, Ph.D., M.P.H., Karen Woodson, Ph.D., M.P.H., Phillip R. Taylor, M.D., Demetrius Albanes, Ph.D., Jarmo Virtamo, Ph.D., and Joseph A. Tangrea, M.P.H., Ph.D., Polymorphic IL-10 and Susceptibility to Prostate Cancer Among participants of the ATBC Cancer Prevention Study. 96th Annual AACR Meeting, Annaheim, CA, April 2005.


98. La Creis Renee Kidd, Ph.D., M.P.H., Karen Woodson, Ph.D., M.P.H., Phillip R. Taylor, M.D., Demetrius Albanes, Ph.D., Jarmo Virtamo, Ph.D., and Joseph A. Tangrea, M.P.H., Ph.D., Polymorphic IL-10 and Susceptibility to Prostate Cancer Among participants of the ATBC Cancer Prevention Study. 3rd Annual Brown Cancer Center Retreat, September 2005.


104. E. Krishnan, C.A. Dumstorf, A. B. Jenson, W. G. McGregor, and B. Haribabu. Leukotriene B4: At the Crossroads of Chronic Inflammation and Cancer. Research! Louisville; 2005; Louisville, KY. [First Place Award, Graduate Student Division]


109. Weeks, Jonathan and Myers, Steven R. Levels of Polycyclic Aromatic hydrocarbons in amniotic fluid samples from smokers and nonsmokers. Society of Toxicology Meeting, March 6 – 11, 2005, New Orleans, LA.


111. Myers, Steven R., Cunningham, Christopher, and Wright, Terry, Correlation of maternal hemoglobin (Hb) 4-aminobiphenyl adduct levels with respect to cotinine levels and maternal genotypes. Society of Toxicology Meeting, March 6 – 11, 2005, New Orleans, LA.

112. Cunningham, Christopher, Wright, Terry, and Myers, Steven R., Correlation of maternal and fetal hemoglobin (Hb) adducts in smokers with respect to genotype. Society of Toxicology Meeting, March 6 – 11, 2005, New Orleans, LA.
113. Wright, Terry, Cunningham, Christopher, and Myers, Steven R., *Relationship between CYP1A1 genotype and benzo(a)pyrene (BP) hemoglobin (Hb) adducts in maternal and fetal blood*. Society of Toxicology Meeting, March 6 – 11, 2005, New Orleans, LA.


119. Z H Song, Research Round Table/Symposium: Treatment of eye diseases with Chinese herbs or their active principles. China-US Relations Conference sponsored by Bush International Center/George Bush Presidential Library and Beijing University, November 14 - 17, 2005.


121. The high constitutive activity exhibited by CB1 is due in part to the lack of aromatic residues I-4 and I+3 from W6.48. Ntsang Miranda Nebane, Patricia H. Reggio and Zhao-Hui Song, International Cannabinoid Research Society Conference, 2005.


IX. Invited Scientific Presentations and Seminars (salaried faculty)

**Dr. Gavin Arteel**

Research seminar, 01/05, “New 'antioxidants' to prevent hepatic inflammation and damage”, University of Alabama-Birmingham, Dept of Pathology, Birmingham, AL.
Symposium, 04/05, “EtOH/Transplant models,” University of Louisville and Jewish Hospital, Midwest Liver Meeting, Louisville, KY.

Seminar, 06/05, “Modeling ALD,” University of Louisville Alcohol Research Group, Louisville, KY.

Plenary Lecture, 06/05, “Modeling ALD: Where are we and where should we go?” Research Society of Alcoholism annual meeting, Santa Barbara, CA.

Seminar, 08/05, “New potential players in liver diseases,” University of Louisville, Dept of Pharmacology and Toxicology, Louisville, KY.

Seminar, 09/05, “Inflammatory and fibrotic changes in the liver: new slices of the PAI,” University of Louisville, Dept of Physiology and Biophysics, Louisville, KY.

Research seminar, 10/05, “Inflammation and fibrosis in liver: contributions of PAI-1” Kansas University Medical Center, Dept of Pharmacology, Toxicology and Therapeutics, Kansas City, KS.

Plenary lecture, 10/05, “Inflammation and fibrosis in the liver: contributions of PAI-1,” Ohio Valley Society of Toxicology, Annual meeting, Louisville, KY.

Research symposium, 11/05, “Metformin protects against hepatic ischemia reperfusion injury in rats” American Association for the Study of Liver Diseases, annual meeting, San Francisco, CA.

Research seminar, 11/05, “Modeling alcoholic liver disease: new slices of the 'PAI.'” Case Western Reserve University, Dept of Nutrition, Cleveland, OH.

Research symposium, 12/05, “Oxidative stress in alcoholic liver disease.” International symposium on energy metabolism and oxidative stress in liver pathophysiology, Juntendo University, Tokyo, Japan.

**Dr. David Gozal**

*The Snoring Child: A Bedside Conundrum.*
Invited Speaker, ACCP Course, January 11-12, 2005, Scottsdale, AZ.

Annenberg Award Lecture, 23rd Annual Conference on Sleep Disorders in Infancy and Childhood, January 13, 2005, Rancho Mirage, CA

*Neural Implications of Sleep Apnea: Injury, Plasticity and Repair.*
Children’s Hospital Boston, April 4, 2005, Boston, MA.

*Non-Invasive Ventilation in Children.*
Children’s Hospital Boston, April 5, 2005, Boston, MA.
Cysteinyl Leukotrienes: Important Mediators in the Pathogenesis of Allergic Rhinitis.
Massachusetts Pediatric Pulmonology Association, April 6, 2005, Boston, MA.

The Snoring Child: A Not so Benign Bedtime Noise.
Invited Speaker, Boston Medical Center, April 6, 2005, Boston, MA.

New England Invited Pediatric Pulmonary Consortium Weekly Session) Massachusetts General Hospital, April 6, 2005, Boston MA.

Snoring in Children: Sound the Alarm!
Invited Speaker, Committee on Sleep Medicine and research, Workshop on the Public Health Deprivation and Disorders, Institute of Medicine, April 12, 2005, Washington, D.C.

Cysteinyl Leukotrienes: Important Mediators in the Pathogenesis of Allergic Rhinitis.
University of Memphis, April 19, 2005, Memphis, TN.

Snoring in Children: More than Just Noise.
Invited Speaker, Grand Rounds Stony Brook University, July 13, 2005, Stony Brook, NY

Children’s Hospital of the King’s Daughters, September 7, 2005, Virginia Beach, VA

Children’s Hospital of the King’s Daughters, Division of Allergy and Immunology, September 8, 2005, Norfolk, VA

Medical College of Virginia, September 8, 2005, Richmond, VA

Snoring in Children: More than Just Noise.
Grand Rounds, Loyola University, Stritch School of Medicine, September 13, 2005, Maywood, IL

Cysteinyl Leukotrienes: Important Mediators in the Pathogenesis of Allergic Rhinitis.
Invited Speaker, Chicago Thoracic Society, September 15, 2005, Brookfield, WI

Snoring in Children: More than Just Noise.
Invited Speaker, Grand Rounds Children’s Hospital Milwaukee, Medical College of Wisconsin, September 14, 2005, Chicago, IL

Snoring in Children: Metabolic Consequences.
Invited Speaker, Research Grand Rounds, Children’s Hospital Milwaukeee, Medical College of Wisconsin, September 14, 2005, Chicago, IL
Snoring in Children: More than Just Noise.
Invited Speaker, Grand Rounds supported by Children’s Memorial Hospital, Northwestern School of Medicine, September 16, 2005, Chicago, IL

Snoring in Children: More than Just Noise.
Invited Speaker, Grand Rounds Southwestern Medical Center, The University of Texas, September 21, 2005, Dallas, TX.

Snoring in Children: More than Meets the Ear.
Invited Guest Speaker, Nancy N. Huang, MD Guest Professor in Cystic Fibrosis and Pediatric Pulmonology, St. Christopher’s Hospital for Children-Drexel University College of Medicine, October 6, 2005, Philadelphia, PA.

Snoring in Children: More than Meets the Ear.
Invited Speaker, Grand Rounds, St. Christopher’s Hospital for Children-Drexel University College of Medicine, October 7, 2005, Philadelphia, PA.

Keynote Speaker, Chile Pediatric Society Conference. 3 talks on:
CCHS
Sleep Apnea in Children: Diagnosis and Management
Rhinitis and Sleep in Children
Santiago de Chile, Chile, October 2005

Keynote Speaker, French Sleep Research Socitey Annual Conference, November 23-25, 2005, Lyon France

Dr. David W. Hein


Molecular Epidemiology Investigations From SNPs to Cancer Risks. Biomarkers, Genetics and Chemoprevention Program, James Graham Brown Cancer Center, University of Louisville, Louisville, Kentucky, March 2005.

Genetic Polymorphisms in Human NAT1 and NAT2. Center for Environmental Systems Biology, University of Louisville, Louisville, Kentucky, April 2005.

Characterization of NAT1 Overexpression in Breast Tumors (with Dr. David Barker). Division of Cancer Biology, National Cancer Institute Activities to Promote Research Collaborations (APRC) Workshop, Gaithersburg, Maryland, October 2005.


Dr. Harrell E. Hurst


Dr. Y. James Kang


Nov 2, 2005; Invited Seminar, University of Kentucky, Interdisciplinary Nutrition Graduate Program, “Copper Supplementation and Regression of Hypertrophic Cardiomyopathy”

Oct 11, 2005; Invited Speaker, The 5th International Conference on Metallothionein, Beijjing, China, October 8-12, 2005, “Metallothionein protection from oxidative heart injury”


Dr. W. Glenn McGregor


Steven R. Myers

“Biomarkers of Polycyclic Aromatic Hydrocarbons” Department of Pediatrics, University of Louisville School of Medicine, Louisville KY, March 30, 2005.

“Biomarkers of maternal and fetal tobacco exposure” Department of Pediatrics, University of Louisville School of Medicine, February, 2005.

“Biomarkers of exposure to polycyclic aromatic hydrocarbons” Australia Aluminum Council, Gladstone, Australia, April, 2005.

“Hemoglobin as a biomarker of exposure to environmental PAHs” Australia Aluminum Council, Gladstone, Australia, April, 2005.


“Biomarkers: advantages and disadvantages in population studies” Australia Aluminum Council, Gladstone, Australia, April, 2005.


“Biomarkers of tobacco smoke exposure” University of Louisville Birth Defects Center, October, 2005.

“Biomarkers of Tobacco exposure: correlation with mutations in msn1 and ir6 genes” University of Louisville Birth Defects Center, NIH site visit seminar, November 2005.

William M. Pierce, Jr.


Spectra for the Masses: From Biomedical Science to CSI. Cancer Chemoprevention Unit, University of Louisville, September, 2005.


**Zhao-Hui (Joe) Song**

Invited Talk: Treatment of glaucoma with marijuana and its active principals.
Research Round Table/Symposium: Treatment of eye diseases with Chinese herbs or their active principles. China-US Relations Conference sponsored by Bush International Center/George Bush Presidential Library and Beijing University, November 16, 2005.

Invited Seminar: Functional Significance of Cannabinoid Receptor Polymorphisms.
Genomics and Bioinformatics Institute, Chinese Academy of Sciences, Beijing, China, November, 20 2005.

Invited Seminar: A journey from opioid to cannabinoid field. Dr. E Leong Way birthday symposium, July 10, 2005

**J. Christopher States**

4/11/05 “Arsenic Induced Atherosclerosis” Department of Medicine, Division of Cardiology, University of Louisville, Louisville, KY.

9/19/05 “Arsenic, mitotic death and p53” The Graduate Center for Toxicology, University of Kentucky, Lexington, KY.

11/8/05 “Arsenic: Friend or Foe?” Biomarkers, Genetics & Chemoprevention Group, James Graham Brown Cancer Center, University of Louisville, Louisville, KY.

12/7/05 “Arsenic: Potent Poison / Potential Panacea?” Department of Biology, Georgetown College, Georgetown, KY.
X. Teaching

School of Medicine

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

School of Dentistry

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

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

School of Nursing

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

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

The Department developed and provided an online pharmacology course for undergraduate nursing students. Dr. Steve Myers developed the course and served as course director.

Graduate School

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

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

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

Graduate Program Committee

Dr. William Pierce (Chair)
Dr. Gavin Arteel (2007)
Dr. Evelyne Gozal (2006)
Dr. Chris States (2005)
Jason Walraven (student representative)

SIBUP/Grievance Committee

Dr. Peter Rowell (Chair)
Dr. Harrell Hurst (2007)
Dr. Joe Song (2006)
Dr. Don Nerland (2005)

Teaching Evaluation Committee

Dr. Mike Williams (Chair)
Dr. Fred Benz (2007)
Dr. Harrell Hurst (2006)
Dr. Len Waite (2005)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Steve Myers (2007)
Dr. Ramesh Gupta (2006)
Dr. Fred Benz (2005)

Core Laboratories/Research Development Committee

Dr. Chris States (Chair)
Dr. Theresa Chen (2007)
Dr. Jian Cai (2006)
Dr. Glenn McGregor (2005)

Information Technology Committee

Dr. Gavin Arteel
Dr. Fred Benz
Dr Harrell Hurst