UNIVERSITY OF LOUISVILLE®

SCHOOL OF MEDICINE

Department of Pharmacology & Toxicology

2016 Annual Report

MISSION

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 Strategic Plan (The 2020 Plan) to continue our path to national prominence, the mission of the Department of Pharmacology and Toxicology 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 is 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 high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville 2020 Plan.

- Provide high quality research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who will 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.

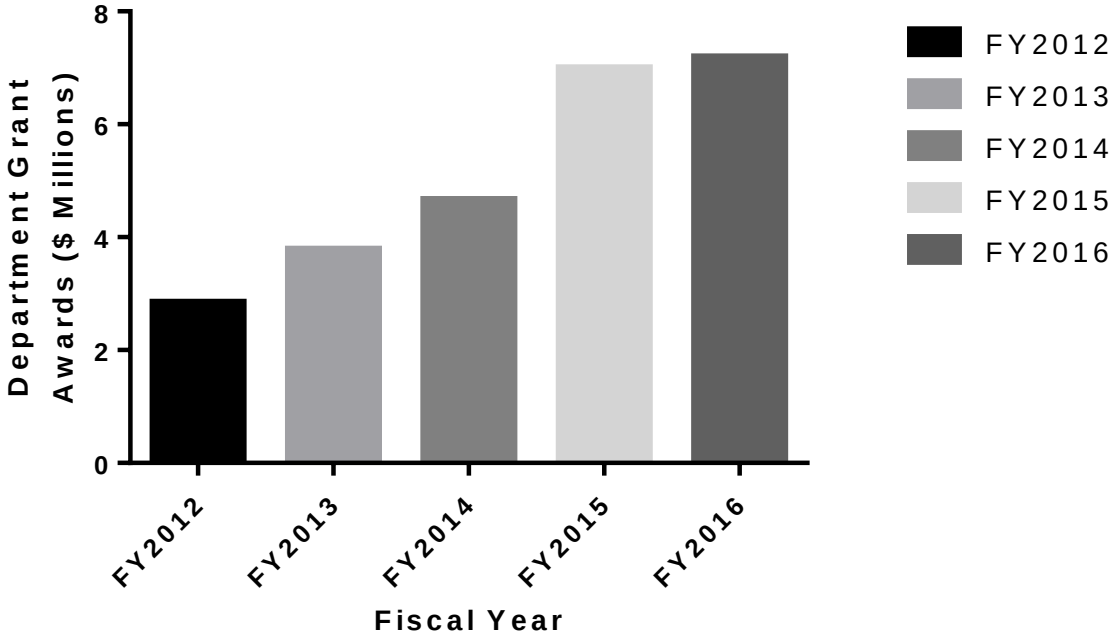
- Provide high quality service to the School of Medicine, the Health Sciences Center, the University, the people of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

OVERVIEW

We mourned the loss of Professor Steve Myers who passed away December 4, 2016. Dr. Myers was recruited to the University of Louisville in 1991 and over 25 year career was promoted through the ranks of Professor and Associate Chair for Professional Education in the Department of Pharmacology and Toxicology. Dr. Myers served as course director for numerous pharmacology-based courses taught to medical, dental, nursing, graduate, and undergraduate students. He was recognized for his innovation in teaching via receipt of the Health Science Center Technology Innovation Teaching Award and by his nomination for numerous teaching awards at the University of Louisville. Dr. Myers also had an outstanding international reputation for excellence in teaching and research. He was the founding editor of the Journal of Medical Education and Curricular Development. He was frequently invited as a teacher and examiner of medical and graduate students at universities

in Egypt and the Caribbean. He was very active and successful in international educational and research collaborations, particularly in Egypt. He led the effort to initiate a PhD partnership with Cairo University and Ain Shams University. Dr. Myers had an active research career including studies of drug and xenobiotic metabolism and biomarkers of chemical exposure and effects. He developed the first widely applicable biomarker for human exposure to PAH (polycyclic aromatic hydrocarbons) through his development of chromatographic and mass spec techniques which allowed the detection of hemoglobin adducts of PAH in maternal and fetal blood. Dr. Myers served on numerous committees within the School of Medicine and at the University. These committees included the School of Medicine Faculty Forum (including service as secretary and vice chair), University of Louisville Graduate Council, University of Louisville Faculty Senate and its Academic Programs Committee, the School of Medicine Admissions Committee, Educational Policy Committee, and Second Year Curriculum Committee, the Department of Pharmacology and Toxicology Graduate Recruitment and Admissions Committee, and the Department Faculty Teaching Evaluation Committee he chaired. He was a dear friend and advisor to many of us and will be deeply missed. A resolution of appreciation is provided on page 99.

Extramural Research Funding



Extramural research funding rose slightly in FY2016. The Department ranked 29th nationally among all departments of pharmacology in US medical schools and ranked a close third highest among all departments in the University of Louisville School of Medicine. Details on funded research grants are provided beginning on page 55.

The NIEHS T32 training grant in environmental health sciences was renewed for an additional five years. Dr. Gavin Arteel serves as the Director on the renewal with Drs. Hein, Bhatnagar and Cave serving as co-directors.

Major NIH center grants were awarded for a Hepatobiology and Toxicology COBRE and a UofL Alcohol Research Center (Dr. Craig McClain serves as PI on both).

Dr. Mary Li, a UofL 1997 PhTx Ph.D. graduate who subsequent completed a hematology/oncology residency at UofL, established a gift agreement with the department to provide scholarships for students from Tianjin China (where she received her medical training prior to receiving a scholarship to enter our PhD program in pharmacology and toxicology at the University of Louisville). The Department previously had an affiliation with Tianjin Medical University in which Dr. K.C. Huang and other members of our department faculty taught at Tianjin Medical College (now University). Drs. David Hein, Shao Wu (Chair of Radiation Oncology) and Lu Cai visited the Institute of Radiation Medicine, Chinese Academy of Medical Sciences/Peking Union Medical College in Tianjin, China. Peking Union Medical College (located in Beijing) is one of the oldest and most prestigious medical schools in China. The institute invited us to discuss developing a PhD/residency partnership where their students and clinicians transfer to UofL to complete their PhD degree in pharmacology & toxicology. Upon completing their PhD, they would be eligible to apply for the match to enter the residency program in radiation oncology at UofL.

A Wenzhou Medical University delegation visited UofL. All Wenzhou University students briefly described their research projects and spoke highly of their time and experiences here. Feedback from the Wenzhou Medical University delegation was highly positive. An agreement was signed to promote further collaborations.

New pharmacology and toxicology graduate courses were designed and approved.

Following review of his performance as Chair of the Department of Pharmacology and Toxicology, Dr. Hein was reappointed chair for an additional five year term (report is appended).

Faculty promotions

Professor Igor Luckashevich was awarded tenure.

Faculty Administrative Appointments

Professor Kenneth Palmer was appointed Director for the Center for Predictive Medicine

Professor Jonathan Freedman was appointed co-director of the Center for Environmental Health Sciences

Professor John Wise Sr. was appointed co-director of the Center for Environmental Health Sciences

New appointments of secondary faculty members

Bradford G. Hill, Ph.D.

Assistant Professor of Medicine
Ph.D., Biochemistry, University of Louisville (2007)

Research Interests: The broad theme of my research entails understanding how changes in metabolism contribute to cardio-metabolic health and disease. This involves the critical examination of glycolysis, mitochondria, and other pathways of intermediary metabolism and the development of causal relationships between metabolic defects or signatures and (patho)physiology.

Donghan Lee, Ph.D.

Associate Professor of Medicine
James Graham Brown Chair of Structural Biology
Ph.D., Biophysics, Swiss Federal Institute of Technology (2003)

Research Interests: Molecular recognition between biomolecules such as protein-protein, protein-DNA, protein-carbohydrate, protein-ligands; design NMR experiments and development of associated theory.

Craig S. Roberts, M.D.
Professor and Chair of Department of Orthopaedic Surgery
M.D., New York University (1986)

Research Interests: Orthopaedic trauma, fractures and their complications and outcomes.

Resignations and Retirements of Associate Faculty

Dr. Guy Brock, Associate Professor of Bioinformatics and Statistics resigned his faculty position at UofL to take a position at Ohio State University.

Dr. David Tollerud, Professor and Chair of Environmental and Occupational Health Sciences retired.

Dr. Binks Wattenberg, Associate Professor of Biochemistry and Molecular Genetics resigned his faculty position to accept a faculty position in the Department of Biochemistry at Virginia Commonwealth University.

FACULTY WITH PRIMARY APPOINTMENTS

Demetra Antimisiaris, PharmD

Associate Professor
PharmD, University of Pacific (1989)

Research Interests: Decision making regarding medication use; Prescribing, Monitoring, Patient Use (adherence, health and pharm literacy), and how Pharm-Tox awareness, education, and the healthcare systems (incentives for time and patient integration) impact medication use outcomes from the perspective of the providers, patients, and health care systems. FDA approved medication specifications vs. recommendations vs. real time use of medications and how this impacts treatment failure or success. (i.e. prevalence of missed monitoring parameters such as renal function with medications known to lead to renal accidents)

Gavin E. Arteel, PhD

Professor and Associate Chair for Research
Ph.D., Toxicology, University of North Carolina-Chapel Hill (1997)

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

Juliane I. Beier, Ph.D.

Assistant Professor
Ph.D., Biochemistry and Molecular Biology, Heinrich-Heine-Universität (2005)

Research Interests: Interactions of diet and environmental toxins in the production of non-alcoholic fatty liver disease.

Brian P. Ceresa, Ph.D.

Associate Professor
Ph.D., Pharmacology, Vanderbilt University (1995)

Research Interests: Membrane trafficking and signaling of the epidermal growth factor receptor (EGFR). The EGFR is overexpressed and hyperactivated in many cancers. Our goal is to better understand how signaling by this receptor is regulated with the goal of attenuating its signaling in cancer.

Shao-yu Chen, Ph.D.

Professor
Ph.D., Biochemistry, Fujian Agriculture and Forestry University (1991)

Research Interests: Elucidation of cellular and molecular mechanisms of alcohol-induced birth defects utilizing a combination of experimental approaches including interference, technology, and ultrasound-guided *in utero* microinjection in cellular, whole embryo and *in vivo* mouse models.

Geoffrey J. Clark, Ph.D.

Associate Professor
Ph.D., Molecular Oncology, University of Manchester (1989)

Research Interest: Role of RAS oncogenes and RASSF family of tumor suppressors in cancer etiology; Development of oncopig model for human cancer; Identification and development of novel small molecules for cancer therapy.

Jonathan Freedman, Ph.D.

Professor
Ph.D., Molecular Pharmacology, Albert Einstein College of Medicine (1986)

Research Interests: The research program in our group involves understanding regulatory processes controlling an organism's response to environmental stress. In particular, how organisms respond when they are exposed to toxic concentrations of transition metals and metalloids. By applying classic genetic and reverse-genetic approaches, molecular biology and transcriptomic techniques in an evolutionarily diverse group of animal species including the nematode C. elegans and mice, as well as mammalian cell culture, regulatory pathways that respond to metals are identified and characterized. Results from this research are used to help elucidate the fundamental mechanisms of transition metal induced disease: developmental abnormalities (Autism Spectrum Disorders), cancer and metabolic disorders, such as type 2 diabetes and obesity. In addition to our work with transition metals, we are interested in the development and application of high-throughput toxicity screening methods using

alternative animal species (e.g., invertebrates and fish). This work is applicable to the Tox21 initiative and consistent with the 3R's animal welfare paradigm.

Joshua L. Fuqua, Ph.D.

Instructor
Ph.D., University of Kentucky (2010)

Research Interests: Manufacture and development of clinically relevant proteins for the treatment and/or prevention of neurodegenerative and infectious diseases

Ramesh C. Gupta

Professor and Agnes Brown Duggan Chair of Oncological Research
Ph.D., Chemistry, University of Roorkee (1972)

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

David W. Hein, Ph.D.

Vice Provost for Academic Strategy, Peter K. Knoefel Endowed Chair of Pharmacology, Professor and Chairman of the Department of Pharmacology and Toxicology.
Ph.D., Pharmacology, University of Michigan (1982)

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

Joshua L. Hood, MD, PhD

Assistant Professor
Ph.D., Microbiology, University of Kentucky (2004)
M.D., University of Kentucky (2006)

Research Interests: Translational design and implementation of biology inspired nanomedicine supported by biologic nanovesicle (exosome) investigations. Exosome function and nanocarrier properties in the context of tumor angiogenesis and pre-metastatic niche formation are explored with a specific focus on melanoma. Derivative projects include development of exosome based biomarkers for disease and nanomedicines to combat pathogenic exosomes and similarly structured viruses.

Y. James Kang, PhD

Professor
Ph.D. Cell Biology and Zoology, Iowa State University (1989)

Research Interests: Molecular and cardiac toxicology; transgenic and knock-out animal models to study oxidative injury and antioxident systems in the heart; biological functions and toxicological significance of metallothionein and glutathione in vivo.

La Creis R. Kidd, Ph.D., M.P.H.

Associate Professor and Our Highest Potential Endowed Chair in Cancer Research
Ph.D., Toxicology, Massachusetts Institute of Technology (1997)
M.P.H., Epidemiology and Biostatistics, Johns Hopkins University (2001)

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

Joseph Calvin Kouokam, Ph.D.

Instructor
Ph.D. (Dr. rer. nat), University of Saarland, Saarbrucken, Germany (2002)

Research Interests: Efficacy and safety of plant produced lectins in the treatment of infectious diseases and cancer.

Igor S, Lukashevich, M.d., Ph.D., D.Sc.

Professor
M.D., Minsk Medical Institute, Belaris (1973)
Ph.D., Institute of Virology, Academy of Medical Science, Moscow Russia (1976)
D.Sc., Institute of Virology, Academy of Medical Science, Moscow Russia (1987)

Research Interests: Novel vaccine technology (virus-like-particle vectors; reasserted vaccines, infectious DNA vaccination); molecular biology and pathogenesis of viral hemorrhagic fevers.

Nobuyuki Matoba, Ph.D.

Associate Professor
Ph.D., Applied Life Sciences, Kyoto University, Japan (2001)

Research Interests: Development of vaccines and antivirials; mucosal immune response to foreign substances; plant biotechnology for human health.

Kenneth E. Palmer, Ph.D.

Professor; Helmsley Chair in Pharmaceutical Plant-based Research; Executive Director, Owensboro Cancer Research Program
Ph.D., Microbiology, University of Cape Town (1997)

Research Interests: Development of vaccines and antiviral proteins to prevent and treat viral diseases that predispose people to development of cancer.

William M. Pierce, Jr., Ph.D.
Professor and Executive Vice President for Research and Innovation
Ph.D., Pharmacology and Toxicology, University of Louisville (1981)

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

Leah J. Siskind, Ph.D.
Associate Professor
Ph.D., Biology, University of Maryland (2003)
Research Interests: Role of sphingolipids in regulating cellular processes such as apoptosis, necrosis, proliferation, and inflammation in the context of disease states; Design of drugs to re-balance sphingolipid metabolism and improve disease outcomes.

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

Research Interests: 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.
Professor, Vice Chair for Graduate Education, Associate Dean for Research
Ph.D., Molecular Biology and Pathology, Albany Medical college/Union University (1980)

Research Interests: Molecular biology and molecular genetic DNA damage and repair in humans; mechanisms of chemoresistance; arsenic toxicity and cell cycle disruption.

John P. Wise, Sr., Ph.D.
Professor
Ph.D., Pharmacology, The George Washington University (1994)

Research Interests: In my laboratory we seek to understand how environmental chemicals cause a normal cell to become a tumor cell. We study how these chemicals damage DNA and impact the DNA damage response. We consider how chemical-induced autophagy inhibition, loss of DNA repair and interference with mitosis cause centrosome amplification and chromosome instability as key outcomes in the

carcinogenic process. We focus on humans, but we also work across wildlife species (e.g. whales, sea turtles, and alligators) considering toxicology in a "One" environmental health perspective. We also work on how cells respond differently in space. Students in my lab have both a laboratory component and a field research component to their projects.

Sandra S. Wise
Assistant Professor
Ph.D., Molecular Biology and Biochemistry, University of Maine (2013)

Research Interests: Metal toxicology and carcinogenesis; molecular mechanisms for chromosome instability, DNA repair mechanisms and cell death resistance.

FACULTY WITH SECONDARY APPOINTMENTS

Shirish Barve, Ph.D.
Professor of Medicine
Ph.D., Molecular Pathogenesis, University of Kentucky (1990)

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

Levi J. Beverly, Ph.D.
Assistant Professor, Department of Medicine
Ph.D., Molecular Genetics, Biochemistry and Microbiology, University of Cincinnati (2007)

Research Interests: Regulation of anti-apoptotic proteins in cancer progression and treatment.

Aruni Bhatnagar, Ph.D., FAHA
Smith and Lucille Gibson Chair and Professor, Department of Medicine;
Director, Diabetes and Obesity Center
Ph.D., Kanpur University, India (1985)

Research Interests: Cardiovascular toxicology; oxidative mechanisms of cardiovascular disease; lipid peroxidation in atherosclerosis; gene expression; secondary complications of diabetes.

Michael E. Brier, Ph.D.
Professor, Department of Medicine

Ph.D., Industrial and Physical Pharmacy, Purdue University (1986)

Research Interests: Clinical pharmacokinetics/dynamics; Drug dosing in renal failure.

Jian Cai, Ph.D.
Assistant Professor of Medicine
Ph.D., Pharmacology and Toxicology, University of Louisville (1999)

Research Interests: 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.

Lu Cai, M.D., Ph.D.
Professor, Department of Pediatrics, Director of Pediatric Research Institute
M.D., Norman Bethune University of Medical Sciences (1983)
Ph.D., Radiation Biology/Oncology, Norman Bethune University of Medical Sciences (1987)

Research Interests: Diabetic cardiomyopathy and nephropathy

Matthew C. Cave, M.D.
Associate Professor, Department of Medicine
M.D., University of Kentucky (2001)

Research Interests: Steatohepatitis and liver cancer related to environmental and occupational chemical exposures; Complementary and alternative medicine in liver disease; Alcoholic and nonalcoholic fatty liver disease; Treatment of Hepatitis C.

Jason A. Chesney, M.D., Ph.D.
Professor and Brinkley Chair in Lung Cancer Research, Department of Medicine
Ph.D., Biomedical Sciences/Immunology, University of Minnesota (1997)
M.D., University of Minnesota (1998)

Research Interests: Novel regulators of cancer cell metabolism; identification of emerging viruses and the development of immune-based therapies against widely metastatic cancers.

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

Research Interests: Environmental cardiology; cardiovascular toxicology.

Albert R. Cunningham, Ph.D.

Associate Professor, Department of Medicine
Ph.D., Environmental and Occupational Health, University of Pittsburgh (1998)

Research Interests: Structure-Activity Relationship Modeling: Carcinogens, Chemotherapeutics, and Molecular Targets

Chendil Damodaran, Ph.D.

Associate Professor, Department of Urology
Ph.D., Environmental Toxicology (Cancer Biology), University of Madras (1984).

Research Interests: Identifying novel therapeutic compounds of natural origin that possess anti proliferative properties in prostate cancer cells, both androgen-dependent and – independent.

John W. Eaton, Ph.D.

Professor of Medicine and James Graham Brown Endowed Chair of Cancer Biology
Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969)
M.D.*hc*, University of Linkoping, Sweden, 2001

Research Interests: Biological oxidation/reduction reactions with special emphasis on inflammatory diseases and neoplasia.

Ayman El-Baz, Ph.D.

Associate Professor and Chair of Bioengineering
Ph.D., Electrical and Computer Engineering, University of Louisville (2006)

Research Interests: Dr, El-Baz directs UofL's BioImaging Laboratory. The primary focal point of the BioImaging Lab is to develop and implement innovative and ground-breaking techniques for use in image-guided surgeries, and the creation of non-invasive image-based diagnostic systems, which can help to revolutionize the early diagnosis of numerous diseases and brain disorders.

Paul N. Epstein, Ph.D.

Professor, Department of Pediatrics
Carol B. McFerran Chair in Pediatric Diabetes Research
Ph.D., Pharmacology, Baylor College of Medicine (1981)

Research Interests: Molecular mechanisms of diabetogenesis. The use of transgenic animals to study genetics and molecular mechanisms in vivo.

Wenke Feng, Ph.D.

Associate Professor, Department of Medicine

Ph.D, Biochem/Biotech, University for Bodenkultur (1998)

Research Interests: Mechanisms of alcoholic liver disease; Mechanisms of nonalcoholic steatohepatitis; Tissue hypoxia and diabetic complications.

Herman B. Frieboes, Ph.D.

Assistant Professor, Department of Bioengineering
Ph.D., Biomedical Engineering, University of California, Irvine (2006)

Research Interests: Develop and apply realistic, predictive biocomputational models integrated with clinical and laboratory data to study cancer growth and treatment; design of patient-specific therapies; and design of multiscale biocomputational models to describe the complex interaction between cancer treatment and the immune system.

Lelia Gobejishvili, Ph.D.

Assistant Professor, Department of Medicine
Ph.D. Physiology. I. Beritashvili Institute of Physiology, Georgian Academy of Sciences (1995)

Research Interests: Alcohol induced changes in innate immunity; alcohol mediated epigenetic changes of pro-inflammatory cytokines; role of phosphodiesterases in priming of monocytes and development of liver injury/fibrosis.

Evelyne Gozal, Ph.D.

Associate Professor of Pediatrics
Ph.D., Toxicology, University of Southern California (1997)

Research Interests: 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.

Yiru Guo, M.D.

Professor, Department of Medicine
M.D., Xinjiang Medical University (1982)

Research Interests: Cardio-thoracic and vascular surgery, physiology, and pharmacology. Research focuses on: (i) elucidating the mechanisms of ischemic-pharmacologic- and exercise-induced preconditioning by using the ischemia/reperfusion model in genetically engineered animals, (ii) studying protection of ischemic myocardium by using gene and/or cell therapy, and (iii) elucidating adaptations to ischemia/reperfusion injury in the aging heart.

Michal Hetman, M.D., Ph.D.

Professor of Neurological Surgery
Endowed Professor of Molecular Signaling
M.D., Warsaw Medical School (1994)
Ph.D., Experimental and Clinical Medicine, Polish Academy of Sciences (1997)

Research Interests: Role of signaling kinases in neuronal repair and demise.

Bradford G. Hill, Ph.D.

Assistant Professor of Medicine
Ph.D., Biochemistry, University of Louisville (2007)

Research Interests: The broad theme of my research entails understanding how changes in metabolism contribute to cardio-metabolic health and disease. This involves the critical examination of glycolysis, mitochondria, and other pathways of intermediary metabolism and the development of causal relationships between metabolic defects or signatures and (patho)physiology.

Kyung Hong, Ph.D.

Assistant Professor, Department of Medicine
Ph.D., Environmental Medicine/Toxicology, University of Rochester, School of Medicine and Dentistry (2003)

Research Interests: Cell therapy for ischemic cardiomyopathy; cardiac regeneration/repair; cardiac stromal cell biology.

A. Bennett Jenson, M.D.

Professor and Senior Scientist, James Brown Cancer Center
M.D., Baylor College of Medicine (1966)

Research Interests: Translational immunology: humoral responses to prevent infection by papillomavirus.

Steven P. Jones, Ph.D.

Professor of Medicine
Ph.D., Physiology, Louisiana State University Health Sciences Center, Shreveport (2002)

Research Interests: Metabolic signaling in the cardiovascular system.

Swati Joshi-Barve, Ph.D.

Assistant Professor of Medicine
Ph.D., Biochemistry, University of Kentucky (1992)

Research Interests: Mechanisms of Steatohepatitis (nonalcoholic and alcoholic fatty liver disease); Mechanisms of Alcohol-induced Immune Dysfunction; Mechanisms of Hepatocellular Carcinoma.

Bradley B. Keller, M.D.

Professor of Pediatrics and Bioengineering
Kosair Charities Chair and Chief, Division of Pediatric Heart Research
M.D., Pennsylvania State University (1985)

Research Interests: Cardiovascular bioengineering: Development of 3D tissues for heart repair and regeneration.

Irina Kirpich, Ph.D., M.P.H.

Assistant Professor of Medicine
Ph.D., Biology and Physiology, Pomor State University (1997)
M.P.H, University of Louisville (2014)

Research Interests: Gut-liver interactions in alcoholic and non-alcoholic liver disease; alcohol and dietary fat mediated intestinal and liver injury; gut barrier, microbiome, probiotics; epigenetics and hepatic steatosis; Oxidized Metabolites of Linoleic Acid (OXLAMs).

Donghan Lee, Ph.D.

Associate Professor of Medicine
James Graham Brown Chair of Structural Biology
Ph.D., Biophysics, Swiss Federal Institute of Technology (2003)

Research Interests: Molecular recognition between biomolecules such as protein-protein, protein-DNA, protein-carbohydrate, protein-ligands; design NMR experiments and development of associated theory.

Chi Li, Ph.D.

Associate Professor of Medicine
Ph.D., Molecular Biology, Columbia University (1998)

Research Interests: Mechanisms of apoptotic pathways initiated from different intracellular organelles. Molecular and cellular mechanisms that affect inflammation and immunity.

Robert C.G. Martin, II, M.D., Ph.D.

Professor and Sam and Lolita Weakley Endowed Chair in Surgical Oncology
M.D., University of Louisville (1995)
Ph.D., Pharmacology & Toxicology, University of Louisville (2008)

Research Interests: Genetic predisposition to cancer.

Craig J. McClain
Professor of Medicine
M.D., University of Tennessee-Memphis (1972)

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

Kelly M. McMasters, M.D., Ph.D.
Professor and Chair of Surgical Oncology
Ph.D., Cell and Developmental Biology, Rutgers University (1988)
M.D., University of Medicine and Dentistry of New Jersey (1989)

Research Interests: Melanoma therapies-Adenovirus-mediated gene therapy; Radio guided surgery for breast, melanoma, and parathyroid tumors as well as gastrointestinal, hepatic, and pancreaticobiliary tumors

Lacey R. McNally, Ph.D.
Assistant Professor of Medicine
Ph.D., Veterinary Medical Science, Louisiana State University (2004)

Research Interests: Metastasis suppressors, such as KISS1, as a method for preventing and treating metastatic pancreatic and ovarian cancers; Mechanisms of chemotherapy resistance and alternative treatment for macro-metastasis and recurrence in ovarian and prostate cancers; Mechanisms involved in organ specific metastasis of pancreatic, prostate, and breast cancers.

Michael L. Merchant, Ph.D.
Associate Professor of Medicine
Ph.D., Chemistry, University of Arkansas (1994)

Research Interests: Translational research - the discovery and understanding of biomarkers of renal disease; Basic Research - Mechanisms of renal function decline and fibrosis; Basic Research - Mechanisms for the transition from acute to chronic disease.

Donald M. Miller, M.D., Ph.D.
Professor of Medicine
Chief, Division of Medical Oncology and Hematology
Foundation Chair and Director, James Graham Brown Cancer Center
M.D., Duke University School of Medicine (1973)
Ph.D., Duke University School of Medicine (1972)

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

Chin K. Ng, Ph.D.
Associate Professor of Radiology
Ph.D., Medical Physics, University of Wisconsin (1989)

Research Interests: Validating and characterizing novel imaging probes for multimodality imaging (MRI, PET, SPECT, CT and Optical); Exploring approaches for early detection and monitoring of treatment efficacy of multiple diseases such as infectious diseases, cancer, spinal cord injury, brain diseases, diabetes and heart diseases; Developing thermal laser ablation devices for treating spinal metastases in a MRI environment.

Matthew A. Nystoriak, Ph.D.
Assistant Professor of Medicine
Ph.D., Pharmacology, University of Vermont (2010)

Research Interests: Regulation of vascular calcium signaling and blood flow in diabetes.

Martin G. O'Toole, Ph.D.
Assistant Professor of Bioengineering
Ph.D., Chemistry, University of Louisville (2008)

Research Interests: Development of stimulus-responsive biomaterials for use in medical applications of drug-delivery, wound healing, and tissue engineering. Development of stimulus-responsive biomaterials of clinical relevance for diagnosing and treating various diseases.

Timothy E. O'Toole, Ph.D.
Assistant Professor of Medicine
Ph.D. Biological Chemistry, University of Michigan (1987)

Research Interests: Function and regulation of the endothelium in various disease states; Role of miRNA in endothelial regulation towards understanding how diabetic conditions and pollutant exposure affects endothelial miRNA content and the consequent changes in protein expression levels and cellular function.

M. Michele Pisano, Ph.D.
Professor of Surgical and Hospital Dentistry
Ph.D., Anatomy, Thomas Jefferson University (1985)

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

Shesh N. Rai, Ph.D.

Professor of Bioinformatics and Biostatistics
Wendell Cherry Chair in Clinical Trial Research
Ph.D., Statistics, University of Waterloo (1993)

Research Interests: Clinical Trials, Survival Analysis, Bioinformatics, Mixed Effects Model, Sample Survey, Quantitative Risk Assessment

Craig S. Roberts, M.D.

Professor and Chair of Department of Orthopaedic Surgery
M.D., New York University (1986)

Research Interests: Orthopaedic trauma, fractures and their complications and outcomes.

George C. Rodgers, M.D., Ph.D.

Professor of Pediatrics
Humana Chair of International Pediatrics
Ph.D., Organic Chemistry, Yale University (1964)
M.D., State University of New York (1975)

Research Interests: Toxicokinetics in drug overdoses and pharmacokinetics in pediatric disease states.

Jesse Roman, M.D.

Professor and Chair of Medicine
M.D., University of Puerto Rico School of Medicine (1983)

Research Interests: Extracellular matrices and integrin receptors in lung development, injury, and repair; Role of nicotinic acetylcholine receptors and control of matrix expression in lung; Lung tissue remodeling in tobacco- and ethanol-related lung disorders; Control of lung carcinoma growth by extracellular matrices.

David A. Scott, Ph.D.

Professor of Oral Immunology & Infectious Diseases
Ph.D., Microbiology and Immunology, McGill University (1997)

Research Interests: Tobacco-induced alterations to microbial-associated molecular patterns of Porphyromonas gingivalis; Tobacco-induced alterations to innate-pathogen

interactions; Tobacco alkaloid amplification of endogenous anti-inflammatory pathways; Identification of gingivitis- and periodontitis-specific infrared molecular signatures.

Sanjay Srivastava, Ph.D.
Professor of Medicine
Ph.D., Chemistry, University of Lucknow (1993)

Research Interests: Delineating the mechanisms by which environmental pollutants cause endothelial activation, vascular inflammation, insulin resistance and atherosclerosis.

Jill M. Steinbach-Rankins, Ph.D.
Assistant Professor of Bioengineering
Ph.D., Bioengineering, Arizona State University (2009)

Research Interests: Design and development of drug and gene delivery vehicles for physiologically difficult-to-deliver-to microenvironments.

Janice E. Sullivan, M.D.
Professor of Pediatrics
M.D., University of Minnesota (1988)

Research Interests: Clinical pharmacology with a focus on developmental pharmacokinetics and pharmacodynamics.

Yi Tan, Ph.D.
Assistant Professor of Pediatrics
Ph.D., Biomedical Engineering, Chongqing University (2004)

Research Interests: Signaling pathways and therapeutic strategies in diabetic complications including cardiomyopathy, cardiac insulin resistance, stem cell mobilization and ischemic angiogenesis.

Walter H. Watson, Ph.D.
Assistant Professor of Medicine
Ph.D., Toxicology, University of Kentucky (1999)

Research Interests: Oxidative stress and redox signaling; Mechanistic toxicology; Alcoholic and nonalcoholic fatty liver disease.

Marcin Wysoczynski, Ph.D.
Assistant Professor of Medicine
Ph.D. Pomeranian Medical University (2009)

Research Interests: Innate immunity in myocardial repair.

Jun Yan, M.D., Ph.D.
Professor of Medicine and Endowed Chair in Translational Research
M.D., Jiangsu University School of Medicine (1985)
Ph.D., Immunology, Shanghai Jiaotong University School of Medicine (1997)

Research Interests: Immunotherapy and vaccines for treatment of cancer and infectious diseases.

Hong Ye, Ph.D.
Associate Professor of Medicine
Ph.D., Biophysics, Keele University (1998)

Research Interests: 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.
Professor of Medicine
Ph.D., Biochemistry, Philipps-University, Marburg, Germany (1980)

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

Xiang Zhang, Ph.D.
Professor of Chemistry
Ph.D., Bioanalytical Chemistry, Purdue University (2001)

Research Interests: Molecular systems biology, by exploiting practical and efficient high throughput technologies for analyses of complex mixtures to facilitate the development of preventive, predictive and personalized medicine for the promotion of health and wellness.

FACULTY WITH EMERITUS APPOINTMENTS

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

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

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

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

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

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

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

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

Williams, W. Michael, Professor Emeritus, Ph.D., University of Louisville (1970); M.D., University of Louisville (1974).

FACULTY WITH ADJUNCT POSITIONS

James A. Blank, Adjunct Associate Professor of Pharmacology and Toxicology; PhD, Pharmacology and Toxicology, University of Louisville School of Medicine (1985)

Osama El-Tawil, Adjunct Professor of Pharmacology and Toxicology, PhD, Toxicology, University of Medicine and Dentistry of New Jersey/Cairo University (1997)

Adrian J. Fretland, Adjunct Assistant Professor of Pharmacology and Toxicology; PhD, Pharmacology and Toxicology, University of Louisville School of Medicine (2000)

John C. Lipscomb, Adjunct Associate Professor of Pharmacology and Toxicology; PhD, Pharmacology and Toxicology, University of Arkansas for Medical Sciences (1991)

Kevyn E. Merten, Adjunct Assistant Professor of Pharmacology and Toxicology, PhD, Pharmacology and Toxicology, University of Louisville School of Medicine (2007)

Kristin J. Metry-Baldauf, Adjunct Assistant Professor of Pharmacology and Toxicology; PhD, Pharmacology and Toxicology, University of Louisville School of Medicine (2007)

Arnold J. Schecter, Adjunct Professor of Pharmacology and Toxicology, MD, Howard University Medical School (1962); MPH, Columbia University (1975)

Irina Tcherepanova, Adjunct Professor of Pharmacology and Toxicology; PhD, Molecular Pharmacology, Albert Einstein College of Medicine (1996)

Joshua M. Thornburg, Adjunct Assistant Professor of Pharmacology and Toxicology, PhD, Pharmacology and Toxicology, University of Louisville School of Medicine (2007)

Eric M. Vela, Adjunct Assistant Professor of Pharmacology and Toxicology; PhD, Virology and Gene Therapy, University of Texas Health Sciences Center at Houston (2005)

Chad Wilkerson, Adjunct Assistant Professor of Pharmacology and Toxicology, PhD, Biochemistry & Molecular Biology, Louisiana State University Health Sciences Center (2002)

OFFICE STAFF

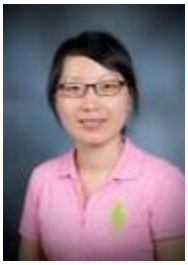
Blair Cade	Department Manager & Exec. Asst. to Vice Provost
Florence Su	Program Coordinator, Sr.
Hannah Bitter	Administrative Assistant (temporary part-time)
Marion McClain	Research Facilitator (Primary appointment in Department of Medicine; Part time in Department of Pharmacology and Toxicology)
Shiloh Tatum	Unit Business Manager, Intermediate (Primary appointment in Department of Medicine; Part time in Pharmacology and Toxicology)

2016 NEW GRADUATE STUDENT CLASS

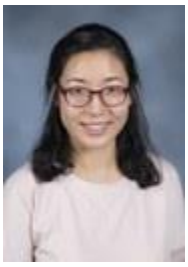
Liya Chen (Leah)
Bachelor of Clinical Medicine, Wenzhou Medical University

Matthew Dent
B.S., Molecular Biosciences and Biotechnology, Arizona State University
M.S., Plant Genetics and Crop Improvement, University of East Anglia

Jian Jin (Joseph)
Bachelor of Clinical Medicine, Wenzhou Medical University
Masters in Endocrinology, Wenzhou Medical University
Attending Physician (Endocrinology), The Second Affiliated Hospital, Wenzhou Medical University



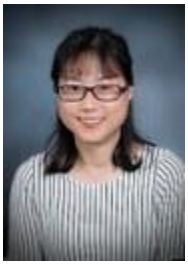
Lexiao Jin (Monica)
Bachelor of Clinical Medicine, Wenzhou Medical University
Masters in Anesthesiology, Wenzhou Medical University
Attending Physician (Anesthesiology), The Second Affiliated Hospital, Wenzhou Medical University



Christine Kim
B.S., Biology, Purdue University
M.S., Toxicology, University of Kentucky

Fengyuan Li (Linda)
B.S., Biotechnology, Northwest University
M.S., Biochemistry and Molecular Biology, Northwest University

Yihong Li (Summer)
B.S., Biological Engineering, Qiqihar University
M.S., Microbiology, Anhui University
M.S., Microbiology, Institute of Microbiology, Chinese Academy of Sciences
Research Associate, Wenzhou Institute of Biomaterials & Engineering, Wenzhou Medical

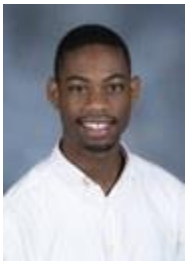


Haiyan Lu (Haley)
Bachelor of Clinical Medicine, Wenzhou Medical University
Masters in Pediatrics, Wenzhou Medical University
Pediatrician, The Second Affiliated Hospital and Yuying Children's Hospital, Wenzhou Medical University

Mohamed Yehia Mahmoud
Bachelor of Veterinary Medicine, Cairo University
Master of Toxicology, Cairo University

Shuhan Meng
Bachelor of Medicine, Jilin University
Master of Medicine, Jilin University

Hunter Miller
B.S., Biochemistry, Murray State University



Andre Richardson
B.S., Toxicology Biology, Nazareth College of Rochester

Joshua Royal
B.S., Biology, Western Kentucky University

Desmond Stewart
B.S., Biochemistry, Xavier University of Louisiana

Jennifer Toyoda
B.S., Biology, University of Kentucky

Aaron Whitt
B.S., Biological Sciences, Morehead State University

Weiyang Ying (Wayne)
Bachelor in Anesthesiology of Clinical Medicine, Wenzhou Medical University
Postgraduate Student in Anesthesiology, Scientific Research Center, The Second Affiliated Hospital and Yuying Children's Hospital

Yuxuan Zheng
Bachelor of Clinical Medicine, Jilin University
Master of Internal Medicine, Jilin University

Graduate Students

Al Hassan, Kyakulaga
Al-Eryani, Laila
Avila, Diana
Barve, Aditya
Bushau, Adrienne
Carlisle, Samantha
Chen, Liya
Chen, Wei-Yang
Dent, Mathhew
Dolin, Christine
Dupre, Tess
Dwenger, Marc
El-Baz, Nagwa
Finch, Jordan
Gosney, Julie
Greenwell, John Caleb
Grewal, Jaspreet
Hallgren, Justin L.
Hoffman, Mason
Hollis, Elizabeth
Hudson, Shanice
Jackson, Nicole
Jin, Lexiao
Jin, Jian
Jones, Dominique
Karukonda, Divya
Kim, Christine
Kurlawala, Zimple
Lang, Anna
Laun, Alysa
Li, Yihong
Li, Fengyuan
Lin, Qian
Lu, Haiyan
Mahmoud, Mohamed Yehia
McAllister, Ryan
Meng, Shuhan

Miller, Hunter
Mudd, Ashley
Neely, Aaron
Pandit, Harshul
Perez, Adam
Poole, Lauren
Richardson, Andre
Royal, Joshua
Rush, Jamie
Saforo, Doug
Shao, Tuo
Sharp, Cierra
Shi, Hongxue 时鸿雪
Speer, Rachel
Stepp, Marcus
Stewart, Desmond
Toyoda, Jennifer
Tyo, Kevin
Vicary, Glenn W.
Wechman, Stephen
Whitt, Aaron
Ying, Weiyang
Young, Jamie
Zheng, Yuxuan

2016 GRADUATES

Gretchen E. Holz	M.S.	Igor S. Lukashevich, M.D., Ph.D., D.Sc.	Proinflammatory cytokines promote viral replication and cell cycle mediators in arenavirus-induced hepatitis
Glenn W. Vicary	Ph.D.	Jesse Roman, M.D.	The role of nicotine, α7 nicotinic acetylcholine receptors and extracellular matrix remodeling in pulmonary fibrosis
Aditya S. Barve	M.S.	Levi J. Beverly, Ph.D.	Establishing a clinically relevant mouse model of human AML to test novel transmethylation inhibitors
Kevin M. Tyo	M.S.	Jill Steinbach-Rankins, Ph.D.	Multipurpose tenofovir disoproxil fumarate electrospun fibers for the prevention of HIV-1 and HSV-2 infections
Justin L. Hallgren	Ph.D.	Michal Hetman, M.D., Ph.D.	The role of the nucleolus in neurodegeneration
Anna L. Lang	M.S.	Juliane I. Beier, Ph.D.	Vinyl chloride-diet interactions in liver disease: potential roles of autophagy and energy management
Wei-Yang (Jeremy) Chen	Ph.D.	Swati Joshi-Barve, Ph.D. & Craig McClain, M.D.	Acrolein is a critical mediator of alcohol-induced liver and intestinal injury in alcoholic liver disease

Jordan B. Finch	M.S.	Daniel J. Conklin, Ph.D.	Air pollution, pulmonary oxidative stress, and the endothelin system in the development of cardiovascular injury
Julie A. Gosney	M.S.	Brian P. Ceresa, Ph.D.	Isolation of EGFR-containing early endosomes
Cierra N. Sharp	M.S.	Leah J. Siskind, Ph.D.	Developing a more clinically-relevant mouse model of cisplatin-induced nephrotoxicity
Dominique Z. Jones	Ph.D.	La Creis R. Kidd, Ph.D. & Geoffrey J. Clark, Ph.D.	MicroRNA-186 and metastatic prostate cancer
Diana V. Avila	Ph.D.	Shirish Barve, Ph.D. & Leila Gobejishvili, Ph.D.	Role of phosphodiesterase-4 in alcohol-induced organ injury
Aaron M. Neely	M.S.	Chi Li, Ph.D.	Modulation of cell death signaling and cell proliferation by the interaction of homoserine lactones and paraoxonase 2

FACULTY HONORS

Beier, J.

- AASLD Emerging Liver Scholar Award (mentee/mentor award with Lisanne Anders)
- Data presented on the cover of *Toxicological Sciences*: June 2016 151(2)
- President's Choice Award, AASLD 67th annual meeting, Boston, MA

Chen, Shao-yu

- Senior author on a poster awarded a junior investigator award from the Research Society on Alcoholism, RSA annual meeting, 2016, New Orleans, Louisiana.

Freedman, J.

- NIEHS Paper of the Month, October 2016

Hood, J.

- Selected through an internal competition to submit an application to the JGBCC molecular therapeutics CoBRE program cycle IV.
- Interviewed by TheScientist magazine for significant contributions to exosome research.
- NCI Cancer Education Program, Norbert J. Burzynski Award, 1st place (tie), Undergraduate Student Category, "Paracrine induction of macrophages by melanoma exosomes," Mary Ann Smith (4th year pre-med student, Mississippi State University, mentor: Joshua L. Hood), Research!Louisville, Louisville KY, October 14, 2016

Lukashevich, I

- Tenure Awarded

Siskind, L.

- Invited Speaker, Gordon Conference on Glycolipids and Sphingolipids, March 2016, Italy
- Chair, South Eastern Regional Lipid Conference, Nov.11-14th 2016, Cashiers, NC

Wise, J.

- 2015-2016 Education Award, Society of Toxicology
- 2015-2018 University Scholar, University of Louisville
- Coauthor on student posters selected for awards

STUDENT HONORS

Al-Eryani, Laila (States)

- R!L - Louisville Chapter-Women in Medicine and Science, 2nd place
- R!L - Doctoral Basic Science Graduate Student Award, First Place
- OVSOT – Best Poster Presentation of PhD students award 1st place
- First place Carcinogenesis Specialty Section Graduate Student travel award, Society of Toxicology (SOT) 2016
- Supplemental Training for Education Program (STEP) funding from the Society of Toxicology (SOT) (in May 2016) to attend a NIH/NCI molecular prevention summer course in Rockville, Maryland, Aug 1-5, 2016
- miRNA Biomarkers for Toxicology-Travel award 2016
- 9th Metal Toxicity and Carcinogenesis Conference, best graduate student poster, 1 of 5 unranked.
- Received NIEHS travel award to attend conference on endocrine disruptors

Carlisle, Samantha (Hein)

- Received the 1st place award in the oral presentation category "Health Sciences" at the 102nd annual meeting of the Kentucky Academy of Sciences
- Received NIH grant award for supplemental training.

Chen, Jeremy (McClain)

- Received Society of Toxicology travel award

Dolin, Christine (Arteel, G.)

- selected for a platform presentation, OVSOT student/postdoc meeting, Cincinnati, OH.
- received travel award from the UofL Graduate Student Council.

Dupre, Tess (Siskind)

- Received KC Huang Most Outstanding Graduate Student Graduate Student Award

Jones, Dominique (Kidd)

- School of Medicine Diversity Award.
- Graduate Dean's Citation at the 2016 UofL Graduation.
- American Society for Pharmacology and Experimental Therapeutics (ASPET), 2nd Place Delores C. Shockley Best Abstract Award.
- American Association for Cancer Research Careers (AACR), MICR Scholar in Cancer Research Travel Award.
- ASPET Underrepresented Graduate Student Travel Award.

Kurwala, Zimple (Beverly)

- Received iMD3 fellowship

Kyakulaga, Al Hassan (Gupta)

- Best Paper Award at Research!Louisville.

Lang, Anna (Arteel, J.)

- selected for podium presentation, OVSOT Summer Student Meeting, Cincinnati, OH.
- awarded 3rd place Graduate Student Poster Award at Research!Louisville.

Neely, Aaron (Li)

- Received an American Society for Cell Biology (ASCB) Travel Award to present his research at their annual meeting in San Francisco.

Poole, Lauren (Arteel, G.)

- Selected for a platform presentation, Ohio Valley Society of Toxicology Annual Meeting, Indianapolis, IN

Sharp, Cierra (Siskind)

- 2016, Ohio Valley Society of Toxicology (OVSOT): Givaudan Best PhD Student Platform Presentation Award
- 2016, American Society of Nephrology, Kidney Star

Saforo, Doug (Siskind)

- Keystone Symposia: Cancer Pathophysiology: Integrating the Host and Tumor Environments, Breckenridge, CO, "Future of Science Fund" Scholarship
- Outstanding Graduate/Professional Student Award (2015-2016), University of Louisville
- American Physician Scientists Association Annual Meeting Underrepresented Trainee Travel Award (2016), Chicago, IL.

Shi, Hongxue (Cave)

- Received NIEHS travel award to attend conference on endocrine disruptors

Yuan, Fuqiang Ph.D. (Chen)

- Received Junior Investigator Award from the Research Society on Alcoholism.

PHARMACOLOGY & TOXICOLOGY PUBLICATIONS
Faculty with Primary Appointments and Students/Post-Doctoral Fellows

1. Albayati, Z. A., M. Sunkara, S. M. Schmidt-Malan, M. J. Karau, A. J. Morris, J. M. Steckelberg, R. Patel, P. J. Breen, M. S. Smeltzer, K. G. Taylor, K. E. Merten, W. M. Pierce, and P. A. Crooks. 2015. "Novel Bone-Targeting Agent for Enhanced Delivery of Vancomycin to Bone." *Antimicrob Agents Chemother* 60 (3):1865-8. doi: 10.1128/AAC.01609-15.

2. Aloway A, Kumar A, AS Laun, and Song ZH. 2016. "Cannabinoid Regulation of Intraocular Pressure: human and animal studies, molecular and cellular mechanisms." In *Handbook of Cannabis and Related Pathologies: Biology, Pharmacology, Diagnosis, and Treatment*, edited by Victor R Preedy, 864-875. Elsevier.

3. Anders, L. C., A. L. Lang, A. Anwar-Mohamed, A. N. Douglas, A. M. Bushau, K. C. Falkner, B. G. Hill, N. L. Warner, G. E. Arteel, M. Cave, C. J. McClain, and J. I. Beier. 2016. "Vinyl Chloride Metabolites Potentiate Inflammatory Liver Injury Caused by LPS in Mice." *Toxicol Sci* 151 (2):312-23. doi: 10.1093/toxsci/kfw045.

4. Anders, L. C., H. Yeo, B. R. Kaelin, A. L. Lang, A. M. Bushau, A. N. Douglas, M. Cave, G. E. Arteel, C. J. McClain, and J. I. Beier. 2016. "Role of dietary fatty acids in liver injury caused by vinyl chloride metabolites in mice." *Toxicol Appl Pharmacol* 311:34-41. doi: 10.1016/j.taap.2016.09.026.

5. Antimisiaris, D. 2016. *Approaches to Geriatric Pharmacology for Pharmacists: A Primer*: S.C.

6. Aqil, F., and R. C. Gupta. 2016. "Controlled Delivery of Chemopreventive Agents by Polymeric Implants." *Methods Mol Biol* 1379:1-11. doi: 10.1007/978-1-4939-3191-0_1.

7. Aqil, F., J. Jeyabalan, H. Kausar, R. Munagala, I. P. Singh, and R. Gupta. 2016. "Lung cancer inhibitory activity of dietary berries and berry polyphenolics." *Journal of Berry Research* 6 (2):105-114. doi: 10.3233/Jbr-160120.

8. Aqil, F., J. Jeyabalan, R. Munagala, I. P. Singh, and R. C. Gupta. 2016. "Prevention of hormonal breast cancer by dietary jamun." *Mol Nutr Food Res* 60 (6):1470-81. doi: 10.1002/mnfr.201600013.

9. Aqil, F., H. Kausar, A. K. Agrawal, J. Jeyabalan, A. H. Kyakulaga, R. Munagala, and R. Gupta. 2016. "Exosomal formulation enhances therapeutic response of celastrol against lung cancer." *Exp Mol Pathol* 101 (1):12-21. doi: 10.1016/j.yexmp.2016.05.013.

10. Arteel, G. E. 2016. "Leveraging oxidative stress questions in vivo: Implications and limitations." *Arch Biochem Biophys* 595:40-5. doi: 10.1016/j.abb.2015.11.009.

11. Baldauf, K. J., J. M. Royal, J. C. Kouokam, B. Haribabu, V. R. Jala, K. Yaddanapudi, K. T. Hamorsky, G. W. Dryden, and N. Matoba. 2016. "Oral administration of a recombinant cholera toxin B subunit promotes mucosal healing in the colon." *Mucosal Immunol*. doi: 10.1038/mi.2016.95.

12. Barchowsky, A, and J.C. States. 2016. "Arsenic induced cardiovascular disease." In

Arsenic: Exposure Sources, Health Risks and Mechanisms of Toxicity, edited by J. C. States. New York: Wiley.

13. Barnoud, T., H. Donninger, and G. J. Clark. 2016. "Ras Regulates Rb via NORE1A." *J Biol Chem* 291 (6):3114-23. doi: 10.1074/jbc.M115.697557.

14. Barton, C., J. C. Kouokam, H. Hurst, and K. E. Palmer. 2016. "Pharmacokinetics of the Antiviral Lectin Griffithsin Administered by Different Routes Indicates Multiple Potential Uses." *Viruses* 8 (12). doi: 10.3390/v8120331.

15. Barton, C., J. C. Kouokam, H. Hurst, and K. E. Palmer. 2016. "Pharmacokinetics of the Antiviral Lectin Griffithsin Administered by Different Routes Indicates Multiple Potential Uses." *Viruses* 8 (12). doi: 10.3390/v8120331.

16. Behl, M., J. R. Rice, M. V. Smith, C. A. Co, M. F. Bridge, J. H. Hsieh, J. H. Freedman, and W. A. Boyd. 2016. "Editor's Highlight: Comparative Toxicity of Organophosphate Flame Retardants and Polybrominated Diphenyl Ethers to Caenorhabditis elegans." *Toxicol Sci* 154 (2):241-252. doi: 10.1093/toxsci/kfw162.

17. Beier, J. I., L. Guo, J. D. Ritzenthaler, S. Joshi-Barve, J. Roman, and G. E. Arteel. 2016. "Fibrin-mediated integrin signaling plays a critical role in hepatic regeneration after partial hepatectomy in mice." *Ann Hepatol* 15 (5):762-72. doi: 10.5604/16652681.1212587.

18. Boyd, W. A., M. V. Smith, C. A. Co, J. R. Pirone, J. R. Rice, K. R. Shockley, and J. H. Freedman. 2016. "Developmental Effects of the ToxCast Phase I and Phase II Chemicals in Caenorhabditis elegans and Corresponding Responses in Zebrafish, Rats, and Rabbits." *Environ Health Perspect* 124 (5):586-93. doi: 10.1289/ehp.1409645.

19. Browning, C. L., Q. Qin, D. F. Kelly, R. Prakash, F. Vanoli, M. Jasin, and J. P. Wise, Sr. 2016. "Prolonged Particulate Hexavalent Chromium Exposure Suppresses Homologous Recombination Repair in Human Lung Cells." *Toxicol Sci* 153 (1):70-8. doi: 10.1093/toxsci/kfw103.

20. Carlisle, S. M., P. J. Trainor, X. Yin, M. A. Doll, M. W. Stepp, J. C. States, X. Zhang, and D. W. Hein. 2016. "Untargeted polar metabolomics of transformed MDA-MB-231 breast cancer cells expressing varying levels of human arylamine N-acetyltransferase 1." *Metabolomics* 12 (7). doi: 10.1007/s11306-016-1056-z.

21. Cheng, X., J. Hou, J. Liu, X. Sun, Q. Sheng, P. Han, and Y. J. Kang. 2016. "Safety Evaluation of Sevoflurane as Anesthetic Agent in Mouse Model of Myocardial Ischemic Infarction." *Cardiovasc Toxicol*. doi: 10.1007/s12012-016-9368-9.

22. Donninger, H., T. Barnoud, and G. J. Clark. 2016. "NORE1A is a double barreled Ras senescence effector that activates p53 and Rb." *Cell Cycle* 15 (17):2263-4. doi: 10.1080/15384101.2016.1152431.

23. Donninger, H., and G. J. Clark. 2016. "Nore1a drives Ras to flick the P53 senescence switch." *Mol Cell Oncol* 3 (3):e1055050. doi: 10.1080/23723556.2015.1055050.

24. Donninger, H., M. L. Schmidt, J. Mezzanotte, T. Barnoud, and G. J. Clark. 2016. "Ras signaling through RASSF proteins." *Semin Cell Dev Biol* 58:86-95. doi:

10.1016/j.semcdb.2016.06.007.

25. Dupre, T. V., M. A. Doll, P. P. Shah, C. N. Sharp, A. Kiefer, M. T. Scherzer, K. Saurabh, D. Saforo, D. Siow, L. Casson, G. E. Arteel, A. B. Jenson, J. Megyesi, R. G. Schnellmann, L. J. Beverly, and L. J. Siskind. 2016. "Suramin protects from cisplatin-induced acute kidney injury." *Am J Physiol Renal Physiol* 310 (3):F248-58. doi: 10.1152/ajprenal.00433.2015.

26. Fujiuchi, N., N. Matoba, and R. Matsuda. 2016. "Environment Control to Improve Recombinant Protein Yields in Plants Based on Agrobacterium-Mediated Transient Gene Expression." *Front Bioeng Biotechnol* 4:23. doi: 10.3389/fbioe.2016.00023.

27. Fujiuchi, N., R. Matsuda, N. Matoba, and K. Fujiwara. 2016. "Removal of bacterial suspension water occupying the intercellular space of detached leaves after agroinfiltration improves the yield of recombinant hemagglutinin in a Nicotiana benthamiana transient gene expression system." *Biotechnol Bioeng* 113 (4):901-6. doi: 10.1002/bit.25854.

28. Gomez-Gutierrez, J. G., J. Nitz, R. Sharma, S. L. Wechman, E. Riedinger, E. Martinez-Jaramillo, H. Sam Zhou, and K. M. McMasters. 2016. "Combined therapy of oncolytic adenovirus and temozolomide enhances lung cancer virotherapy in vitro and in vivo." *Virology* 487:249-59. doi: 10.1016/j.virol.2015.10.019.

29. Grooms, T. N., H. R. Vuong, K. M. Tyo, D. A. Malik, L. B. Sims, C. P. Whittington, K. E. Palmer, N. Matoba, and J. M. Steinbach-Rankins. 2016. "Griffithsin-Modified Electrospun Fibers as a Delivery Scaffold To Prevent HIV Infection." *Antimicrob Agents Chemother* 60 (11):6518-6531. doi: 10.1128/AAC.00956-16.

30. Guardiola, J. J., J. I. Beier, K. C. Falkner, B. Wheeler, C. J. McClain, and M. Cave. 2016. "Occupational exposures at a polyvinyl chloride production facility are associated with significant changes to the plasma metabolome." *Toxicol Appl Pharmacol* 313:47-56. doi: 10.1016/j.taap.2016.10.001.

31. Hamorsky, K., and N. Matoba. 2016. "Facile Method for the Production of Recombinant Cholera Toxin B Subunit in E. coli." *Methods Mol Biol* 1404:511-8. doi: 10.1007/978-1-4939-3389-1_33.

32. Hardesty, J. E., B. Wahlang, K. C. Falkner, H. B. Clair, B. J. Clark, B. P. Ceresa, R. A. Prough, and M. C. Cave. 2016. "Polychlorinated Biphenyls Disrupt Hepatic Epidermal Growth Factor Receptor Signaling." *Xenobiotica*:1-40. doi: 10.1080/00498254.2016.1217572.

33. Hein, D. W., and C. R. Kidd. 2016. "Design and Success of a 21st Century Cancer Education Program at the University of Louisville." *J Cancer Educ*. doi: 10.1007/s13187-016-1083-5.

34. Holzberg, J. R., R. Jin, N. A. Le, T. R. Ziegler, E. M. Brunt, C. J. McClain, J. V. Konomi, G. E. Arteel, and M. B. Vos. 2016. "Plasminogen Activator Inhibitor-1 Predicts Quantity of Hepatic Steatosis Independent of Insulin Resistance and Body Weight." *J Pediatr Gastroenterol Nutr* 62 (6):819-23. doi: 10.1097/MPG.0000000000001096.

35. Hood, J. L. 2016. "The association of exosomes with lymph nodes." *Semin Cell Dev Biol*. doi: 10.1016/j.semcdb.2016.12.002.

36. Hood, J. L. 2016. "Melanoma exosome induction of endothelial cell GM-CSF in pre-metastatic lymph nodes may result in different M1 and M2 macrophage mediated angiogenic processes." *Med Hypotheses* 94:118-22. doi: 10.1016/j.mehy.2016.07.009.

37. Hood, J. L. 2016. "Melanoma exosomes enable tumor tolerance in lymph nodes." *Med Hypotheses* 90:11-3. doi: 10.1016/j.mehy.2016.02.018.

38. Hood, J. L. 2016. "Post isolation modification of exosomes for nanomedicine applications." *Nanomedicine (Lond)* 11 (13):1745-56. doi: 10.2217/nnm-2016-0102.

39. Jackson, N. M., and B. P. Ceresa. 2016. "Protein Kinase G facilitates EGFR-mediated cell death in MDA-MB-468 cells." *Exp Cell Res* 346 (2):224-32. doi: 10.1016/j.yexcr.2016.07.001.

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the Rhesus monkey model of myocardial ischemia." *Metallomics* 8 (7):654-62. doi: 10.1039/c5mt00332f.

PHARMACOLOGY & TOXICOLOGY ABSTRACTS
Faculty with Primary Appointments and Students

Beier, Juliane

National/International:

1. Lang AL, Kaelin BR, Yeo H, Hudson SV, McKenzie CM, Sharp CN, Poole LG, Arteel GE, and Beier JI (2016) Critical Role of Mammalian Target of Rapamycin (mTor) in Liver Damage Caused by VC Metabolites in Mice. *The Toxicologist. Supplement to Toxicological Sciences* 150(1):231.
2. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. ACC Meeting of the Minds Undergraduate Research Conference. Book of Abstracts: 22.
3. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Ritzenthaler JD, Roman R, Arteel GE (2016) Acute-on-chronic alcohol exposure using the 'NIAAA model' concomitantly damages the liver and lung. *Hepatology* 64:613A.
4. Anders LC, Yeo H, Kaelin BR, Bushau AM, Lang AL, Arteel GE, McClain CJ and Beier JI (2016) Role of Dietary Fatty Acids in Liver Injury Caused by Vinyl Chloride Metabolites in Mice. *Hepatology* 64:769A. (Presidential Poster of Distinction).
5. Lang AL, Kaelin BR, Yeo H, Poole LG, Arteel GE and Beier JI (2016) Rapamycin protects liver from the enhancement of LPS induced liver injury caused by experimental vinyl chloride exposure: potential role of mTOR in toxicant/toxin interactions in mice. *Hepatology*, 64:347A.

Local/Regional

6. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. Posters at the Capitol, Frankfort, KY.
7. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. Southern Regional Honors Council: 2016 Conference. Orlando, FL.
8. Lang AL, Kaelin BR, Yeo H, Hudson SV, McKenzie CM, Sharp CN, Poole LG, Arteel GE, and Beier JI (2016) Critical Role of Mammalian Target of Rapamycin (mTor) in Liver Damage Caused by VC Metabolites in Mice. *OVSOT Student Summer Meeting*, Cincinnati, OH. (Selected for Podium Presentation).
9. Beier JI (2016) Vinyl chloride metabolites cause changes to hepatic energy metabolism. Research!Louisville, Louisville, KY.

10. Lang AL, Kaelin BR, Yeo H, Sharp CN, Arteel GE, and Beier JI (2016) Critical Role Of Mammalian Target Of Rapamycin (mTOR) In Liver Damage Caused By VC Metabolites In Mice. Research!Louisville, Louisville, KY. (3rd place Graduate Student Poster Award).
11. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Hudson SV, Roman R, Arteel GE (2016) Acute-on-chronic Alcohol Exposure Concomitantly Damages the Liver and Lung. Research!Louisville, Louisville, KY.
12. Lang AL, Kaelin BR, Yeo H, Poole LG, Arteel GE and Beier JI (2016) Rapamycin protects liver from the enhancement of LPS induced liver injury caused by experimental vinyl chloride exposure: potential role of mTOR in toxicant/toxin interactions in mice. OVSOT annual meeting, Indianapolis, IN.
13. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Hudson SV, Roman R, Arteel GE (2016) Acute-on-chronic Alcohol Exposure Concomitantly Damages the Liver and Lung. OVSOT annual meeting, Indianapolis, IN. (Selected for Podium Presentation).

Arteel, Gavin

National/International

1. Lang AL, Kaelin BR, Yeo H, Hudson SV, McKenzie CM, Sharp CN, Poole LG, Arteel GE, and Beier JI (2016) Critical Role of Mammalian Target of Rapamycin (mTor) in Liver Damage Caused by VC Metabolites in Mice. *The Toxicologist.* 150:231.
2. Dupre TV, Doll MA, Sharp CN, Shah PP, Kiefer A, Scherzer MT, Saurabh K, Saforo D, Siow D, Casson L, Arteel GE, Jenson AB, Megyesi J, Schnellmann RG, Beverly LJ, Siskind LJ. (2016) Suramin Protects from Cisplatin-Induced Acute Kidney Injury. *The Toxicologist.* 150:354.
3. Sharp C, Doll M, Dupre T, Shah P, Marimuthu S, Siow D, Megyesi J, Arteel G, Beverly L, Siskind L. (2016) Developing a More Clinically Relevant Mouse Model of Nephrotoxicity. *The Toxicologist.* 150:496.
4. Hudson SV, Dolin CE, Poole LG, Massey VL, Wilkey DW, Brock GN, Merchant ML, Frieboes HB, and Arteel GE (2016) Modeling Concurrent Binding of Mixed Integrin Species to Multiple ECM Ligands. *The Toxicologist.* 150:285.
5. Poole LG, Massey VL, Torres-Gonzalez E, Siow DL, Warner NL, Luyendyk JP, Ritzenthaler JD, Roman J, Arteel GE. Plasminogen Activator Inhibitor-1 (PAI-1) Plays a Critical Role in Alcohol-Enhanced Acute Lung Injury [abstract]. Am J Respir Crit Care Med 2016:A2647.
6. Lang AL, Kaelin B, Yeo H, Poole LG, Arteel GE and Beier JI (2016) Rapamycin protects from the enhancement of liver injury caused by experimental vinyl chloride exposure: potential role of mTOR in toxicant/toxin interactions in mice. *Hepatology* 64:347A.
7. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Ritzenthaler JD, Roman J and Arteel GE (2016) Acute-on-chronic alcohol exposure using the 'NIAAA model' concomitantly damages the liver and lung. *Hepatology* 64:613A.

8. Anders LC, Yeo H, Kaelin B, Bushau AM, Lang AL, Arteel GE and Beier JI (2016) Role of dietary fatty acids in liver injury caused by vinyl chloride metabolites in mice. *Hepatology* 64:769A. (Presidential Poster of Distinction).
9. Dolin CE, Poole LG, Wilkey DW, Arteel GE, Rouchka EC, Barati MT and Merchant M (2016) Omics characterization of ethanol and lipopolysaccharide impact on the renal cortex. Journal of the American Society of Nephrology 27:407A.

Local/Regional

10. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Ritzenthaler JD, Roman J and Arteel GE (2016) Acute-on-chronic alcohol exposure using the 'NIAAA model' concomitantly damages the liver and lung. *Research!Louisville annual meeting*.
11. Poole LG, Beier JI, Torres-Gonzalez E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho C, Ritzenthaler JD, Roman J and Arteel GE (2016) Acute-on-chronic alcohol exposure using the 'NIAAA model' concomitantly damages the liver and lung. *OVSOT annual meeting*.
12. Poole LG, Beier JI, Torres-Gonzáles E, Anwar-Mohamed A, Warner NL, Dolin CE, Nguyen-Ho CT, Roman J, Arteel GE. (2016). Acute-on-chronic alcohol exposure using the 'NIAAA model' concomitantly damages the liver and lung. Ohio Valley Society of Toxicology Summer Meeting, Cincinnati, OH.
13. Dolin CE, Massey VL, Poole LG, Siow DL, Merchant ML, Wilkey DW, Roman J, and Arteel GE (2016) The Hepatic and Pulmonary "Matrisomes" Respond Dynamically to Inflammatory Injury: Proteomic Characterization of Transitional ECM Changes in the Liver and Lung. Graduate Student Council Research Symposium, Louisville, KY.
14. Dolin CE, Poole LG, Wilkey DW, Barati MT, Arteel GE, and Merchant ML (2016) Characterization of the Impact of Ethanol and Lipopolysaccharide on the Renal Cortex Proteome. University of Kentucky Postdoctoral Symposium, Lexington, KY.
15. Dolin CE, Poole LG, Wilkey DW, Barati MT, Arteel GE, and Merchant ML (2016) Characterization of the Impact of Ethanol and Lipopolysaccharide on the Renal Cortex Proteome. Ohio Valley Society of Toxicology Student/Postdoc Meeting, Cincinnati, OH.
16. Dolin CE, Poole LG, Wilkey DW, Arteel GE, Rouchka EC, Barati MT and Merchant ML (2016) Effects of Ethanol and Lipopolysaccharide on the Renal Cortex Proteome and Transcriptome. Research!Louisville, Louisville, KY.
17. Dolin CE, Poole LG, Wilkey DW, Arteel GE, Rouchka EC, Barati MT and Merchant ML (2016) Effects of Ethanol and Lipopolysaccharide on the Renal Cortex Proteome and Transcriptome. Ohio Valley Society of Toxicology Annual Meeting, Indianapolis, IN.
18. Hudson SV, Dolin CE, Poole LG, Massey VL, Wilkey DW, Merchant ML, Frieboes H, Arteel GE. (2016). Modeling Binding Kinetics of Integrin Mediators of EtOH-enhanced LPS Liver Injury. Research!Louisville, Louisville, KY.
19. Hudson SV, Dolin CE, Poole LG, Massey VL, Wilkey D, Merchant ML, Frieboes HB, Arteel GE (2016). Modeling binding kinetics of integrin mediators of EtOH-enhanced LPS liver injury. OVSOT Annual Meeting.

20. Young JL, Poole LG, Nguyen-Ho CT, Arteel GE. (2016) Exploring the Impact of Chromium Exposure on Macrophage Polarization: Implications for the Innate Immune Response. Research!Louisville, Louisville, KY.
21. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. ACC Meeting of the Minds Undergraduate Research Conference. Book of Abstracts: 22.
22. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. Posters at the Capitol, Frankfort, KY.
23. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2016) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. Southern Regional Honors Council: 2016 Conference. Orlando, FL.
24. Lang AL, Kaelin BR, Yeo H, Hudson SV, McKenzie CM, Sharp CN, Poole LG, Arteel GE, and Beier JI (2016) Critical Role of Mammalian Target of Rapamycin (mTor) in Liver Damage Caused by VC Metabolites in Mice. OVSOT Student Summer Meeting, Cincinnati, OH. (Selected for Podium Presentation).
25. Lang AL, Kaelin BR, Yeo H, Sharp CN, Arteel GE, and Beier JI (2016) Critical Role Of Mammalian Target Of Rapamycin (mTOR) In Liver Damage Caused By VC Metabolites In Mice. Research!Louisville, Louisville, KY. (3rd place Graduate Student Poster Award).
26. Lang AL, Kaelin BR, Yeo H, Poole LG, Arteel GE and Beier JI (2016) Rapamycin protects liver from the enhancement of LPS induced liver injury caused by experimental vinyl chloride exposure: potential role of mTOR in toxicant/toxin interactions in mice. OVSOT annual meeting, Indianapolis, IN.

Ceresa, Brian

1. Gosney, J.S., Ceresa, B.P. A Non-Invasive Strategy for Enriching Early Endosomes to Examine EGFR. ASCB Midwest Membrane Traffick Satellite Meeting 2016
2. Rush, J.S., Peterson, J.L., Ceresa, B.P., BTC and EGF Elicit Different Cellular Response Through EGFR. Research!Louisville 2016
3. Jackson, N.M., Ceresa, B.P. Identifying the Role of STAT3 in EGFR-Mediated Induction of Apoptosis in Cancer. Research!Louisville 2016
4. Gosney, J.S., Ceresa, B.P. A Non-Invasive Strategy for Enriching Early Endosomes to Examine EGFR. Research!Louisville 2016

Chen, Shao-yu

1. Yuan FQ, Liu J, Chen S-Y. Up-regulation of Siah1 by ethanol induces apoptosis in neural crest cells by CBP/P300-mediated acetylation of p53. *Alcohol Clin Exp Res*. 40: 90A, 2016.
2. Yuan FQ, Liu J, Chen S-Y. MicroRNA-135a modulates ethanol-induced apoptosis in neural crest cells by targeting Siah1. *Alcohol Clin Exp Res*. 40: 90A, 2016.

3. Yun Y, Yuan FQ, Liu J, Chen S-Y. Embryonic exposure to low-dose ethanol impairs early β -cell differentiation in zebrafish by altering DNA methylation and gene expression. *Alcohol Clin Exp Res*. 40: 91A, 2016.
4. Yuan FQ, Liu J, Chen S-Y. Siah1 mediates ethanol-induced apoptosis in neural crest cells by CBP/P300-mediated acetylation of p53. ISBRA ESBRA World Congress on Alcohol and Alcoholism, 2016.
5. Yun Y, Yuan FQ, Liu J, Chen S-Y. Exposure to low-dose ethanol in the early stage of development impairs early β-cell differentiation in zebrafish by altering DNA methylation. Research! Louisville 2016, University of Louisville
6. Fan HD, Liu J, Yun Y, Yuan FQ, Chen S-Y. Ethanol-induced inhibition of neural differentiation of neural crest cells is mediated by microRNA-34a through targeting autophagy-related genes. Research! Louisville, 2016, University of Louisville
7. Yuan FQ, Liu J, Chen S-Y. Modulation of ethanol-induced apoptosis in neural crest cells by microRNA-135a through targeting Siah1. Research! Louisville, 2016, University of Louisville

Freedman, Jonathan H.

1. Rice, J.R., Dunlap, P.E., Smith, M.V., Bridge, M.F., Freedman, J.H., Zhao, J., Huang, R., Attene-Ramos, M.S., Xia, M., Simeonov, A., and Boyd, W.A. Assessment of *C. elegans in vivo* ATP status and larval development after exposure to a subset of Tox21 compounds. Fifty-fifth Annual Meeting of the Society of Toxicology, New Orleans, LA (2016)
2. Kolluru V., Pal, D., Ankem, M.K., Freedman, J.H., Alatassi, H., and Damodaran, C. Plac8 plays a major role in cadmium-induced prostate carcinogenesis. Ninth Conference on Metal Toxicity & Carcinogenesis, Lexington, KY (2016)
3. Pal, D., Kolluru V., Alatassi, H., Ankem, M.K., Freedman, J.H., and Damodaran, C. Prevention of cadmium induced prostate carcinogenesis by a dietary agent. Ninth Conference on Metal Toxicity & Carcinogenesis, Lexington, KY (2016)
4. Freedman, J.H. Mechanistic links among cadmium, aging and diabetes. Ninth Conference on Metal Toxicity & Carcinogenesis, Lexington, KY (2016)
5. Sears, S., Pal, D., Kolluru V., Damodaran, C., and Freedman, J.H. Effects of therapeutic compounds on cadmium-induced prostate cancer. Research!Louisville, Louisville, KY (2016)

Gupta, Ramesh

National/International

1. Aqil F, Agrawal AK, Jeyabalan J, Munagala R, Gachuki BW, Bondada S. Parker L, Spencer W & Gupta, RC. Oral delivery of the chemotherapeutic drug, paclitaxel via bovine milk exosomes. Annual Conference of International Society of Extracellular Vesicles (ISEV-2016), May 4-7, 2016, Rotterdam, The Netherlands.
2. Gupta RC, Aqil F, Vadhanam MV, Jeyabalan J, Agrawal AK, Mudd A, Kyakulaga AH, Karukonda D, Spencer W & Munagala, R. Milk-derived exosomes – a platform nanocarrier to enhance anti-proliferative, anti-inflammatory and anti-cancer activities of small drug molecules against multiple human cancers. Annual Conference of International Society of Extracellular Vesicles (ISEV-2016), May 4-7, 2016, Rotterdam, The Netherlands.

Local/Regional

3. Aqil F, Jeyabalan J, Munagala R, Agrawal AK, Parker L & Gupta RC. Exosomes as nanocarriers for the treatment of ovarian cancer. Research Louisville, Univ. of Louisville, Louisville, October 11-14, 2016.
4. Kyakulaga AH Aqil F, Munagala R & Gupta R. Withaferin A alone and in Combination with Paclitaxel Inhibits TGF-ß1 Induced Epithelial-to-Mesenchymal Transition, Invasion and Metastasis of Lung Cancer *in vitro*. Research Louisville, Univ. of Louisville, Louisville, October 11-14, 2016
5. Mudd A, Gupta RC, Gu T, Egilmez NK, Jeyabalan J & Munagala R. Prevention and Treatment of Familial Adenomatous Polyposis (FAP) and Colorectal Cancer by Bilberry-Derived Anthocyanidins. Research Louisville, Univ. of Louisville, Louisville, October 11-14, 2016.
6. Agrawal AK, Aqil F, Jeyabalan J, Munagala R, Spencer WA, Beck J, Gachuki BW, Alhakeem SS, Oben K, Bondada S & Gupta R. Paclitaxel Loaded, Milk-Derived Exosomal Formulation Enhances Therapeutic Efficacy and Reduces Toxicity Following Oral Administration. Research Louisville, Univ. of Louisville, Louisville, October 11-14, 2016.

Hein, David

National/International

1. Stepp, M. W., Doll, M.A., Samuelson, D. J., Sanders, M. G., States, J.C., and Hein, D.W.: Chemically induced mammary tumor differences between rapid and slow arylamine N-acetyltransferase congenic Fischer 344 rats administered 7,12-dimethylbenzanthracene (DMBA). *Proceedings of the Annual Meeting of the Society of Toxicology*, Abstract #2067, New Orleans, Louisiana, March 2016.
2. Kidd, L.R. and Hein, D.W.: Motivating cancer education program participants towards careers in cancer research, prevention and treatment. Proceedings of the Annual Meeting for Experimental Biology, San Diego, California, April 2016. *FASEB Journal* 30 (Supplement 1): 944.2.
3. Hein, D.W., Doll, M.A., and Moeller, T.A.: Genetic heterogeneity in the slow acetylator N-acetyltransferase 2 phenotype in human hepatocytes. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.
4. Boukouvala, S., Agundez, J., Grant, D., Hein, D., Minchin, R., Rodrigues-Lima, F. and Sim, E.: NAT gene nomenclature; towards standardization of pharmacogenetics allele nomenclature and test result reporting. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.
5. Leggett, C.S., Doll, M.A., States, J.C. and Hein, D.W.: Arylamine and alkylaniline carcinogen metabolism in rapid and slow acetylators. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.
6. Stepp, M. W., Doll, M.A., Samuelson, D. J., Sanders, M. G., States, J.C., and Hein, D.W.: Chemically induced mammary tumor differences between rapid and slow arylamine N-acetyltransferase congenic Fischer 344 rats. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.

7. Carlisle, S.M., Doll, M.A., Stepp, M.W., States, J.C., and Hein, D.W.: Construction and characterization of MDA-MB-231 breast cancer cells stably expressing varying arylamine N-acetyltransferase 1. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.
8. Carlisle, S.M., Trainor, P.J., Yin, X., Doll, M.A., States, J.C., Zhang, X., and Hein, D.W.: Untargeted polar metabolomics of transformed MDA-MB-231 breast cancer cells expressing varying levels of human arylamine *N*-acetyltransferase 1. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.
9. Stepp, M.W., Doll, M.A., Chang, M.Y., States, J.C., and Hein, D.W.: CRISR/Cas9 knockout of arylamine N-acetyltransferae 1 in human breast cancer cell lines. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.

Local/Regional

10. Carlisle, S.M., Trainor, P.J., Yin, X., Doll, M.A., States, J.C., Zhang, X., and Hein, D.W.: Untargeted polar metabolomics of transformed MDA-MB-231 breast cancer cells expressing varying levels of human arylamine *N*-acetyltransferase 1. Proceedings of the UT-KBRIN Bioinformatics Summit, Poster 23, Lake Barkley State Resort Park, Cadiz, Kentucky, April 2016.
11. Furnish, M.M, Stepp, M.W., Doll, M.A., Chang, M.Y. and Hein, D.W.: Investigation of arylamine N-acetyltransferase 1 CRISR/Cas9 knockout MDA-MB-231 cell lines via anoikis and invasion assays. University of Louisville Undergraduate Research Symposium, #12, Louisville, Kentucky, August 2016.
12. Carlisle, S.M, Klinge, C.M, and Hein, D.W.: Bioenergetics evaluation of MDA-MB-231 breast cancer cells expressing parental, increased, and knockout levels of arylamine N-acetyltransferase Proceedings of Research!Louisville, Abstract GRD-6, Louisville, Kentucky, October 2016.
13. Stepp, M.W., Doll, M.A., and Hein, D.W.: Decreased human NAT1 or rat NAT2 activity elevates cellular acetyl coenzyme A levels. Proceedings of Research!Louisville, Abstract GRD-44, Louisville, Kentucky, October 2016.
14. Furnish, M.M, Stepp, M.W., Doll, M.A., Chang, M.Y. and Hein, D.W.: Investigation of arylamine N-acetyltransferase 1 CRISR/Cas9 knockout in MDA-MB-231 cell lines via anoikis and invasion assays. Proceedings of Research!Louisville, Abstract UCE-12, Louisville, Kentucky, October 2016.
15. Kidd, L.R. and Hein, D.W.: Success of the NCI Cancer Education Program. Proceedings of Research!Louisville, Abstract F-21, Louisville, Kentucky, October 2016.
16. Carlisle, S.M, Klinge, C.M, and Hein, D.W.: CRISPR/Cas9 knockout of human arylamine N-acetyltransferase 1 leads to an altered bioenergetics profile in MDA-MB-231 breast cancer cells. Ohio Valley Society of Toxicology, Indianapolis, Indiana, October 2016.
17. Stepp, M.W., Doll, M.A., and Hein, D.W.: Decreased human NAT1 or rat NAT2 activity elevates cellular acetyl coenzyme A levels. Ohio Valley Society of Toxicology, Indianapolis, Indiana, October 2016.
18. Furnish, M.M, Stepp, M.W., Doll, M.A., Chang, M.Y., and Hein, D.W.: Investigation of arylamine N-acetyltransferase 1 CRISR/Cas9 knockout in MDA-MB-231 cell lines

via anoikis and invasion assays. Proceedings of the Kentucky Academy of Science, Louisville, Kentucky, November 2016.

19. Carlisle, S.M., Trainor, P.J., Yin, X., Doll, M.A., States, J.C., Zhang, X., and Hein, D.W.: Untargeted polar metabolomics reveals differences in palmitoleic acid between transformed MDA-MB-231 breast cancer cells expressing varying levels of human arylamine *N*-acetyltransferase 1. Proceedings of the Kentucky Academy of Science, Louisville, Kentucky, November 2016.

Hood, Joshua

National/International

1. Noel TA, *Hood JL. Abstract B40: Tuning exosomes to modulate macrophage inflammation: A therapeutic strategy for melanoma. *Cancer research* 76(3 Supplement), B40 (2016).
2. Petersen KE, Gale BK, Hood JL, King B, Shiri F, Wickline SA. Abstract O22: Separation of Exosomes with Electrical Field Flow Fractionation. *Proceedings of the 18th International Symposium on Field- and Flow-Based Separations*, Dresden, Germany, May 22-26, 2016, Published 5/9/2016.
3. Petersen KE, King B, White T, Shiri F, Hood JL, Wickline SA, Gale BK. Abstract P43: Recent Advances in El-SPLITT: A Flow Addition with Porous Electrode. *Proceedings of the 18th International Symposium on Field- and Flow-Based Separations*, Dresden, Germany, May 22-26, 2016, Published 5/9/2016.
4. Petersen KE, Gale B, Ornthai M, Hood JL. Exosomes separation using electrical field flow fractionation and a new continuous SPLITT/FFF approach. *Proceedings of the 251st American Chemical Society National Meeting & Exposition,* San Diego, CA, March 13-17, 2016 pp.83-TECH, Published 3/2016.
5. Smith MA, Bardi G, *Hood JL. Abstract 046: Melanoma exosomes promote mixed macrophage polarization. *American Society for Exosomes and Microvesicles*, Asilomar, Pacific Beach, CA, October 2016

Local/Regional

6. Smith MA, Bardi G, *Hood JL. Paracrine induction of macrophages by melanoma exosomes. Research!Louisville, Louisville, KY, October 2016

Kidd, LaCreis Renee

National/International

1. Kidd L.R. and Hein, D.W. Motivating Young Investigators to Pursue Cancer Research Careers and Training. American Society of Pharmacology & Experimental Therapeutics, San Diego, CA, April 4, 2016.
2. Jones D.Z., Hobbing K., Schmidt L., Clark G., and Kidd L.R. miR-186 inhibition suppresses cell proliferation and anchorage independence in a metastatic prostate cancer cell line. American Society of Pharmacology & Experimental Therapeutics, San Diego, CA, April 4, 2016.
3. Jones D.Z., Hobbing K., Schmidt M.L., Clark G. and Kidd L.R. Inhibition of miR-186 and repression of aggressive prostate cancer phenotype using a metastatic cell model. American Association for Cancer Research (AACR), New Orleans, LA, April 18, 2016.

4. Suman, S., Jones-Reed, D., Schmidt, M.L., Clark, G., Klinge, C., Barve, S.,Kimbro, K., Kidd, L.R. Alteration of miR-186 expression modifies inflammatory markers in normal epithelial and prostate cancer cell models. American Society of Pharmacology & Experimental Therapeutics, Chicago, IL, Submitted November 17, 2016.
5. Suman, S., Jones-Reed, D., Schmidt, M.L., Clark, G., Klinge, C., Barve, S.,Kimbro, K., Kidd, L.R. Alteration of miR-186 expression modifies inflammatory markers in normal epithelial and prostate cancer cell models. American Association for Cancer Research, city, state, Submitted November 17, 2016
6. Jones D.Z., Hobbing K., Schmidt M.L., Clark G, Kidd, L.R. "Inhibition of miR-186 and repression of aggressive prostate cancer phenotype using a metastatic cell model". Biennial Science of Global Cancer Health Disparities in Black Men Conference. AC3 Highlights. University of Florida Health Cancer Center, Orlando, FL, November 9, 2016.
7. Bradley, C.P., Martin, T.L., Jones-Reed, D., Ragin, C., Jackson, M., McFarlane-Anderson, N., Tulloch-Reid, M., Morrison, S., Rafael Flores-Obando, R., Kimbro, S., Kidd, L.R. Impact of High Order Interactions between Inflammatory and Immune Response Genes in Prostate Cancer among men of African Descent, Biennial Science of Global Cancer Health Disparities in Black Men Conference. University of Florida Health Cancer Center, Orlando, FL, November 12, 2016. (Abstract & Invited Oral Presentation)
8. Martin, T.L., Bradley, C.P., Jones-Reed, D., Ragin, C., Jackson, M., McFarlane-Anderson, N., Tulloch-Reid, M., Morrison, S., Rafael Flores-Obando, R., Kimbro, S., Kidd, L.R. Non-synergistic Interaction along the CCR5-CXCR5-CCR7 axis and Prostate Cancer, Biennial Science of Global Cancer Health Disparities in Black Men Conference. University of Florida Health Cancer Center, Orlando, FL, November 12, 2016.

Local/Regional

9. Kidd L.R. and Hein, D.W. Success of the NCI Cancer Education Program. Research Louisville!, Louisville, Kentucky, October, 2016.
10. Bradley, C.P., Martin, T.L., Jones-Reed, D., Ragin, C., Jackson, M., McFarlane-Anderson, N., Tulloch-Reid, M., Morrison, S., Rafael Flores-Obando, R., Kimbro, S., Kidd, L.R. Impact of High Order Interactions between Inflammatory and Immune Response Genes in Prostate Cancer among men of African Descent. Research Louisville!, Louisville, Kentucky, October, 2016.
11. Martin, T.L., Bradley, C.P., Jones-Reed, D., Kidd, L.R. The Impact of Complex Interactions of Chemokine Sequence Variants on Prostate Cancer Risk among men of African Descent. Research Louisville!, Louisville, Kentucky, October, 2016.

Kouokam, J. Calvin

Local/Regional

1. Kouokam JC*, Fuqua JL, Palmer KE. In Vitro Toxicological Evaluation of an Oxidation Resistant Variant of Griffithsin, a Potent Antiviral Lectin Targeting HIV and Other Enveloped Viruses. Research!Louisville. October 2016, Louisville, KY.
2. Hamorsky KT, Kouokam JC, Grooms T, Husk A, Freels A, Guo H, Matoba N. A Lectibody Targeting HIV and Cancer-associated High-mannose Glycans"

Research!Louisville. October 2016, Louisville, KY.

3. Matoba N, Husk A, Kouokam JC, Hamorsky K, Grooms T. "A lectibody targeting Env glycans exhibits broad antiviral activity against HIV virions and infected cells" HIV R4P, Chicago, IL, October 17 – 20, 2016.

Lukashevich, Igor S.

National/International

1. Irina Tretyakova, Brian Nickols, Igor Lukashevich, Scott Weaver, Peter Pushko. DNA-Launched Vaccines for Venezuelan Equine Encephalitis and Chikungunya Viruses. *2016 ASM Biodefense and Emerging Diseases Research Meeting, February 8-10, 2016, Washington, DC, Program and Abstracts*
2. Warner NL, Jokinen JD, Arteel GE, Lukashevich IS (2016). Interaction of arenaviruses with polarized epithelial cells. *The American Society of Virology 35th Annual Meeting, June 18-20, 2016, Blacksburg, VA.*
3. Igor S. Lukashevich. Antiviral Activity of Arenaviral Defective Interfering Particles. *The 4th Antiviral Congress, 18-21 September 2016, Sitges, Barcelona, Spain, Program and Abstracts.*
4. Lukashevich IS. 2016. Reassortant ML29 Vaccine Platform to Control Lassa Fever in West Africa. *Keystone Symposia Series: Hemorrhagic Fever Viruses, December 4-8, 2016, Santa Fe, New Mexico.*
5. Holz GE, Jokinen JD, Warner NL, Chung DH, Beier JI, Arteel GE, Lukashevich IS. 2016. Arenavirus-induced disruption of cell cycle progression of hepatocytes and liver pathology. *Keystone Symposia Series: Hemorrhagic Fever Viruses, December 4-8, 2016, Santa Fe, New Mexico.*
6. Masaharu Iwasaki, Beatrice Cubitt, Jenny Jokinen, Igor S. Lukashevich, Juan C. de la Torre. 2016. Novel Genetic Approaches for Rationale Attenuation of Pathogenic Arenaviruses. *Keystone Symposia Series: Hemorrhagic Fever Viruses, December 4-8, 2016, Santa Fe, New Mexico.*

Local/Regional

7. Holz GE, Jokinen JD, Warner NL, Chung DH, Lukashevich IS. 2016. TNF-α stimulation in LCMV-infected hepatic in vitro model promotes viral replication and upregulates cell cycling machinery. *Research!Louisville, Louisville, KY.*
8. Warner NL, Jokinen J, Arteel GE, Lukashevich IL (2016) The Role of Epithelial Cell Polarity in Mammarenavirus Infections *in Vivo. Research!Louisville, Louisville, KY*

Matoba, Nobuyuki

National/International

1. Matoba N*. "Plant viral vectors for efficient bioproduciton of protein pharmaceuticals in plants" *The 27th International Conference on Arabidopsis Research*, Gyeongju, South Korea, June 29 – July 3, 2016. Invited Talk, Session Chair (Plant Biotech).

Local/Regional

2. Loganathan N*, Ryoal JM, Matoba N. "Plant-Made Cholera Toxin B Subunit: A Molecular Look at Wound Healing Mechanisms." Research!Louisville. October 2016, Louisville, KY.
3. Hamorsky KT*, Kouokam C, Grooms T, Husk A, Freels A, Guo H, Matoba N. A

Lectibody Targeting HIV and Cancer-associated High-mannose Glycans" Research!Louisville. October 2016, Louisville, KY.

4. Royal J*, Baldauf K, Matoba N. "Plant-Made Cholera Toxin B Subunit: a Candidate Oral Immunotherapeutic Agent Enhances Colonic Mucosal Wound Healing." Research!Louisville. October 2016, Louisville, KY. Matoba N*, Husk A, Kouokam JC, Hamorsky K, Grooms T. "A lectibody targeting Env glycans exhibits broad antiviral activity against HIV virions and infected cells" HIV R4P, Chicago, IL, October 17 – 20, 2016.
5. Hamorsky K*, Moore L, Wang L, Rohan L, Palmer K, Matoba N. "Quality studies to support the biopharmaceutical development of the rectal microbicide candidate Griffithsin" HIV R4P, Chicago, IL, October 17 – 20, 2016.
6. Fuqua J*, Hamorsky K, Wang L, Kramzer L, Matoba N, Rohan L, Palmer K. "Characterization of an oxidation resistant griffithsin for use as an HIV microbicide" HIV R4P, Chicago, IL, October 17 – 20, 2016.

Benz, Fredrick

1. Long, Y.S., Zheng, S., Kralik, P.M., **Benz, F.W**. and Epstein, P.N. Impaired albumin uptake and processing promote albuminuria in OVE26 diabetic mice. J Diabetes Res. 2016;2016:8749417. Epub 2016 Oct 16. doi: 10.1155/2016/8749417.
2. Wang, Yuxi, **Frederick W. Benz**, Yangping Wu, Qisheng Wang, Yunfeng Chen, Xiangzheng Chen, Huiyan Li, Yonghui Zhang, Rundong Zhang, and Jinliang Yang. Structural Insights into the Pharmacophore of Vinca Domain Inhibitors of Microtubules. Mol Pharmacol. 89:233-42 (2016). doi: 10.1124/mol.115.100149.

RESEARCH GRANTS ACTIVE

Agency/Number	Title	Role	PI	Project Period	Budget Award
Antimisaris, Demetra					
PA-10-263	Strength of Specific Medication Literacy and Clinical Correlates in Low Income Older Adults with Asthma: *Supplement* to Asthma in Older Adults*	Co-I	Antimisaris	2016-2019	$69,220
PA-10-263	Asthma in Older Adults: Identifying Phenotypes and Factors	Co-I	Antimisaris	2015-2019	2,869,564
HRSA/15-057	KY Rural Underserved Geriatric Interprofessional Education Program	Co-I	Antimisaris	2015-2017	2,390,440

KSEF (Ky Science & Engineering Foundation)	Long Term Care Planning and Policy for Aging Population in Kentucky	Co-I	Antimisaris	2015-2016	$26,000
Beier, Juliane					
NIDDK/ K01 DK096042-01	Enhancement of NAFLD risk by vinyl chloride: interaction of gut-liver-adipose axis	PI	Beier	04/01/13-03/31/18	$447,967
NIDDK/ T35 DK072923	Summer Endocrine Research Training Program	Mentor	Klinge	05/01/15-04/30/16	$36,206
NIDDK/ R03 DK107912	Vinyl chloride-NAFLD interaction	PI	Beier	01/16-12/17	$130,000
P20 GM113226	Hepatobiology and Toxicology COBRE	Project PI	McClain	12/16-11/21	$7,500,000
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Arteel	04/01/16-03/31/21	$2,183,597
Arteel, Gavin					
T32 ES011564	UofL Environmental Health Sciences Training Program	PI	Arteel	7/1/16-6/30/21	$1,918,730
U01 AA021901	Novel therapies in alcoholic hepatitis University of Louisville	Co-I	McClain	10/01/12 - 09/31/17	$1,036,553
R01 AA021978	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	PI	Arteel	02/01/14 - 01/31/19	1,125,000
R01 AA021978S1 (minority supplement)	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	Mentor	Hudson	09/01/15 - 01/31/18	$83,418
R01 DK100414	Therapeutics development for hepatic fibrosis	Sub. PI	R Maitra	09/01/14 - 08/31/19	$94,767
MFE-135424 (CIHR postdoctoral fellowship)	Role of extracellular matrix and inflammatory remodeling in alcohol liver and lung damage	Mentor	A Mohamed	07/01/15 - 07/15/16	$88,000
P50 AA024337	University of Louisville Alcohol Research Center	Pilot Core Director,	McClain	12/01/15 - 11/30/20	$6,006,300

		Component Co-I; Education Co-director			
P20 GM113226	Hepatobiology and Toxicology COBRE	Core Dir./mentor	McClain	12/01/14 - 11/30/19	$7,500,000
Ceresa, Brian					
NIH/NEI R21EY027032	Identifying novel c-Cbl antagonists to promote corneal epithelial regeneration	PI (30%)	Ceresa	07/01/16 – 06/31/18	$423,500
NIH/NCI R01CA193220	Ubiquilin1 regulates EMT and metastasis of human lung adenocarcinoma	Co-I (1%)	Beverly	09/01/10-08/31/14 (NCE)	$1,750,890
Chen, Shao-yu					
NIAAA/RO1 AA021434	Role of microRNA in ethanol-induced apoptosis and teratogenesis	PI	Shao-yu Chen	07/2013 – 06/2018	$1,125,000 (direct cost)
NIAAA/RO1 AA020265	Role of Siah1 in ethanol-induced apoptosis and teratogenesis	PI	Shao-yu Chen	07/2012 – 06/2017	$1,125,000 (direct cost)
NIAMS/RO1 AR063630	Coordinated cytoskeletal dynamics in skin somatic stem cells	Subcontract PI	Xiaoyang Wu	09/2013 – 08/2018	$1,125,000 (direct cost) $125,000 direct cost for subcontract
NIAAA/P50 Alcohol Center grant	The role of nutrition in the development/progression of alcohol-induced organ injury. Project 3: Sulforaphane-mediaed epigenetic modulation of ethanol-induced apoptosis and teratogenesis	Project 3 PI	Craig McClain	05/2016 – 04/2021	$8,000,000.000 (Total Budget) Project 3 budget: $750,000.00

					(Direct cost)
NIEHS/T32	UofL environmental health sciences training program	Faculty mentor	Gavin Arteel	07/2016 – 06/2021	$2,311,000.00
Clark, Geoffrey J.					
NCI/R01 CA133171-01A2	The Role of the Ras effector Nore1a in tumor suppression	PI	Clark	2010-2017	900,000
NIH Eureka Award/ 1R01CA153132-01	Oncopigs as a better model for human cancer	PI	Clark	2010-2017	800,000
NIH Excite Award	A first –in-class RalGEF inhibitor as an anti-Ras drug.	PI	Clark	2016-2018	200,000
Jewish Hospital Fund for Excellence	The development of a novel small molecule inhibitor of lung cancer	PI	Clark	2015-2017	250,000
KLCRP	Novel small molecule inhibitors of the Ras Oncoprotein for Lung cancer	PI	Clark	2016-2018	150,000
Freedman, Jonathan					
UofL SoM	Metals and Carcinogenesis	PI	Freedman/ Damodaran	06/16 -05/17	$66,761
NIEHS/T32 ES011564	UofL Environmental Health Sciences Training Program	Member	Arteel	06/16 -05/21	$2,211,776 ($2,183,597 direct)
NIEHS/T35 ES014559	Summer Environmental Health Sciences Training Program	Member	Prough	04/16 -03/21	$190,00 ($175,000 direct)
NCI/R25 CA134283	University of Louisville Cancer Education Program	Member	Hein	09/15 -08/16	$293,984
Gupta, Ramesh					

Dept. of Defense	Prevention & Treatment of Breast Cancer by Blueberry	PI	Gupta	09/14-08/17	$1,033,053 (Total)
STTR Phase I	Exosomal Drug Formulation	PI	Gupta	09/14-02/16	$225,000 (Total)
KY Matching	This grant is a supplement to the STTR Phase I grant on Exosomal Drug Formulation	PI	Gupta	04/15-03/17	$150,000 (Directs)
Helmsley Trust Fund	Plant-based cancer therapeutics	PI	Gupta	11/15-10/16	$100,000 (Directs)
Hein, David					
NCI R25- CA134283	University of Louisville Cancer Education Program	PI	Hein	09/14/11-08/31/17	$1,543,610
NIEHS T32- ES011564	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/09-06/30/16	$2,129,708
NIEHS T35-ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/11 – 03/31/16	$175,814
Cempra Pharmaceuticals (OIEB 160300)	Investigation into the N-acetylation of solithromycin	PI	Hein	10/10/15 – 01/31/16	$24,450
Cempra Pharmaceuticals (OIEB 161211)	Solithromycin metabolism in rapid and slow acetylators	PI	Hein	06/01/16 – 09/30/16	$35,330
NIEHS T35-ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	05/15/16 – 03/31/21	$186,540
NIH (P20-GM113226)	Hepatobiology and Toxicology COBRE	Director for faculty career development; project lead renovatio	McClain	06/10/16 – 03/31/21	$11,530,145

		n & alternations			
NIEHS T32 ES011564	UofL Environmental Health Sciences Training Program	Co-I and mentor	Arteel	07/01/16 – 06/31/21	$2,314,825
NIH R15 HD087911	The interaction between NAT2 acetylator status and exposure to tobacco smoke on ovarian reserve and in vitro fertilization outcomes	Co-I	Taylor	07/08/16 - 06/30/19	$460,018
NIH (U19-AI103458)	Griffithsin-based rectal microbicides for PREvention of Viral Entry (PREVENT)	Co-mentor for faculty diversity supplement	Palmer	07/01/16-06/30/17	$127,974
Hood, Joshua					
NIH NIGMS R21 GM107894-03	Continuous Separation of Melanoma Exosomes using Field-Flow Fractionation	Co-PI	Hood (U of L), Gale (U of U)	1/1/15 – 7/31/17	$54,480 (Direct)
NIH SBIR Contract Phase 1, HHSN261201600054C	Continuous exosome and oncosome separations using a modified SPLITT system	Co-PI	Hood (U of L), Gale, Petersen, (Espira Inc.)	9/27/16 – 6/18/17	$50,001
NIH NCI R21 CA198249-01	A Novel Vaccination Stratagem for Lung Cancer	Collaborator	Yaddanapudi (JGBCC collaborator)	7/1/15 – 6/30/17	N/A, unpaid
Kang, Y. James					
NIH-NIAAA, 1R01AA023190	Mechanisms of Probiotics in Alcoholic Liver Disease	Consultant	Wenke Feng	10/01/15-09/30/20	$1,500,000
Kidd, LaCreis					
NIH, NIEHS T32-ES011564	UofL Environmental Health Science Training Program	Mentor	Hein	07/1/09-06/30/16	$1,999,550

R25-CA134283-05 No cost extension	University of Louisville Cancer Education Program	Co-I,	Hein/Kidd	9/14/12-08/31/16	$1,560,990
Kouokam, J. Calvin					
NIAID/3U19AI113182-03S1	Safety and efficacy of plant produced Griffithsin in the context of colorectal pathologies.	Co-I	Kenneth E. Palmer	2016-2017	$127,974
Lukashevich, Igor S.					
NIH 1R01 AI093450-06	Development of New Bivalent Cross-Protective Arenaviral Vaccines	Contact PI	MPI	04/01/2011-03/31/2017 (NCE)	$3,964,538
NIH/2R44AI094863-03A1	Novel DNA-launched Attenuated Vaccine for VEE Virus, SBIR Phase II	PI, sub	Pushko	02/01/16-01/31/18	$615,000
Matoba, Nobuyuki					
UofL ExCITE Product Development Grant Cycle 2 (NIH U01 HL127518 ExCITE Program)	Oral Solid Dosage Formulation of Cholera Toxin B Subunit	Co-PI	Hamorsky/ Matoba	2/1/16 – 1/31/18	$200,000
NIH NIAID Microbicide Innovation Program V /R21/R33 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	6/10/10 – 6/30/16	$1,175,000 (total direct costs), NCE
DoD/USAMRMC/W81XWH-10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Sub-project PI	Wilkerson	9/30/11 – 10/29/16	$1,748,000 (total direct costs)
Brown Cancer Center Helmsley Charitable Trust Program	Plant-made *N*-mannosylated cholera toxin B subunit as a novel vaccine scaffold	PI		11/1/15 – 12/31/16	$125,000 (total direct costs)
Palmer, Kenneth E.					
NIH NIAID/ U19 AI113182	Griffithsin-based Rectal Microbicides for PREvention of Viral ENTry (PREVENT)	PI of PK/PD Core	Palmer PD/Matoba PK/PD Core PI	7/01/14 – 6/30/19	$15,500,390 (total direct costs)

Molecular Targets Phase III CoBRE Pilot Project (NIH NIGMS/ P30GM106396)	Plant-made lectibody targeting tumor-associated high-mannose-glycan antigens as a novel cancer immunotherapeutic/diagnostic agent	PI		7/01/15 – 6/30/16	$75,000 (total direct costs)
Molecular Targets Phase IV CoBRE Pilot Project (NIH NIGMS/ P30GM106396)	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI		7/01/16 – 6/30/17	$75,000 (total direct costs)
NIH/NIAID U19 AI 113182-01	Griffithsin-based rectal microbicides for prevention of viral entry (PREVENT)	PD/PI	Palmer	07/01/14 – 06/30/19	$14,793,126 **
NIH/NIAID U19 AI 113182-661	PREVENT Program Administrative Core	PI	Palmer	07/01/14 – 06/30/19	** see parent award above
NIH/NIAID U19 AI 113182-666	Project 2: PREVENT program preclinical studies	PI	Palmer	07/01/14 – 06/30/19	** see parent award above
Leona M and Harry B Helmsley Charitable Trust 2014-PG-MED001	Advancing the discovery and development of plant-made pharmaceuticals	Sub-proj. PI	Miller	01/01/14 – 12/31/17	$5,500,000
DoD/USAMRMC W81XWH-10-2-0082-CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI of sub-award to UofL	Wilkerson & Palmer	9/30/11 - 10/29/16	$1,748,000
NIH/NIHLB 1U10HL127518-01	The EXCITE Program: Expediting Commercialization, Innovation, Translation and Entrepreneurship	Leader-ship Team	Bates/ Miller/ Krentsel	04/01/15 – 03/21/18	$2,998,200
NIH/NIAID 3U19 AI 113182-03S1	Diversity Supplement for PREVENT U19	PI & Mentor	Palmer/ Kouokam	07/01/16 – 06/30/17	$127,974

Jewish Heritage Foundation of Excellence (JHFE)	Griffithsin-Based Nanocarriers for the Prevention of Viral Infections	Co-I	Steinbach-Rankins	08/01/16 – 07/31/18	$300,000
Siskind, Leah J.					
NIH/NIDDK (R01) DK093462	Targeting Ceramide-Induced Kidney Cell Apoptosis and Necrosis for the Treatment of Acute Kidney Injury	PI	Siskind	09/17/12-04/30/17	$217,500 Annual Direct Costs, $1,087,500 total Directs for entire budget period
Kentucky Lung Cancer Program	Whole genome CRISPR/Cas9 screens to identify novel vulnerabilities of human lung cancer cells	Co-PI	Siskind Beverly	01/01/16 – 1/01/18	$65,000 annual direct costs, $130,000 total direct costs for entire budget period
Kentucky Lung Cancer Program	Developing pigs as models of lung cancer progression and therapeutics	Co-PI	Siskind Beverly	04/01/16 – 3/31/17	$70,000 total direct costs for budget period
Jewish Heritage Fund for Excellence Research Enhancement Grant	Identifying physiologically relevant RAS synthetic lethal components	PI	Siskind	12/1/16 – 11/30/17	$50,000 total direct costs for budget period
Song, Zhao-Hui (Joe)					
T32ES11564	UofL Environmental Health Sciences Training Program	Faculty Mentor	David W. Hein	7/1/09 - 6/30/15	$ 2,037,745
8 P30GM103507 Pilot Grant	The Potential Therapeutic Effects of Cannabidiol on Spinal Cord Injury	PI for Pilot Grant	S Whittmore	8/1/14 - 7/30/16	$ 22,500
R01DA003934	Molecular Determinants of Cannabinoid Activity	PI, U of L subcontract	P Reggio	4/1/15 - 3/31/20	$ 375,000
States, J. Christopher					

R21ES023627	Differential miRNA Expression & Progression Of Arsenic Induced Skin Cancers	PI	States	07/01/15 – 06/30/17	$422,000
KSEF-	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	7/1/15 – 6/30/17	$30,000
KLCRP	Targeting the Anaphase Promoting Complex as Lung Cancer Chemotherapy	PI	States	5/1/15 – 4/30/17	$150,000
T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Arteel	07/01/16 – 06/30/21	$2,316,985
T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	05/01/16 – 04/30/21	$516,565
R25CA134283	University Of Louisville Cancer Education Program	Mentor	Hein	09/14/11 – 08/31/16	$1,496,675
P20GM113226-	Hepatobiology And Toxicology COBRE	Mentor	McClain	06/10/16 - 03/31/21	~$13M
P30 ES020957	Center for Urban Responses to Environmental Stressors (CURES)	Ext. Adv. Bd.	Runge-Morris	06/01/14 – 03/31/17	$2,454,236
Wise, John Pierce Sr.					
NIEHS/R01 ES016893	Particulate Cr(VI) Toxicology in Human Lung Epithelial Cells and Fibroblasts	PI	Wise	07/01/08 - 12/31/18	$3,090,764
JHFE Research Enhancement Grant	Mechanisms of Particulate Hexavalent Chromium-Induced Centrosome Abnormalities in Human Lung Cells	PI	Wise	05/01/16 - 04/30/17	$50,000
NIEHS/T32 ES011564 (A1)	UofL Environmental Health Sciences Training Program	Mentor	Arteel	04/01/16 - 03/31/21	$2,183,597
R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/01/16 - 08/31/21	$1,500,000

P20GM113226	Hepatobiology & Toxicology COBRE	Mentor	McClain	6/10/16 - 3/31/21	$2,608,500 (first year funding)

REASEARCH GRANTS SUBMITTED

Agency/Number	Title	Role	PI	Project Period	Budget Request
Beier, Juliane I.					
R25 GM121239	Maximizing Student Success at the University of Louisville	Mentor	Hein	12/16-11/21	$1,705, 607
F31 ES028080	Vinyl chloride-diet interactions: potential roles of autophagy and energy management	Mentor	Lang	7/16-6/20	$130,728
R25 CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/16-08/21	$1,500,000
P42 ES023716	Environmental exposure and cardiometabolic disease	Co-I	Srivastava	04/17-03/22	$9,245,617
Arteel, Gavin					
R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/01/16 - 08/31/21	$1,500,000
R01 HL133798	Age-dependent matrisome changes predispose to injury-induced fibrosis	MPI	Roman, Arteel, Siskind, Beverly	07/01/16 - 06/30/20	$1,400,000
P42 ES023716	Environmental exposure and cardiometabolic disease	Education Core Director	Srivastava	04/01/17	$9,245,617
R25-GM121239	Maximizing Student Success at the University of Louisville	Mentor	Hein	12/01/16 - 11/30/21	$1,705,607
R25 CA134283	University of Louisville Cancer Education Grant Proposal	Mentor	Hein	4/01/17-03/31/21	$1,500,000
Ceresa, Brian P.					

NEI – R01	Development of a Next-generation Anesthetics for Ocular Pain	Co-PI (25%)	Ceresa, Petruska	7/01/17 -6/30/22	$1,925,000
NEI – T35 EY026509	Summer Vision Sciences Training Program	Co-PI (5%)	Ceresa, Kaplan	7/01/17 -6/30/22	$193,732 (impact score:20)
NIH	Interactions between Yersinia pestis and the host cell recycling pathway	Co-I (10%)	Lawrenze	4/01/17-3/31/22	$1,925,000
NCI	Ubiquilins are critical regulators of lung cancer initiation	Co-I (5%)	L. Beverly	7/01/17-6/30/22	$1,925,000
American Academy of Optometry	Development of a Next-Generation Topical Anesthetic for Treatment of Ocular Pain	Co-I (0%)	P. Scott	1/1/17-12/31/18	$60,000
Harrington Discovery Institute	Development of a Novel Topical Anesthetic for the Treatment of Ocular Pain	Co-I (0%)	P. Scott	1/1/17-12/31/18	$100,000
NIH	ErbB2 and ErbB3 as Regulators of EGFR-mediated Corneal Epithelial Homeostasis	PI (30%)	Ceresa	09/01/16 – 08/31/21	$1,925,000
Chen, Shao-yu					
NCI/R25	Cancer education program for professional and undergraduate students	Faculty mentor	David Hein/ Creis Kidd	04/17 – 03/22	$1,620,000
Clark, Geoffrey J.					
NIH/R01	The Ras/RalGEF pathway as a therapeutic target in Pancreatic cancer	PI	Clark	2017-2022	350,000 /annum
NIH/U01	A clinically relevant model of small cell lung carcinoma and therapeutic response	Co-PI	Beverly, Siskind and Clark	2016-2020	400,000 /annum

CDMRP Breast cancer research	Development of a porcine model for breast cancer to allow optimization of immune checkpoint therapy.	PI	Clark	2016-2018	300,000
NIH /U01	Extrinsic selective pressures dictate intrinsic cancer biology phenotypes	Co-I	Beverly	2016-2021	400,000 /annum
KSEF	Small molecule inhibitors of RalGEFs to suppress Ras driven cancer	PI	Clark	2017-2018	30,000
Kentucky Lung cancer research program	Physiologically relevant K-Ras synthetic lethals	Co-I	Siskind	2016-2018	150,000
NIH R21	Novel RalGDS inhibitors to BLOCK Pancreatic cancer	PI	Clark	2017-2019	275,000
CDMRP Neurofibromatosis program	Novel inhibitors of NF1 disease	PI (Co-I: Curran)	PI	2017-2020	194,000 /annum
NIH R01	Physiologicaly relevant K-Ras synthetic lethals	Co-PI (Co-PIs Siskind and Beverley)	Beverly	2017-2021	450,000 /annum
Bristol Myers Squib catalyst award	Small molecule inhibitors of RalGEFs to suppress Ras driven cancer	PI	PI	2017-?	To be determined
Freedman, Jonathan H.					
NIEHS/R01 ES026628-01	Contribution of environmental toxicants in the development of metabolic disease	PI	Freedman	10/17 -09/22	$1,875,000 ($1,250,000 direct)
NIEHS/ R01 ES028102-01	The role of autophagy in cadmium induced prostate carcinogenesis	PI	Freedman/ Damodaran	07/17 - 06/22	$3,162,030 (2053266 direct)

CDMRP Autism Research Program/ AR160152	Multi-system investigation of environmental factors contributing to Autism Spectrum Disorders	PI	Freedman	09/17 - 09/20	$580,580 ($377,000 direct)
Internal RFP sponsored by the Offices of the Provost	Center for Integrated Environmental Health Science	Co-PI	States	08/16 - 07/19	$750,000
SFARI Pilot Grant	Multi-system investigation of environ-mental factors contributing to ASD	PI	Freedman	08/17 - 07/19	$360,000 ($300,000 direct)
MacArthur Foundation's 100 & Change Programme	Mapping the Chemosphere	Investigator	Colbourne	TBD	$100,000,000
ADA Grant/ 1-17-IBS-099	Contribution of environmental toxicants in the development of type 2 diabetes	PI	Freedman		
Fuqua, Joshua					
KTRDC	Development of Tobacco Hybrids for Field Production of Griffithsin	CoPI	Fuqua	1 years; Starting Apr 2016	14,776 Awarded – declined due to IP conflicts
NIAID/ 1 R01 AI131974-01	Engineering, design, and optimization of griffithsin as a systemic HIV therapy	SubAward PI	Fuqua	5 years	1,688,589 Not Awarded
Gupta, Ramesh					
NCI STTR Phase I	A New Technology to Isolate Anthocyanidins and Efficacy against Lung Cancer	PI	Gupta; Spencer	12/16-11/17	$300,000
NCI STTR Phase II	Exosomal Drug Delivery	PI	Gupta, Spencer	7/17-6/19	$1,998,000
NCI R01	Novel Adjuvent Therapy for Lung Cancer	PI	Gupta	7/16-6/21	$2,100,000

DoD	Adjuvant Therapy for Breast Cancer by Exosomal (Nano) Formulation of Withaferin A	PI	Gupta	12/16-11/19	$1,100,000
DoD Postdoc fellowship	"Targeted Exosomes for oral delivery of the chemo drug, paclitaxel"	Mentor	Agrawal	12/16-11/19	
NCI R01	Management of breast cancer with berry anthocyanidins	Co-I	Munagala	7/17-6/22	$1,925,000
NIH STTR Phase I	Efficacy of the Anthocyanidins against FAP and Colon Cancer	PI	Gupta, Spencer	7/17-6/18	$300,000
Hein, David W.					
NCI R25-CA134283 (renewal; received priority score of 18)	University of Louisville Cancer Education Program	Multi-PI	Hein & Kidd	04/01/17 - 08/31/16	$1,620,000
Cempra Pharmaceuticals (OIEB 161211)	Solithromycin metabolism in rapid and slow acetylators	PI	Hein	06/01/16 – 09/30/16	$35,330
NIH P20-GM13226 (withdrawn because previous submission was funded)	Hepatobiology and Toxicology COBRE	Director for faculty career development	McClain	12/01/16 – 11/30 21	$11,230,145
NIH (U19-AI103458)	Griffithsin-based rectal microbicides for PREvention of Viral Entry (PREVENT)	Co-mentor for faculty diversity supplement	Palmer	07/01/16 - 06/30/17	$127,974
NIH R25-GM121239	Maximizing student success at the University of Louisville	PI	Hein	12/01/16 - 11/30/21	$1,705,607

NCI U01	Biomarkers of Early Detection and Risk for Cancer: The Kentucky E-DETECT Cohort	Co-I	K. and R. Baumgart-ner	07/01/17 - 06/30/22	$18,745,132
NIEHS P42 ES023716 (received priority score of 20)	Environmental exposure and cardiometabolic disease	Co-I	Srivastava	04/01/17 - 03/31/22	$13,285,987
NIH T32HL134627	Cardiovascular Sciences Training Program at University of Louisville	Internal Advisory Committe e	Kakar & Joshua	09/01/16 - 08/31/21	$1,546,492
NIH T32 (received priority score of 17)	Current Trends in Stem Cell Therapeutics	Internal Advisory Committe e	Ratajczak & Kakar	07/01/17 - 06/30/22	$1,486,242
NIH R25 GM123933	Bridge to Undergraduate Success (BUS)	Internal Advisory Committe e	Kakar & Joshua	07/01/17 - 06/30/22	$ 1,486,242.0 0
NIH R01	Causal mechanisms of NAT2-induced insulin resistance and mitochondrial dysfunction	Consultant	Joshua Knowles (Stanford University)	07/01/17 - 06/30/22	Not applicable
Hood, Joshua L.					
2 R25 CA134283-06A1	University of Louisville Cancer Education Program	Faculty Mentor	Hein, Kidd	4/1/17 - 3/31/22	pending
JGBCC Molecular Targets CoBRE Phase IV Pilot OGMB130096	Polarizing Macrophages with Exosomal Nanocarriers to Treat Melanoma	PI	Hood	7/1/16 - 6/30/18	$150,000 (Direct)
DOD: CA160529	Targeting phenotype switching via tumor-derived exosomes to inhibit melanoma progression	Co-I	McMasters	10/1/201 7- 9/30/201 9	4% effort

NIH 1R01 CA216221-01	Exosome miRNA in remodeling tumor environment and promoting malignant progression	Co-I	Hao, McMasters	1/1/2017 - 12/31/2021	4% effort
NIH SBIR Contract Phase 1, HHSN261201600054C	Continuous exosome and oncosome separations using a modified SPLITT system	Co-PI	Hood (U of L), Gale, Petersen (Espira Inc.)	9/27/16 – 6/18/17	$50,001
NIH SBIR grant phase 1, R43CA217621-01	An instrument for label-free separation and purification of exosomes	Co-PI	Hood (U of L), Petersen (Espira Inc.), Gale, Sant (U of U)	4/3/17 - 9/29/17	$50,000
NIH 1R21AI131903-01	HIV-1 induces M2 macrophage exosomes that promote and increase HIV-1 infectivity of Th2 lymphocytes	PI	Hood, Kouokam (Co-I)	7/1/17 – 6/30/19	$275,000 (Direct)
NIH 1R1CA220696-01	Exosomal Nanocarrier Mediated Activation of Macrophages to Treat Melanoma	PI	Hood	7/1/17 – 6/30/19	$275,000 (Direct)
Kidd, LaCreis					
R21CA220597	Influence of the miR-186-glucocorticoid receptor axis on aggressive prostate cancer and docetaxel sensitivity	PI	Kidd	7/1/17-6/30/19	$423,500
2R25CA134283-06A1	University of Louisville Cancer Education Program	Co-director, Co-I, Cancer Education Coordinator, Mentor	Hein/ Kidd	9/1/16-08/31/20	$1,620,000 (received a priority score of 18; chances of renewal are high)
NIGMS, NIH	Maximizing Student Success at the University of Louisville	Co-I	Hein	12/1/16-11/31/20	$1,578,111

GRNT12072718		Biomedical Research Education Coordinator, Mentor			
Kouokam, J					
NIH/1R21AI131903-01	HIV-1 induces M2 macrophage exosomes that promote and increase HIV-1 infectivity of Th2 lymphocytes	Co-I	Joshua L. Hood	2017-2019	$275,000
Lukashevich, Igor					
NIH 1R01AI12334-01	Recombinant Reassortant Vaccine Platform to Control Lassa Fever	PI	MPI	04/01/17 - 3/31/22	$1,283,330
NIH 1R01AI132253-01	Advanced Multivalent/Universal Lassa Virus Vaccine	PI	MPI	06/01/17 - 05/31/22	$1,250,000
NIH 1R21AI130964-01	A Novel Polyvalent Live-Attenuated Vaccine Against Lassa and Ebola Viruses	PI on sub	JC de la Torre	04/01/17 - 03/30/19	$67,000
DoD, Task A105	Small Animal Models for Biodefense Viruses	PI	MPI	01/15/17 - 12/30/17	$1,816,925
NIH 2R43AI088923-03	Novel DNA-Launched Attenuated Vaccine for Yellow Fever, SBIR Phase II	PI on sub	Pushko	07/01/17 - 06/30/19	$700,000
Matoba, Nobuyuki					
Molecular Targets Phase IV CoBRE Pilot Project (NIH NIGMS/ P30GM106396)	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI	Matoba	7/1/16 - 6/30/17	$75,000 funded
NIH/NCI 2 R25 CA134283-06A1	University of Louisville Cancer Education Program	Faculty mentor	Hein/Kidd	4/1/17 – 3/31/22	$1,620,000
NIH/NCI 1R21CA216447-01	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI	Matoba	4/1/17 – 3/31/19	$275,000 (total direct costs) Impact Score: 32,

					Percentile: 18.0
UofL ExCITE Product Development Grant Cycle 4 (NIH U01 HL127518 ExCITE Program)	Avaren-Fc lectibody for liver graft protection against hepatitis C virus infection	Contact PI	Matoba/Hamorsky	3/1/17 – 2/28/19	$200,000 received funding notice
NIH NIDDK/1 R01 DK114003-01	A recombinant cholera toxin B subunit variant for mucosal healing in ulcerative colitis	PI	Matoba	7/1/17 – 6/30/19	$1,250,000 (total direct costs) To be reviewed on 2/28/17
Palmer, Kenneth E.					
NIH/NIAID 3U19 AI 113182-03S1	Diversity Supplement for PREVENT U19	PI & Mentor	Palmer/ Kouokam	07/01/16 – 06/30/17	$127,974 • funded
NIH/NIAID 1 R01 AI131974-01	Engineering, Design, and Optimization of Griffithsin as a Systemic HIV Therapy	PI	Palmer / Fuqua/ Bailey-Kellogg /Griswold	04/01/17 – 03/31/22	$2,464,606 • Reviewed, not funded
NIH/NIAID T32	Inflammation and pathogenesis predoctoral training program	Co-I	Shirwan / Lamont	07/01/17 – 06/30/22	• Pending review
Jewish Heritage Foundation of Excellence (JHFE)	Griffithsin-Based Nanocarriers for the Prevention of Viral Infections	Co-I	Steinbach-Rankins	08/01/16 – 07/31/18	$300,000 • funded
Siskind, Leah J.					

1U01CA217612-01	Extrinsic selective pressures dictate intrinsic cancer biology phenotypes	PI	Beverly Siskind Clark	07/01/17 - 06/30/22	$5,898,138
1R01CA221275-01	Using physiological conditions to uncover RAS synthetic lethal targets	PI	Siskind Beverly Clark	07/01/17 - 06/30/22	$3,363,119
1U01CA213288-01	A clinically relevant model of small cell lung carcinoma and therapeutic response	PI	Beverly Siskind Clark	12/01/16 - 11/30/21	$3,465,000
1R01HL133798-01A1	Age-dependent matrisome changes predispose to injury-induced fibrosis	PI	Roman Siskind Arteel Beverly	07/01/17 - 06/30/21	$2,146,938
1R01CA211884-01	Comparing clinical and therapeutic relevance of onco-pigs and onco-mice	PI	Beverly Siskind Clark	01/01/17 - 12/31/19	$ 2,079,000
1R21DK113475-01	Suramin as a nephroprotectant in cisplatin-induced kidney injury	PI	Siskind Beverly	04/01/17 - 03/31/19	$ 423,500
Song, Zhao-Hui (Joe)					
R25CA134283-06	University of Louisville Cancer Education Program	Faculty Mentor	David W. Hein and La Creis R. Kidd	9/1/16 - 8/31/21	$1,620,000
States, J. Christopher					
1R01ES027778-01A1	Mechanism for arsenic induced carcinogenesis	PI	States	07/01/17 - 06/30/22	$2,488,085
NIH-NIEHS	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	Co-I	Wise,J	07/01/17 - 06/30/22	$1,922,755
R01ES028102-01	The role of autophagy in cadmium induced prostate carcinogenesis	Co-I	Damodaran ,Freedman	04/01/17 - 03/31/22	$3,162,030
P42 ES023716-01A1	Superfund Hazardous Substance Research And Traini Program (P42)	Int Adv Bd	Srivastava	4/1/16 – 3/31/22	~$13.4M
UofL Provost/iRFP	UofL Center for Integrated Environmental Health Sciences	PI	States	8/1/16 – 7/31/17	$250,000

UofL SOMRC	Survival Pathways in Metal-Induced Carcinogenesis	Mentor	Wise, S	10/1/16 – 9/30/17	$25,000
Wise, John Pierce, Sr.					
NIEHS/R01ES028284-01	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	PI	Wise	07/01/17 - 06/30/22	$1,922,755
Kentucky Lung Cancer Research Program	Particulate Hexavalent Chromium-Induced Exosome Release in Human Lung Cells	PI	Wise	06/01/17 - 05/31/19	$150,000
Kentucky Science and Engineering Foundation	Isomotive Dielectrophoresis for Dielectric Spectroscopy of Biological Cells	Co-PI	Williams	07/01/17 - 06/30/22	$50,000
Wise, Sandra S.					
NIEHS/R01ES028284-01	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	Co-PI	Wise	07/01/17 - 06/30/22	$1,922,755
1R01ES027778-01A1	Mechanism for arsenic induced carcinogenesis	Co-PI	States	07/01/2017 - 06/30/2022	$2,488,085
UofL Provost/iRFP	UofL Center for Integrated Environmental Health Sciences	Co-PI	States	8/1/16 – 7/31/17	$250,000
UofL SOMRC	Survival Pathways in Metal-Induced Carcinogenesis	PI	Wise, S	10/1/16 – 9/30/17	$25,000

INVITED SCIENTIFIC PRESENTATIONS
Faculty with Primary Appointments

Antimisiaris:

1. Chief Resident Immersion Training (CRIT): French Lick Indiana
    - Three day immersion in Geriatrics training for medicine residents
    - Polypharmacy sessions

2. American Society of Consultant Pharmacists Annual Meeting 2016, Dallas TX (Nov): "Just the Drugs: Psychoactive Medications".

- Annals of Long-Term Care Supplement; Dec 8, 2017 Conference Coverage
- *Annals of Long-Term Care: Clinical Care and Aging.* 2016;24(11):14-16. http://www.managedhealthcareconnect.com/content/psychotropic-drugs-and-multicomorbidity-older-adults

Arteel:

1. Research Seminar, 02/16, "Transitional changes to the matrisome and inflammatory liver disease, more than collagen and fibrosis," Dept of Bioengineering, University of Louisville.

2. Symposium, 01/16, "Tissue-organ crosstalk in alcoholic liver disease," AASLD Emerging Trends Conference: Alcoholic Hepatitis, Miami, FL.

3. Symposium, 06/16, "Organ-organ crosstalk in alcoholic liver disease," Alcoholic Hepatitis Satellite Meeting, Research Society on Alcoholism, annual meeting, New Orleans, LA.

4. Research seminar, 06/16, "Transitional changes to the matrisome and inflammatory liver disease, more than just collagen and fibrosis." West China Hospital, Sichuan University, Chengdu, China.

5. Seminar, 09/16, "Changes to the hepatic ECM and metastatic cancer risk: can we predict the 'soil?'," James Graham Brown Cancer Center, Cancer Colloquia series, University of Louisville.

6. Symposium, 09/16, "Transitional changes to the hepatic ECM in response to stress and injury," ISBRA annual meeting, Berlin Germany.

7. Research seminar, 10/16, "Transitional changes to the hepatic "matrisome" in the development of Inflammatory liver injury," University of Pittsburgh School of Pharmacy, Pittsburgh, PA.

8. Research seminar, 11/16 "Transitional changes to the hepatic "matrisome" in the development of Inflammatory liver injury," Yale University, Liver Center, New Haven, CT.

9. Moderator, 01/16, Symposium session, "Interactions of liver with other organs (gut-liver-brain-adipose axes)," AASLD Emerging Trends Conference: Emerging Trends in Alcoholic Hepatitis, Miami, FL.

10. Workshop faculty, 04/14/16, Faculty professional development workshop, "Getting your Work Published in the Best Journals," University of Louisville, Louisville, KY.

11. Ad hoc member, 04/22/16, Technical Qualifications Board (TQB) for Dr. Johnathan Phillip Kaiser for promotion to GS-14, National Center, for Environmental Assessment, USEPA, Washington, DC.

12. Attendee and participant, 05/16, AASLD Leadership meeting, Digestive Disease Week annual meeting, San Diego, CA.

13. Moderator, 05/16, Plenary Session, "Basic Science Plenary," Digestive Disease Week, annual meeting, San Diego, CA.

14. Attendee and participant, 07/16, AASLD Leadership federal liaison task force, Washington, DC.

15. Organizer and Moderator, 09/16, Symposium, "Cross-Talk between stress responses and the innate immunity in ASH/NASH," International Society for Biomedical Research on Alcoholism (ISBRA), annual meeting, Berlin, Germany.

16. Moderator, 11/16, Symposium session, "Immunotherapy and Immunity in the Liver," Basic Science Symposium, "Liver Immunology," AASLD annual meeting, Boston, MA.

17. Early morning workshop faculty, 11/16, "Mechanisms of Alcohol-induced Liver Injury and Targets for New Therapies," AASLD annual meeting, Boston, MA.

18. Moderator, 11/16, President's Choice Lecture, AASLD annual meeting, Boston, MA.

19. Moderator, 11/16, Late-Breaking Abstract Oral Session I, AASLD annual meeting, Boston, MA.

Beier, Juliane

1. Research seminar, 03/02/16. Enhancement of NAFLD Risk by Vinyl Chloride: Role of Gut-Liver-Adipose Axis. Molecular Endocrine Grand Rounds, University of Louisville, Louisville, KY.

Chen, Shao-yu

1. Yuan FQ, Liu J, Chen S-Y. Up-regulation of Siah1 by ethanol induces apoptosis in neural crest cells by CBP/P300-mediated acetylation of p53. 39th Annual Scientific Meeting of the Research Society on Alcoholism. New Orleans, Louisiana, June 25-29, 2016.

2. Yuan FQ, Liu J, Chen S-Y. MicroRNA-135a modulates ethanol-induced apoptosis in neural crest cells by targeting Siah1. 39th Annual Scientific Meeting of the Research Society on Alcoholism. New Orleans, Louisiana, June 25-29, 2016.

3. Yuan Y, Yuan FQ, Liu J, Chen S-Y. Embryonic exposure to low-dose ethanol impairs early β -cell differentiation in zebrafish by altering DNA methylation and gene expression. 39th Annual Scientific Meeting of the Research Society on Alcoholism. New Orleans, Louisiana, June 25-29, 2016.

Clark, Geoffrey

1. **"**A pan-RalGEF inhibitor to suppress Ras driven cancer and metastasis", Eli Lilly & Co.

2. **"**A first –in-class RalGEF inhibitor as an anti-Ras drug": Excite committee.

3. Postdoc Lee Schmidt Oral presentation at Annual International " Post-Translational Regulation of Cell Signaling" meeting, Salk Institute, San Diego. Talk entitled: Non-Canonical Regulation of the Hippo Pathway Endpoint, TAZ, Defines a Novel Ras/NORE1A Mediated Senescence Mechanism"

Freedman, Jonathan

1. 9th Annual Conference on Metal Toxicity & Carcinogenesis; Lexington, KY

2. 3rd International Conference of Chemistry and Environmental Health (Keynote Speaker) Cairo, Egypt

3. Symposium in honor of Jonathan Freedman, Cairo University, Cairo, Egypt

4. Invited Seminar New York University

Gupta, Ramesh

1. Plenary Speaker at the New Development at Drug Discovery from Natural Products and Traditional medicines (NIPER), SAS Nagar, India, November 2016 (Dr. Gupta had to cancel his travel plans due to family medical emergency).

Hein, David

1. Translating Laboratory Findings Towards Assessment of Tobacco-related Cancer Risk in Populations and Individuals. Herbert and Nicole Wertheim Leadership in Healthcare and Medicine Lecture, Florida International University, Miami, Florida, January 2016.

2. Integration and Translation of Laboratory Research into Environmental Cancer Risks. University of Paris-Diderot, Paris, France, June 2016.

3. Genetic Heterogeneity in the Slow Acetylator N-Acetyltransferase 2 Phenotype in Human Hepatocytes. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016.

4. Arylamine and Alkylaniline Carcinogen Metabolism in Rapid and Slow Acetylators. Seventh International Workshop on the Arylamine N-acetyltransferases, Trier, Germany, June 2016

5. PhD Program in Pharmacology and Toxicology at the University of Louisville: International Partnerships. Institute of Radiation Medicine, Chinese Academy of Medical Sciences/Peking Union Medical College, Tianjin, China, September 2016.

Hood, Joshua

1. *****Hood JL. Invited Speaker for the James Graham Brown Cancer Center, BCC and R25 summer internship programs, University of Louisville, Louisville Kentucky, June 28th, "An Introduction of Melanoma Nanomedicine"

2. *****Hood JL. Invited Speaker for the Department of Bioengineering Seminar Series, University of Louisville, Louisville Kentucky, September 13th, "An Introduction to Melanoma Nanomedicine and Exosomes"

3. *****Hood JL. Invited Speaker for the U of L MD/PhD Program Seminar Series, University of Louisville, Louisville Kentucky, December 7th, "Developing Exosomal Nanocarriers to Treat Melanoma."

4. *Hood JL. Invited Speaker for the American Society of Exosomes and Microvesicles Conference (ASEMV), **Asilomar Conference Center, in Pacific Beach California, USA, October 23rd,** "Melanoma Exosomes Promote Mixed Macrophage Polarization."

Kang, Y. James

1. Sept 22, 2016. Invited Lecture, VCR Distinguished Lecture Series "Implantation of 3D Bio-printed Vascular Grafts in Rhesus Monkeys." University of Tennessee Health Sciences Center, Memphis, Tennessee

2. Aug 4, 2016. Keynote Speech, "Rejuvenation therapy for ischemic heart disease" at the 7th Annual Conference on Stem Cells and Regenerative Medicine, August 4-5, 2016. Manchester, UK

3. Jun 11, 2016. Plenary Lecture, "Angiogenesis and ischemic heart disease" at the World Conference of Regenerative Medicine, June 11-13, 2016. Barcelona, Spain

4. May 26, 2016. Keynote Speech, "3D Bio-printing in health industry" at the International Conference of Novel Approaches to Health, Kunming, China

5. May 25, 2016. Keynote Speech, "3D Bio-printing of blood vessels" at the World Forum of Stem Cells in Health Industry, Chengdu, China.

Kidd, LaCreis

1. Jones D.Z., Hobbing K., Schmidt M.L., Clark G, Kidd, L.R. "Inhibition of miR-186 and repression of aggressive prostate cancer phenotype using a metastatic cell model". Biennial Science of Global Cancer Health Disparities in Black Men Conference. AC3 Highlights. University of Florida Health Cancer Center, Orlando, FL, November 9, 2016.

2. Bradley, C.P., Martin, T.L., Jones-Reed, D., Ragin, C., Jackson, M., McFarlane-Anderson, N., Tulloch-Reid, M., Morrison, S., Rafael Flores-Obando, R., Kimbro, S., Kidd, L.R. Impact of High Order Interactions between Inflammatory and Immune

Response Genes in Prostate Cancer among men of African Descent**,** Biennial Science of Global Cancer Health Disparities in Black Men Conference. University of Florida Health Cancer Center, Orlando, FL, November 12, 2016. (Abstract & Invited Oral Presentation)

3. Martin, T.L., Bradley, C.P., Jones-Reed, D.**,** Ragin, C., Jackson, M., McFarlane-Anderson, N., Tulloch-Reid, M., Morrison, S., Rafael Flores-Obando, R., Kimbro, S., Kidd, L.R. Non-synergistic Interaction along the CCR5-CXCR5-CCR7 axis and Prostate Cancer, Biennial Science of Global Cancer Health Disparities in Black Men Conference. University of Florida Health Cancer Center, Orlando, FL, November 12, 2016. (Abstract & Invited Oral Presentation)

Lukashevich, Igor

1. American Society for Microbiology, Biodefense and Emerging Diseases Research Meeting, February 8-10, 2016, Washington, DC.

2. American Society of Virology. The 35th Annual Meeting, June 18-20, 2016, Blacksburg, VA.

3. The 4th Antiviral Congress, 18-21 September 2016, Sitges, Barcelona, Spain.

4. Keystone Symposia on Molecular and Cellular Biology. Hemorrhagic Fever Viruses, December 4-9, 2016, Santa Fe, NM.

Matoba, Nobuyuki

1. "Oral administration of a cholera vaccine antigen induces mucosal healing in the colon" Price Institute for Surgical Research, Department of Surgery, University of Louisville School of Medicine, February 11, 2016.

2. "An oligomannose-specific lectin-Fc fusion protein against HIV infection" Department of Microbiology and Immunology, University of Louisville School of Medicine, March 10, 2016.

3. "Plant viral vector-based transient expression for rapid screening and characterization of novel protein pharmaceuticals" The Phyto-Engineering Research Center workshop, University of California Davis, April 7 – 8, 2016.

4. "CTBp project update" The University of Tokyo, July 5, 2016.

5. Invited Talk and Session Chair (Plant Biotech) at the 27th International Conference on Arabidopsis Research, Gyeongju, South Korea, June 29 – July 3, 2016.

Palmer, Kenneth E.

1. March 2016 – invited presentation at the Microbicides Trial Network annual meeting in Washington DC

2. April 2016 – invited presentation at the PERC Plant Made Pharmaceuticals symposium at UC Davis – unable to attend because of illness

3. Organized, hosted and chaired the NIH PREVENT U19 annual meeting, with 40 participants from 6 different states and 3 different countries. (November 2016)

4. Organized, hosted and chaired the Center for Predictive Medicine Annual Retreat (November 2016)

Siskind, Leah

1. Invited Speaker, 2016 Gordon Research Conference on Glycolipid & Sphingolipid Biology, 03/06/2016 - 03/11/2016, Renaissance Tuscany Il Ciocco Resort, Lucca (Barga), Italy

2. 2016 T35DK072923-10 Summer Endocrine Research Training Seminar Series, 1.5 contact hours, Acute Kidney Injury, July 2016

3. 2016 Endocrinology Fellows Grand Rounds, "Role of Bioactive Lipids in Acute Kidney Injury", February 2016

4. 2016 Oncology Grand Rounds, " Cisplatin-induced Acute Kidney Injury", January, 2016

5. 2016 James Graham Brown Cancer Center, Molecular Targets Seminar Series, June 2016 seminar, Surplatin—A potential novel agent for the prevention of cisplatin-induced acute kidney injury.

6. Invited Speaker, 2016 Gordon Research Conference on Glycolipid & Sphingolipid Biology, 03/06/2016 - 03/11/2016, Renaissance Tuscany Il Ciocco Resort, Lucca (Barga), Italy

Song, Zhao-Hui (Joe)

1. Mnpotra J, Qiao Z, Hurst D, Reggio P and Song ZH**.** Identification of the residues at the cannabinoid CB2 receptor homodimer interface. International Cannabinoid Research Society Conference, Bukovina, Poland, June 2016.

2. Griffith A, Seltzman H, Mnpotra J, Laun AS, Song ZH., Hurst D, and Reggio P. Covalent analogs of the allosteric ligand ORG27569: Molecular dynamics, synthesis, and pharmacology studies directed at identifying the CB1R allosteric binding site. International Cannabinoid Research Society Conference, Bukovina, Poland, June 2016.

3. Laun AS Reggio P and Song ZH. The modulatory effects of pregnenolone on CB1 and CB2 cannabinoid receptors. Research Louisville!, Louisville, KY, October 2016.

States, J. Christopher

1. "Arsenic, Mitotic Arrest, miRNAs & APC/C" Institute of Environmental Health

Sciences, Wayne States University, 1/28/16

2. "Arsenic, Mitotic Arrest, miRNAs & APC/C" Dept. Environmental and Occupational Health Sciences, UofL, 2/18/16

3. States JC, 'miR-186 in Arsenic-induced Skin Cancer', 9th Conference on Metal Toxicity & Carcinogenesis, Lexington, KY, October 17 –20, 2016

Wise, John

1. Invited Speaker: "The Impact of Prolonged Particulate Hexavalent Chromium Exposure on DNA Double Strand Break Repair". Presented at the Eighth Conference on Molecular Mechanisms of Metal Toxicity and Carcinogenesis, University of Kentucky, Lexington, Kentucky.

2. Invited Speaker: "The Role of Centrosomes in Chemical Carcinogenesis: Hexavalent Chromium Induces Aberrant Centriole and Centrosome Separation and Centrosome Amplification". Presented at the XIV International Congress of Toxicology, Merida, Mexico.

3. Invited Speaker: "The Role of Centrosomes in Chemical Carcinogenesis: Hexavalent Chromium Induces Aberrant Centriole and Centrosome Separation and Centrosome Amplification". Presented at the triennial meeting of the EMBO workshop: Chromosome Segregation and Aneuploidy, Galway, Ireland.

4. Invited Speaker: "A Whale of a Tale: How can research on Moby Dick's descendants inform us about global pollution". Presented at "Beer with a Scientist", Louisville, Kentucky.

5. Invited Speaker: "Mechanisms for Cr(VI) Induced Carcinogenicity: Perspectives from Past and Current Research" Presented in the Workshop Session: The Cancer Risk Assessment for Ingested Hexavalent Chromium: Challenges and Controversies at the Annual Meeting of the Society of Toxicology (SOT).

Wise, Sandra

1. "How Cells Evade Apoptosis after Genotoxic Exposure to Hexavalent Chromium" Presented at the Cancer Center Colloquia Series, University of Louisville. February 2016.

INVENTIONS, DISCLOSURES, LICENSE/OPTION AGREEMENTS, PATENT AWARDS, AND BUSINESS STARTUPS
Faculty with Primary Appointments

Antimisiaris, Dee

1. U.S. Provisional Patent Application; Serial No. 62/115,280; DISEASE MANAGEMENT PLATFORM AND METHOD FOR PROVIDING PATIENTS AND CAREGIVERS WITH INFORMATION NECESSARY IN THE TREATMENT OF DEMENTIA

Clark, Geoffrey J.

1. Disclosure No. 16069: NOVEL SMALL MOLECULE INHIBITORS OF THE RAS ONCOPROPTEIN

Gupta, Ramesh

1. University of Louisville Research Foundation filed the following patent applications to protect the valuable technology described in ULRF Research Disclosure, titled "Milk Derived Microvesicle Compositions and Related Methods": Provisional filed Feb 2013; PCT filed Feb 2014; U.S. patent filed August 2015. Inventors – R.C. Gupta, R. Munagala, F. Aqil and J. Jeyabalan. Office actions were pursued for this pending patent application in Summer 2016

Matoba, Nobuyuki

1. Patent Application
   U.S. Provisional Patent Application Serial No. 62/186,151
   Title: Compositions and methods for treating cancer and promoting wound healing

2. Research Disclosure
   #16014: Avaren-Fc lectibody for broad spectrum cancer immunotherapy and diagnosis

Palmer, Kenneth E.

1. Founder and Managing Director of Intrucept Biomedicine LLC

2. PCT Patent Application "Griffithsin-Mutants" E-065-2015/0-PCT-02

DEPARTMENTAL COURSES

Pharmacology instruction in the medical school curriculum was provided in an integrated Disease and Therapeutics course. Drs. Myers and Antimisiaris served as thread directors.

Pharmacology and Dental Therapeutics course to dental students. Dr. Steven Myers served as course director.

Pharmacology course to second year students in the Dental Hygiene Program. Dr. Steve Myers served as course director.

Basic Pharmacology course for undergraduate students. Dr. Steven Myers served as course director.

The Department team taught several courses for graduate students. The individual courses and course directors included:

PHTX 660 – Principles of Drug and Chemical Action (Dr. Ceresa)

PHTX 606 – Pharmacology Seminar (Dr. Clark)

PHTX 661 – Molecular Toxicology (Dr. G. Arteel)

PHTX 625 – Scientific Writing (Dr. G. Arteel)

PHTX 655 – Neuropharmacology (Dr. Song)

PHTX 656 – Cardiovascular and Renal Pharmacology (Drs. Kang and Siskind)

PHTX 657 – Endocrine and Metabolic Pharmacology (Drs. G. Arteel and J. Arteel)

PHTX 658 – Selective Toxicity and Chemotherapy (Dr. Siskind)

PHTX 674 – Research Methods in Pharmacology & Toxicology III (Drs. Song and States)

PHTX 675 – Research Methods in Pharmacology & Toxicology IV (Drs. Song and States)

PHTX 618 – Biostatistics (Dr. Kidd)

PHTX 618 – Career Opportunities in Biomedical Sciences (Drs. Merten and States)

PHTX 619 – Research (Dr. States)

PHTX 631 – Risk Assessment (Dr. Lipscomb)

PHTX 651 – Neonatal Pharmacology

PHTX 616 – Advanced Pharmacology

PHTX 641 – Pharmacology I (Drs. Ceresa and Song)

PHTX 643 – Toxicology I (Drs. Freedman and John Wise, Sr.)

PHTX 652 – Geriatric Pharmacology (Dr. Myers)

STANDING COMMITTEES

Graduate Student Affairs and Curriculum Committee
Dr. Chris States (Chair)
Dr. Brian Ceresa (ex officio)
Dr. Leah Siskind (2016)
Dr. Geoff Clark (2017)
Dr. Gavin Arteel (2018)
Student rep: Marcus Stepp
Student rep: Samantha Carlisle

Graduate Student Admissions and Recruitment Committee
Dr. Brian Ceresa (Chair)
Dr. Chris States (ex officio)
Dr. Steve Myers (2016)
Dr. Shao-yu Chen (2017)
Dr. John Wise Sr. (2018)

SIBUP/Grievance Committee
Dr. Nobuyuki Matoba (Chair)
Dr. Michael Merchant (2016)
Dr. Ramesh Gupta (2017)
Dr. Joe Song (2018)

Teaching Evaluation Committee
Dr. Steve Myers (Chair)
Dr. Gavin Arteel (2016)
Dr. Joshua Hood (2017)
Dr. Leah Siskind (2018)

Seminar Committee
Dr. Geoff Clark (Chair)
Dr. Levi Beverly (2016)
Dr. Igor Lukashevich (2017)
Dr. Calvin Kouokam (2018)

Events Committee
Dr. La Creis Kidd (Chair)
Hannah Bitter
Blair Cade
Florence Su
Dr. Swati Joshi-Barve (2016)
Dr. Juliane Beier (2017)
Dr. Sandra Wise (2018)
Student rep: Marcus Stepp

Wenzhou Medical & Jilin University Task Force
Dr. David W. Hein (Chair)
Dr. Lu Cai
Dr. Wenke Feng
Dr. James Kang
Dr. Joe Song
Dr. Yi Tan

NCI CANCER RESEARCH PROGRAM

Emma Adkins
University of Kentucky undergraduate
Faculty Mentor: Haribabu Boddului, PhD
Research Project: Crystalline Silica Mediated Inflammation: Role of Mast Cells

Kaitlyn Adkisson
Western Kentucky University undergraduate
Faculty Mentor: Elizabeth Cash, PhD
Research Project: Nutritive Intake Relates to Activated Cytotoxic T Cells in Lung Cancer Patients

Saira Ahmed
University of Louisville Dental Student
Faculty Mentor: Richard Lamont, PhD
Research Project: Detecting the Presence of Porphyromonas gingivalis in Oral Squamous Cell Carcinoma

Yomna Amer
University of Louisville undergraduate
Faculty Mentor: Brian Clem, PhD
Research Project: The Effect of Reactivation of PRb in the Metabolism of Cancer Cells

Kyle Bilyeu
University of Louisville undergraduate
Faculty Mentor: Chi Li, PhD
Research Project: Sensitizing Pancreatic Cancer Cells to Chemotherapeutics by Modulating Intracellular Iron Homeostasis

Christian Bradley
Howard University graduate
Faculty Mentor: La Creis, Kidd, PhD, MPH
Research Project: Impact of High Order Interactions Between Inflammatory and Immune Response Genes in Prostate Cancer Among Men of African Descent

Charles (Kyle) Castaneda
University of Louisville undergraduate
Faculty Mentor: Brian Clem, PhD
Research Project: Effect of Pharmacological Inhibition of Phosphoserine Aminotransferase (PSAT1) on Metastatic Breast Cancer Motility

Phillip Chuong
University of Louisville undergraduate
Faculty Mentor: Lacey McNally, PhD
Research Project: Detection of Pancreatic Cancer Using a Modified Gelatin Nanocontrasting Agent

Kayla Feagins
University of Louisville undergraduate
Faculty Mentor: Susan Galandiuk, MD
Research Project: Circulating Plasma MicroRNA in Colorectal Neoplasia: A New Role in Assessing Response to Therapy

Wesley Field
University of Louisville medical student
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: Quality of Life Assessment for Patients Undergoing Irreversible Electroporation for Treatment of Locally Advanced Pancreatic Cancer

Olivia Fields
University of Louisville undergraduate
Faculty Mentor: Sandra Sephton, PhD
Research Project: Rest-activity Rhythms and Quality of Life in Lung Cancer Patients

Zackary Fitzsimonds
Middle Tennessee State University graduate
Faculty Mentor: Richard Lamont, PhD
Research Project: Differential Regulation of Long-non coding RNAs by Poryphoromonas gingivalis in Oral Squamous Cell Carcinoma

Benjamin Fouts
Earlham College undergraduate
Faculty Mentor: Lacey McNally, PhD
Research Project: Characterization of acidic pH functionalized mesoporous silica nanoparticles for ovarian cancer diagnostics

Madison Furnish
University of Louisville undergraduate
Faculty Mentor: David Hein, PhD
Research Project: Investigation of CRISPR/Cas9 Arylamine N-Acetyltransferase 1 Knockouts in MDA-MB-231 Cell Lines via Anoikis and Invasion Assays

Ashley Gleaton
Cornell University undergraduate
Faculty Mentor: Geoffrey Clark, PhD
Research Project: Functional Interaction Between NORE1A and Mutationally Activated RIT(Q79) Represses Malignant Transformation in Lung Cancer

Zahara Gully
University of Louisville undergraduate
Faculty Mentor: Demetra Antimisiaris, PharmD
Research Project: Tamoxifen: A Study in Pharmacovigilance

Adayshia Haddock-Pitt
Spelman College undergraduate
Faculty Mentor:Barbara Polivka, PhD
Research Project: Effectiveness of Reducing Home VOC Measurements using One Inch Carbon Furnace Filters

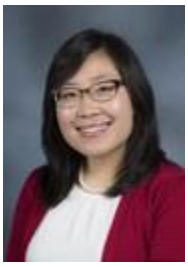
Adaline Heitz
University of Louisville undergraduate
Faculty Mentor: Kathy Baumgartner , PhD
Research Project: Healthy Lifestyle Impact on Breast Cancer Specific and All-Cause Mortality

Parker Howard
University of Louisville undergraduate
Faculty Mentor: Paula Bates, PhD
Research Project: Investigating HGPRT as a Component of an AS1411 Prodrug Mechanism

Maya Huss
University of Louisville undergraduate
Faculty Mentor: Jill Steinbach-Rankins, PhD
Research Project: Transport and Distribution of Stealth and Cell Penetrating Nanoparticles in Cervical Cancer Tissue Mimics

Kevin Jacob
University of Louisville undergraduate
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: Identification of Aberrant Wnt/ß-catenin Signaling on Cancer Stem Cell Activation in Hepatocellular Carcinoma

Corey James Ketchem
University of Louisville medical student
Faculty Mentor: Levi Beverly, PhD
Research Project: Novel Drug Combinations Sensitize Leukemia Cells to a Bcl-2 Inhibitor



Josephine Kim
University of Kentucky undergraduate
Faculty Mentor: Jun Yan, MD, PhD
Research Project: Combining Natural Compound ß-glucan with Immune Checkpoint Inhibitor Therapy to Promote Antitumor Immunity

Tiana Martin
Spelman College undergraduate
Faculty Mentor: La Creis Kidd, PhD, MPH
Research Project: The Impact of Complex Interactions of Chemokine Sequence Variants on Prostate Cancer Risk among men of African Descent

Delvon Mattingly
University of Louisville graduate
Faculty Mentor: Richard Baumgartner, PhD
Research Project: Health Behaviors and Breast Cancer Risk in Non-Hispanic White & Hispanic Women

Grant McKenzie
University of Louisville medical student
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: Comprehensive Geriatric Assessment for Hepatopancreatobiliary Surgical Patients – A Systematic Review

Megan Mercer
University of Louisville medical student
Faculty Mentor: Nicholas Ajkay, MD
Research Project: Estimated Percentage of Breast Volume Excision and Its Relationship with Quality of Life and Satisfaction After Breast Conservation Therapy for Breast Cancer

Alex Palumbo
University of Louisville medical student
Faculty Mentor: Eleanor Lederer, MD
Research Project: KCC Expression and Function May Contribute to Human Cancer Cell Motility

Sophia Sears
Goshen College undergraduate
Faculty Mentor: Jonathan Freedman, PhD
Research Project: Effects of therapeutic compounds on cadmium-induced prostate cancer

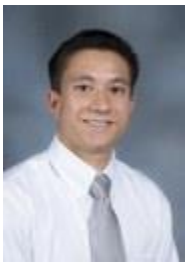
Seth Sereff
University of Louisville undergraduate
Faculty Mentor: Paula Bates, PhD
Research Project: Elucidating the Mechanism of XB05 in Malignant Cells

Nazeer Shaikh
University of Louisville medical student
Faculty Mentor: Neal Dunlap, MD
Research Project: A Prospective Study of Nasociliary Function and Rhinosinusitis Symptomatology in Patients with Oropharyngeal Squamous Cell Carcinoma Receiving Intensity Modulated External Beam Radiotherapy: Preliminary Results

Mary Ann Smith
Mississippi State University undergraduate
Faculty Mentor: Joshua Hood, MD, PhD
Research Project: Paracrine Induction of Macrophages by Melanoma Exosomes

Paula Stepp
Western Kentucky University undergraduate
Faculty Mentor: Mariusz Ratajczak, MD, PhD
Research Project: Imprinting Status of Paternally Imprinted Tandem Genes and their Expression in Ovarian Carcinoma Cell Lines

Segen Tella
University of Louisville undergraduate
Faculty Mentor:Donald Miller, MD, PhD
Research Project: The Effect of G-quadruplex Oligonucleotides Sequences Targeting cMYC, SOX2 and HTERT in Melanoma Cell Lines



Matthew Ullum
University of Kentucky undergraduate
Faculty Mentors: Goetz Kloecker, MD and Jun Yan, MD, PhD
Research Project: Decrease of MDSCs by Oral ß-glucan in Lung Cancer Patients

A Resolution in Recognition of the Service of Dr. Steven R. Myers to the University of Louisville

Whereas, Dr. Steven R. Myers was recruited to the University of Louisville in 1991 and over a 25 year career was promoted through the ranks to Professor and Associate Chair for Professional Education in the Department of Pharmacology and Toxicology; and

Whereas, Dr. Myers served as course director for numerous pharmacology-based courses taught to medical, dental, nursing, graduate, and undergraduate students. He was recognized for his innovation in teaching via receipt of the Health Science Center Technology Innovation Teaching Award and by his nomination for numerous teaching awards at the University of Louisville; and

Whereas, Dr. Myers also had an outstanding international reputation for excellence in teaching and research. He was the founding editor of the *Journal of Medical Education and Curricular Development.* He was frequently invited as a teacher and examiner of medical and graduate students at universities in Egypt and the Caribbean. He was very active and successful in international educational and research collaborations, particularly in Egypt. He led the effort to initiate a PhD partnership with Cairo University and Ain Shams University; and

Whereas, Dr. Myers served as an invited plenary speaker and keynote speaker at international meetings held in Egypt last year. He chaired an international symposium entitled "Recent Challenges beyond the Usual Toxicological and Public Health Challenges in Africa" at the annual meetings of the Society of Toxicology; and

Whereas, Dr. Myers had an active research career including studies of drug and xenobiotic metabolism and biomarkers of chemical exposure and effects. He developed the first widely applicable biomarker for human exposure to PAH (polycyclic aromatic hydrocarbons) through his development of chromatographic and mass spec techniques which allowed the detection of hemoglobin adducts of PAH in maternal and fetal blood; and

Whereas, Dr. Myers served on the United States Environmental Protection Agency technical qualifications review panel for the evaluation of individuals for promotion in the United States government and frequent reviewer of NIH grant proposals. He was a member of the U.S. Department for Health and Human Services Centers for Disease Control Environmental Safety and Occupational Health Study Section; and

Whereas, Dr. Myers served as editor or associate editor of several scientific journals. He held leadership positions in several scientific organizations, including Vice President and President of the Ohio Valley Society of Toxicology, Chair of the Awards Committee and Secretary/Treasurer of the International Society for Polycyclic Aromatic Compounds, and Secretary/Treasurer of the Risk Assessment Specialty Section of the Society of Toxicology; and

Whereas, Dr. Myers served on numerous committees within the School of Medicine and at the University. These committees included the School of Medicine Faculty Forum (including service as secretary and vice chair), University of Louisville Graduate Council, University of Louisville Faculty Senate and its Academic Programs Committee, the School of Medicine Admissions Committee, Educational Policy Committee, and Second Year Curriculum Committee, the Department of Pharmacology and Toxicology Graduate Recruitment and Admissions Committee, and the Department Faculty Teaching Evaluation Committee he chaired; and

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

Whereas, Dr. Myers' death on December 4, 2016, is a great loss to his friends and family, to the Department of Pharmacology and Toxicology, the Schools of Medicine and Dentistry, the University of Louisville and to the entire scientific community, all of whom hold him in highest respect and esteem; now

Therefore Be It Resolved, we extend our deepest sympathy to his wife Jane and children Alex and Katie; and

Be It Further Resolved that this resolution adopted by the Department of Pharmacology and Toxicology on the 6th day of December be spread upon the minutes of the University of Louisville Faculty Senate this 7th day of December in the year 2016.

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University of Louisville School of Medicine
Pharmacology and Toxicology Chair Review (2011-2015)
Report to Dr. Toni Ganzel, Dean
November 30, 2016

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University of Louisville School of Medicine
Pharmacology and Toxicology Chair Review Committee
Report to Dr. Toni Ganzel, Dean

1. Introduction

In August, 2016 Dr. Toni Ganzel, Dean of the School of Medicine, appointed a committee to review the stewardship of David Hein, Ph.D., as Chair of the Department of Pharmacology and Toxicology for the period 2011-2015. The Committee met for the first time on September 27, 2016 and was charged by Dr. Ganzel to conduct the review in accordance with the applicable policies and guidelines of the University of Louisville and the School of Medicine. After receiving its charge, the Committee elected Dr. Ashok Kumar as Chair.

Dr. Hein was appointed Chair on August 1, 1997. This is the third review of Dr. Hein's performance as Chair.

This report includes a listing of information resources used by the Committee, a summary of the key findings, and the Committee's recommendation to the Dean. Copies of survey results are included as an appendix to this report.

2. Committee Membership

Ashok Kumar, Ph.D., Dept. of Anatomical Sciences and Neurobiology
Luis Marsano, M.D., Dept. of Medicine
Suresh Tyagi, Ph.D., Dept. of Physiology and Biophysics
Gary Vitale, M.D. Dept. of Surgery
Esma Yolcu, Ph.D., Dept. of Microbiology & Immunology

3. Materials Reviewed

A. Questionnaires
B. Narrative Performance Evaluations
C. Dr. Hein's current Curriculum Vitae
D. Dr. Hein's 5-year progress report

4. Interviews Conducted

A. Dr. Hein – Introductory meeting with full Committee
B. Faculty of the Department

5. Summary of Committee Findings

Overview:
The committee concluded that the Department of Pharmacological and Toxicology has been benefitted from the exemplary leadership of Dr. David Hein. The surveys, questionnaires, and interviews with faculty members at all levels further attest that Dr. Hein is providing excellent leadership to the department. The department has accomplished the teaching and research mission of the School of Medicine. There has been a major improvement in the extramural funding, recruitment of faculty and students, research publications, and awards in the department during the past five years. His own funding and research productivity is also excellent. In general, the committee finds that the faculty members, staff, and students are all highly satisfied with his leadership role and would like to have him chair for the next five years.

A. Academic Program (teaching):

Dr. Hein's has made tremendous contributions to the teaching and arranging resources to advance pharmacology education at the University of Louisville. His department is making a significant contribution in teaching Toxicology and Pharmacology at the health science center campus. A number of faculty members in the department contribute to teaching every year. The assignment of teaching of each faculty member is based on their percentage efforts towards teaching. In general, the faculty members are highly satisfied with their teaching load in the department. They commended Dr. Hein that he is careful not to put extra burden on faculty members who have research program as well. There has been no instance where any issue related to teaching came to the committee's notice when interviewing departmental faculty. The faculty survey also demonstrates strong commitment of Dr. Hein to collaborative teaching and education. The recommendation letters received by the committee are highly positive and encouraging about his leadership role in teaching. In summary, pharmacology education is a key component of healthcare mission of the school and Dr. Hein is providing outstanding leadership to achieve excellence on this aspect.

The Department of Pharmacology and Toxicology is also one of the leading departments for graduate student education and research. The department recruits an average of 12-14 students in M.S. and Ph.D. programs. The presence of students from all over the world and various ethnicities clearly suggest that the department is committed to the University's diversity plan. The success rate of these students is very high. For example, in year 2015, 4 Ph.D. and 8 M.S. degrees were awarded by the department. Graduate students continue to publish their work in peer-reviewed journals. Many graduate students received prestigious fellowships and awards in the past five years. They presented their research work in regional, national, and international conferences. Moreover, many of their graduate students got 1st and 2nd place at the annual Research Louisville symposium. Dr. Hein also leads a R25 Cancer education program that has produced more than 200 professionals around the nation. The student survey is highly positive for education and research at the graduate level. Dr. Hein is available to the students and follows an open-door policy. He certainly cares about success and academic

growth of graduate students. He has recently initiated an international collaboration at Universities in China and Egypt. In this program, students are recruited to the Ph.D. program of the department. The criteria for such recruitment are personal interviews and recommendations by the Dean and faculty members of their parent schools. In general, faculty members feel that the students are well-trained and they provide excellent help to the PIs in their research. However, there is a small concern that these students are selected without GRE and sometimes they have problems in speaking English. The committee recommends that some more stringent criteria should be used. The students should take GRE or TOFEL before they are recruited at UofL. In general, the committee feels that Dr. Hein is making good effort and is a role model to develop international collaborations in research and education. Overall, the committee found that Dr. Hein has formulated outstanding teaching and graduate research program in Pharmacology and Toxicology which will further expand in the coming years.

B. Research:

1) Personal Research program:

Dr. Hein has demonstrated exemplary research productivity and distinction in the field of pharmacology and toxicology since his appointment as the Chair of Department of Pharmacology and Toxicology. His research focus is on molecular epidemiology of cancer susceptibility, including pharmacogenetics and personalized medicine, trying to understand and identify individuals genetically susceptible to develop cancer when exposed to environmental and occupational chemicals. Dr. Hein's contributions to the field of cancer research, pharmacogenetics, and toxicology have been well recognized. He has authored over 230 peer-reviewed scientific publications, including articles and book chapters and published 14 of these publications in the last 5 years. Dr. Hein has coauthored over 580 abstracts presented at national and international meetings. His publications have been cited (over 9500 citations) impressively in other scholarly scientific literature with an h-index of 48. He currently serves on the editorial boards of seven international journals and has been invited as a speaker in more than fifteen National and International conferences and symposia/seminars in the last five years. Dr. Hein's research has been continuously supported by Federal and non-Federal funding agencies. He is currently Principle Investigator on an NIH/NCI R25 and Co-Investigator/Co-Mentor award (total amount is $1,578,940). He also serves as Mentor/Co-mentor/Co-investigator/Director or Co-director on NIEHS T35/NIH U19/NIH R15/NIH P20 and NIH T32 grants that totals over $14 million.

2) Departmental Research.

The Department of Pharmacology and Toxicology has shown a gradual and steady increase in the funding (from $3 million to $7 million) for research over the past 5 years under Dr. Hein's leadership as department chair. His department has recruited seven new faculty with a primary appointment, five new faculty with a secondary appointment, and one adjunct faculty over the last couple of years. These recruitments have strengthened the research productivity within the department impressively. The new recruitments not only have brought in major grant funding, but also continued their productivity by obtaining external funding and publishing extensively. The exemplary and supportive research environment created by Dr. Hein as Chair tremendously contributes to this

collective success. The Department of Pharmacology and Toxicology plays an exemplary role on campus by partnering and collaborating with other departments, divisions, and centers under Dr. Hein's visionary leadership. As a result, the Department has contributed to the success of School of Medicine by contributing to the efforts in obtaining major grant funds, such as Hepatobiology & Toxicology COBRE grant that brings in over $11,000,000. He has made remarkable contribution to the promotion of the Department and Institution nationally and internationally as demonstrated by an approved international partnership with Wenzhou Medical University and Jilin University in China and Cairo University in Egypt to enroll Ph.D. students at the University of Louisville. These international new Ph.D. partnerships bring in very competitive graduate students to work at UofL research laboratories that contribute tremendously UofL's scientific growth.

C. Department Administration:

1. Internal Evaluation: Surveys were given to the faculty, staff and alumni of the Department of Pharmacology & Toxicology. The faculty survey includes 54 standardized questions that evaluate the leadership, response under pressure, understanding of the difficulties and challenges for faculty, willingness to admit mistakes, ability to inspire cooperation, distribution of responsibilities, vision, responsiveness and support of faculty members, as well as the guidance given by the Chair in the process of scholarly activities and professional promotion. Overall, the questionnaire was extremely positive with 87% or more of the faculty giving a positive or very positive review on the leadership and support given by Dr. Hein. During in-person interviews with different faculty members at all levels in their career, all were extremely complimentary of the strong leadership and close attention that Dr. Hein offers to all faculty members. They reported that Dr. Hein is always interested and supportive on their success in their academic careers and promotion inside the institution. It was clear from the interviews that the presence of Dr. Hein is very strong in the department, and even now that he has other institutional obligations due to his activities in the Provost's Office, he remains a strong leader for his faculty. The only criticism given was not directed at him but to the University itself that gives limited resources for the function of Pharmacology education.

The review by the staff of the Department of Pharmacology & Toxicology is based in a standardized survey of 40 questions that was answered by 62.5% of members. This review by the staff was also very positive with 85% or more of the members giving a very strong or strong endorsement of Dr. Hein. Overall, Dr. Hein is seen as a strong leader that inspires the respect of faculty and staff and remains composed under pressure, as well as being willing to accept suggestions from others and to admit mistakes. He is also seen as someone who honors his commitments to his staff and makes an effort to retain and promote his personnel, including women and minorities. The descriptive evaluation by staff was also extremely strong, recognizing the leadership and support that he offers to members of his department.

External Evaluation: The Alumni Survey was sent to eight alumni, and six of them responded. In the survey, there were 29 standardized questions that covered the areas of

leadership, vision, humility, and ability to retain and promote faculty members, as well as the degree of respect he receives from former trainees. This alumni survey was also strongly positive with all members either strongly agreeing or agreeing with the positive characteristics that Dr. Hein shows as Chair of the Department of Pharmacology & Toxicology. Narrative comments described him as "a wonderful leader with a commitment to the education and success of his students, researchers, medical students and residents." External reviews from distinguished members of the University of Louisville faculty include a former Vice Dean for the School of Medicine, the Executive Vice President for Health Affairs/Research, the Chair from the Department of Physiology, the Vice Provost for Diversity and International Affairs, the Director of the Diabetes and Obesity Center, and the Associate Vice President for Innovation and Translational Research were all extremely positive, giving Dr. Hein strong support for his outstanding leadership and dedication to the Department of Pharmacology & Toxicology.

In summary, the reviews about the administrative skills of Dr. Hein in the Department of Pharmacology & Toxicology have been extremely positive with strong support to his leadership skills and his vision for the Department for future growth.

D. Finances

The department appears to be in a good shape financially. There has been a tremendous increase in the extramural grant support in the past years. Many of the departmental faculty have their own RO1 awards. Some of the faculty members were recruited based on their funding in previous institutions. However, they are able to renew or obtain new funding after joining the department. The department has over 6 million dollars which includes general funds, endowments, and sponsored programs. Based on the financial report of the department provided to the committee, it is clear that Dr. Hein spends departmental funds wisely which is also reflected by balance in Funds. The administrative staff in departmental office is quite minimal which may help save some funds for other research and education activities in the department. All faculty members agreed that Dr. Hein maintains transparency in departmental fund spending and provides extra supports to investigators who have for some reason run out of funds for their research. The committee found no concern about the financial situation of the department.

6. Committee Recommendation

The Committee unanimously agreed that Dr. David Hein provided outstanding leadership to the department and recommends his continuation of the chair of Department of Pharmacology & Toxicology.

During the review process, a few minor items came to the Committee's attention that the Committee believes would be worthy of Dr. Hein's consideration during the next five years. These items are listed below:

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1). More stringent criteria should be adopted for recruitment of graduate students through the international collaboration. This includes GRE and TOFEL tests.

2). In addition to the graduate program director, Dr. Hein should pay a little extra attention to the graduate students. It will be helpful to have regular meetings with students and try to address their concerns.

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Respectfully submitted,

Pharmacology and Toxicology Chair Review Committee

Ashok Kumar, Ph.D.

Luis Marsano, M.D.

Suresh Tyagi, Ph.D.

Gary Vitale, M.D.

Esma Yolcu, Ph.D.