UNIVERSITY OF LOUISVILLE®

SCHOOL OF MEDICINE

Department of Pharmacology & Toxicology

2015 Annual Report

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Department of Pharmacology and Toxicology-2015

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.

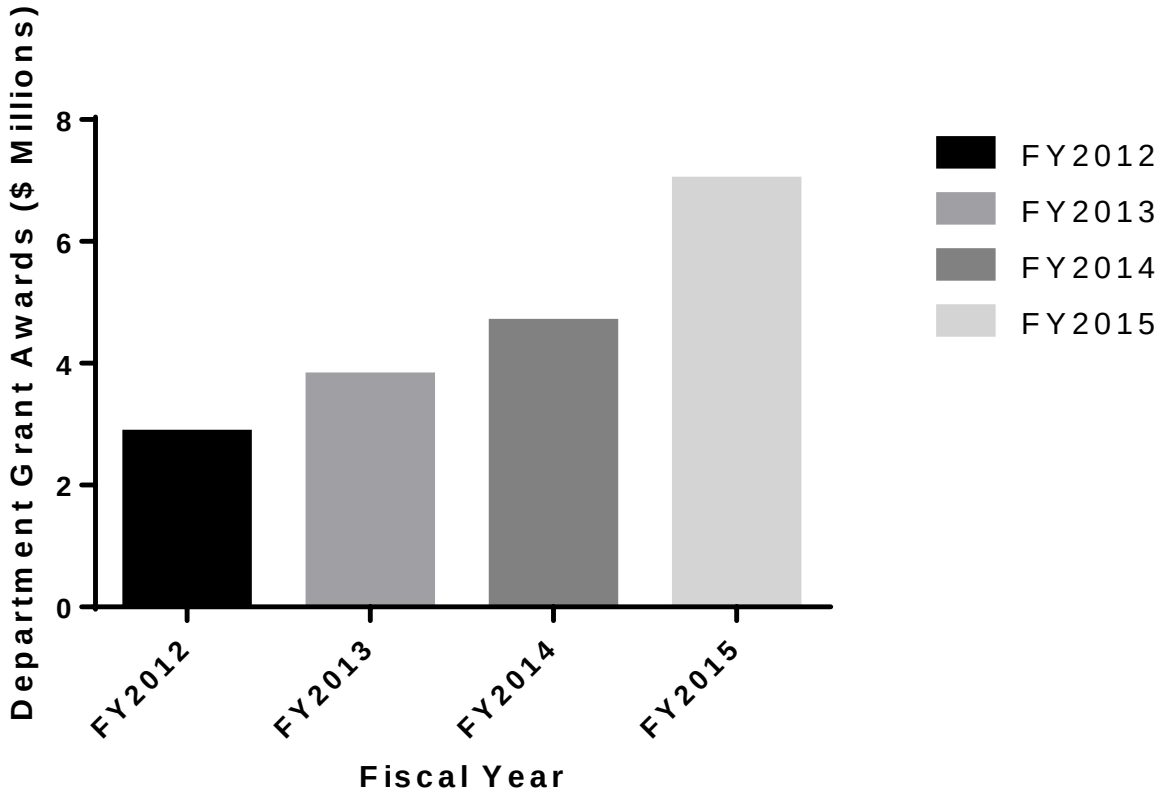
OVERVIEW

2015 was a time of major changes in the Department of Pharmacology & Toxicology. Following numerous retirements over the past few years, the Department added seven new faculty with primary faculty appointments, five new faculty with secondary faculty appointments, and an adjunct appointment.

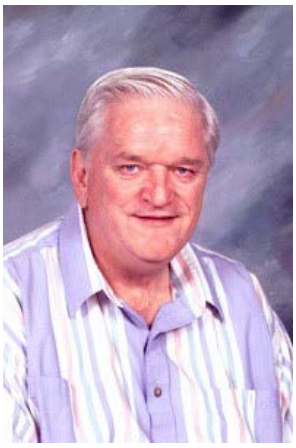
New PhD partnerships were approved with Jilin University and Cairo University. Program review of the Department of Pharmacology and Toxicology graduate programs were highly positive (with final approvals to occur in 2016).

The administrative offices and staff for the Department of Pharmacology and Toxicology transitioned from the 13th floor of the Research Tower to the 1st Floor of the Kosair Charities Clinical and Translational Research Building (KCCTRB). This change reflects the location of the great majority of Departmental faculty, staff, and students on all six floors of the KCCTRB.

Major increases in receipt of extramural grant support continued in FY2015, and the Department of Pharmacology and Toxicology was ranked 28th among all US medical schools in receipt of NIH funding.



FACULTY CHANGES



We mourn the loss of Professor Emeritus Len Waite who passed away April 16, 2015 after an extended illness. Dr. Waite provided exemplary leadership, teaching, and service to the Department of Pharmacology and Toxicology for 40 years from 1970 until his retirement from the faculty in 2011. During his tenure, he served as the Department Vice-Chair and Director of the graduate program. He mentored outstanding graduate students including our current Executive Vice President for Research and Innovation Bill Pierce, and served on the graduate committees of numerous other students. In addition to biomedical graduate students, Dr. Waite directed and largely taught many undergraduate, graduate, and professional courses and students in the Schools of Dentistry, Medicine, Nursing, and the College of Arts and Sciences. Dr. Waite was recognized for his excellence in teaching by the School of Dentistry and the President's Award for Distinguished Service by the University. His service towards such a large and broad array of our educational programs at the University of Louisville exhibited his talent, work ethic and dedication to teaching. He was a dear friend and advisor to many of us and will be deeply missed.

NEW FACULTY APPOINTMENTS (Primary appointments)

Jonathan H. Freedman, PhD was appointed Professor (term) effective January 1, 2015. He was previously at the Integrated Toxicology Program, Duke University Medical Center in Durham, NC and Biomolecular Screening Branch, National Toxicology Program & Laboratory of Toxicology and Pharmacology, ETP, DIR at the National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC. His research program focuses on understanding the mechanisms by which transition metals affect the transcription of both specific genes and entire genomes through the activation of intracellular signal transduction pathways ultimately leading to adverse human health effects. A second research area is to develop *in vivo* toxicological assays using the nematode *Caenorhabditis elegans* and evaluate their utility as medium- and high-throughput screening tools. This research area is part of the international effort to reduce, refine or replace vertebrate animals in chemical testing.

Joshua L. Hood, MD, PhD was appointed Assistant Professor effective January 1, 2015. He served previously at the Consortium for Translational Research in Advanced Imaging and Nanomedicine (C-TRAIN), Department of Medicine, Washington University School of Medicine, St. Louis, MO. His research program focuses on 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.

John Wise Sr., PhD was appointed Professor with tenure and an appointment as University Scholar effective May 1, 2015. Dr. Wise received his PhD in Pharmacology from George Washington University followed by postdoctoral studies at the National Cancer Institute. He served as Senior Toxicologist at an environmental and occupational medicine consulting firm prior to accepting a faculty appointment at Yale University School of Medicine. Most recently he was a Professor of Toxicology and Molecular Epidemiology and Director of the Maine Center for Toxicology and Environmental Health at the University of Southern Maine. His research program incorporates cellular and molecular mechanisms in cancer biology and deploys cell biology, molecular biology, toxicology, molecular epidemiology, and genomics to investigate the health impacts of environmental chemical exposures at the molecular, cellular, tissue, individual, community, and population levels. His internationally recognized research program is currently funded by NIEHS and has been funded by numerous federal agencies and private foundations, including NIH, US Army, NASA, and NOAA.

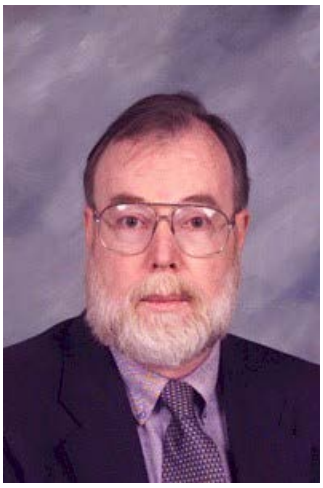
Joshua L. Fuqua, PhD was appointed as Instructor (term) effective June 1, 2015. Dr. Fuqua received his PhD in Anatomy and Neurobiology from the University of Kentucky. He completed postdoctoral work at Wake Forest University and the University of Louisville and was most recently a senior staff scientist in the Owensboro Cancer Research Program. His research program focuses on production and development of clinically relevant therapeutics for neurodegenerative diseases such as amyotrophic lateral sclerosis.

Sandra S. Wise, PhD was appointed as Assistant Professor (term) effective June 1, 2015. Dr. Wise received her PhD in Biochemistry and Molecular Biology from the University of Maine. She most recently was Director of the Cytogenetics and Genomic Instability Program in the Wise Laboratory of Environmental and Genetic Toxicology at the University of Southern Maine and will continue to investigate mechanisms of heavy metal carcinogenesis in collaboration with John Wise Sr. at the University of Louisville.

Demetra Antimisiaris, PharmD was appointed Associate Professor (term) effective July 1, 2015. She received her PharmD from the University of the Pacific in 1989 followed by a geriatrics residency at UCLA in collaboration with the University of Southern California. She has also served on the faculty at the University of Kentucky. She is director of the UofL polypharmacy initiative, dedicated to education, research and public awareness of polypharmacy. She serves on the Kentucky Institute on Aging, an advisory to the Secretary of the Cabinet for Health and Family Services on policy matters related to the development and delivery of services to the aged. Her research interests include clinician-patient decision making regarding medication use in geriatric and palliative care patients, as well as interdisciplinary perspectives on medication use in the elderly.

J. Calvin Kouokam, PhD was appointed Instructor (term) effective July 1, 2015. He received his doctorate in pharmacognosy and analytical photochemistry from the University of Saarland in 2002. He followed with postdoctoral work at the University of Louisville and is currently working with Drs. Ken Palmer and Nobi Matoba in the Brown Cancer Center/Owensboro Cancer Research Program to develop plant produced proteins for the treatment of human diseases. He is focusing on the safety, pharmacodynamics and pharmacokinetic evaluation of antiviral therapeutics and development of a plant produced cholera toxin B subunit, a component of an oral cholera vaccine, for mass vaccination during cholera outbreaks.

FACULTY EMERITUS APPOINTMENTS



Donald E. Nerland, PhD retired and was appointed Professor Emeritus effective January 1, 2015.

NEW FACULTY APPOINTMENTS (Secondary appointments)

Ayman El-Baz, PhD

Associate Professor and Acting 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.

Kyung Hong, PhD

Assistant Professor 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.

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

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

Martin G. O'Toole, PhD
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.

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

Research Interests: Innate immunity in myocardial repair.

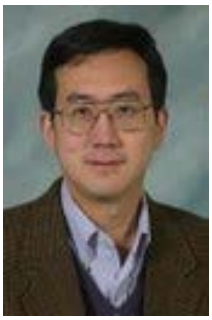
NEW FACULTY ADJUNCT APPOINTMENTS

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

FACULTY PROMOTIONS

Steven Myers, PhD was promoted to Professor of Pharmacology and Toxicology

Daniel Conklin, PhD was promoted to Professor of Medicine



Chi Li, PhD was promoted to Associate Professor of Medicine

Steven Jones, PhD was promoted to Professor of Medicine

Chendil Damodaran PhD, Associate Professor of Urology was awarded tenure

UNIVERSITY ADMINISTRATIVE CHANGES

David W. Hein, PhD was promoted to Vice Provost for Academic Strategy

DEPARTMENT ADMINISTRATIVE STAFF CHANGES

Blair Cade, M.A. was promoted to Department Manager and Executive Assistant to the Vice Provost.

Florence Su, M.M. was promoted to Program Coordinator, Senior

Hannah Bitter, B.S.Ed. was appointed Administrative Assistant (temporary; part-time).

Tracey Pender left the position of Program Coordinator, Sr. to take a position at Humana.

FACULTY WITH PRIMARY APPOINTMENTS

Demetra Antimisiaris, PharmD
Associate Professor
PharmD, University of the 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. Arteel, PhD (Juliane Beier in professional publications)
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, PhD
Associate Professor and Graduate Director: Recruitment and Admissions
PhD, 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, PhD
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 RNA interference, microRNA technology, and ultrasound-guided *in utero* microinjection in cellular, whole embryo and *in vivo* mouse models.

Geoffrey J. Clark, PhD
Associate Professor
Ph.D., Molecular Oncology, University of Manchester (1989)

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

Jonathan H. Freedman, PhD
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, PhD
Instructor
Ph.D., University of Kentucky, Lexington, KY (2010)

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

Ramesh C. Gupta, PhD
Professor and Agnes Brown Duggan Chair of Oncological Research
Ph.D. Analytical/Physical 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, PhD

Professor and Peter K. Knoefel Chair 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, PhD, MPH

Associate Professor and Our Highest Potential Endowed Chair in Cancer Research
Ph.D., Toxicology, Massachusetts Institute of Technology (1997)

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

Joseph Calvin Kouokam, PhD

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, MD, PhD, DSci

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 technologies (virus-like-particle vectors; reassortant vaccines, infectious DNA vaccination); molecular biology and pathogenesis of viral hemorrhagic fevers.

Nobuyuki Matoba, PhD

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

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

Steven R. Myers, PhD

Professor and Associate Chair for Professional Education
Ph.D., Pharmacology, University of Kentucky (1986).

Research Interests: Drug metabolism; metabolism of xenobiotics and chemical carcinogens; use of hemoglobin as biomarker in exposure to xenobiotics.

Kenneth E. Palmer, PhD

Professor and Hemsley Chair in Plant-Based Pharmaceutical Research
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, PhD
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, PhD
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, PhD
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, PhD
Professor and Vice Chair for Graduate Education
Ph.D., Molecular Biology and Pathology, Albany Medical College/Union University (1980).

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

John P. Wise, Sr., PhD
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, PhD
Assistant Professor
Ph.D.,Molecular Biology and Biochemistry, University of Maine, Orono, Maine (2013)

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

FACULTY WITH SECONDARY APPOINTMENTS

Shirish Barve, PhD
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, PhD
Assistant Professor of Medicine
Ph.D., Molecular Biology, Biochemistry, and Microbiology, University of Cincinnati (2007)

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

Aruni Bhatnagar, PhD
Professor of Medicine
Ph.D., Chemistry, University of Kanpur (1985)

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

Haribabu Bodduluri, PhD
Professor of Microbiology & Immunology

Ph.D., Biochemistry, Indian Institute of Science (1983)

Research Interests: Signal transduction and chemoreceptors; role of leukotriene receptors in inflammation and host response.

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

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

Jian Cai, PhD
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, MD, PhD
Professor of Pediatrics and Radiation Oncology
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, MD
Associate Professor 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, MD, PhD
Professor 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, PhD
Professor of Medicine
Ph.D., University of Notre Dame (1995)

Research Interests: Environmental cardiology; cardiovascular toxicology.

Albert R. Cunningham, PhD
Associate Professor 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, PhD
Associate Professor 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, PhD
James Graham Brown Professor of Medicine
Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969)

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

Ayman El-Baz, PhD
Associate Professor and Acting 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, PhD
Professor 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, PhD
Associate Professor 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.

Hermann B. Frieboes, PhD
Assistant Professor of Bioengineering
Ph.D., Biomedical Engineering, University of California, Irvine (2006)

Research Interests: 1) Develop and apply realistic, predictive biocomputational models integrated with clinical and laboratory data to study cancer growth and treatment; 2) Design of patient-specific therapies; and 3) Design of multiscale biocomputational models to describe the complex interaction between cancer treatment and the immune system.

Leila Gobejishvili, PhD
Assistant Professor 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, PhD
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, MD
Professor 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, MD, PhD
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.

Kyung Hong, PhD
Assistant Professor 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.

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

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

Steven P. Jones, PhD
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, PhD
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.

Brad B. Keller, MD
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. PhD, MPH
Assistant Professor of Medicine
Ph.D., Biology and Physiology, Pomor State University (1997)
MPH, 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).

Chi Li, PhD
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, MD, PhD
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, MD
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, MD, PhD
Endowed 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: Adenoviral vector cancer gene therapy; Development of vectors that selectively replicate in cancer cells; Mechanisms of E2F-1-induced apoptosis.

Lacey R. McNally, PhD
Assistant Professor of Medicine
PhD, 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, PhD
Associate Professor of Medicine
PhD, 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

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

Research Interests: Development, evaluation, and kinetic studies of radiopharmaceuticals; the use of molecular imaging for biomedical research.

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

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

Martin G. O'Toole, PhD
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, PhD
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.

Donald M. Miller, MD, PhD
James Graham Brown Professor of Medicine
M.D., Duke University (1973); Ph.D., Biochemistry, Duke University (1973)

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

M. Michele Pisano, PhD
Professor of Molecular, Cellular and Craniofacial Biology
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, PhD

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

George C. Rodgers, MD, PhD

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, MD

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, PhD

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, PhD

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, PhD
Assistant Professor of Bioengineering
Ph.D., Biomedical Engineering, Arizona State University (2009)

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

Yi Tan, PhD
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.

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

Research Interests: Occupational and environmental health; Occupational toxicology; molecular epidemiology.

J**anice E. Sullivan, MD**
Professor of Pediatrics
M.D., University of Minnesota (1988)

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

Brian (Binks) W. Wattenberg, PhD
Associate Professor of Medicine
Ph.D., Biological Chemistry, Washington University (1981)

Research Interests: Sphingosine-kinase and lipid signaling. Trafficing of tail-anchored proteins.

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

Research Interests: Innate immunity in myocardial repair.

Jun Yan, MD, PhD
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 **v**accines for treatment of cancer and infectious diseases.

Hong Ye, PhD
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.

Walter H. Watson, PhD
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.

Wolfgang Zacharias, PhD
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, PhD
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 APPOINTMENTS

- **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)

- **Jesse D. Sutton,** Assistant Clinical Professor of Pharmacology and Toxicology, PharmD, University of Montana (2012)

- **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
Tracey Pender	Program Coordinator, Sr.
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)

2015 NEW GRADUATE STUDENT CLASS

Adrienne Bushau
B.S., Chemistry, University of Louisville

Christine Dolin
B.S., Chemistry, University of Louisville

Nagawa El-Baz
B.Sc., Pharmaceutical Sciences, Mansoura University

Elizabeth Hollis
B.A., Chemistry, Hanover College

Divya Karukonda
Bachelor of Pharmacy, Rajiv Gandhi University of Health Sciences
Masters in Pharmaceutical Sciences, Jawaharlal Nehru Technological University

Alyssa Laun
B.S., Biology & Psychology, University of Louisville

Qian Lin
B.S., Pharmacy, Wenzhou Medical University

Jamie Rush
B.S., Microbiology, University of Oklahoma

Doug Saforo
B.A., Biology, University of Louisville

Rachel Speer
B.S., Molecular Bioscience and Biotechnology, Rochester Institute of Technology

Sanet Steyn
B.S., Biology & Chemistry, Emory University
M.S., Biology, Emory University

Jamie Young
B.S., Biology, University of Maine

GRADUATE STUDENTS

Adcock, Scott
Al-Maqtari, Tareq
Avila, Diana
Baldauf, Keegan
Barve, Aditya S.
Bushau, Adrienne
Carlisle, Samantha
Chen, Wei Yang (Jeremy)
Dolin, Christine
Dupre, Tess
Donde, Hridgandh

Dwenger, Marc M.
El-Baz, Nagawa
Finch, Jordan
Gosney, Julie A.
Greenwell, Caleb
Grewal, Jaspreet
Hallgren, Justin
Hoffman, J. Mason
Hollis, Elizabeth
Holz, Gretchen
Hudson, Shanice
Jackson, Nicole
Jones, Dominique
Karukonda, Divya
Kumar, Pritesh
Kurlawala, Zimple
Lang, Anna L.
Laun, Alyssa
Lasnik, Amanda
Lin, Qian
McAllister, Ryan
Mudd, Ashley M.
Neely, Aaron
Pandit, Harshulkumar
Poole, Lauren
Rush, Jamie
Saforo, Douglas
Shao, Tuo
Sharp, Cierra N.
Shi, Hongxue
Shidal, Christopher
Speer, Rachel
Stepp, Marcus
Steyn, Sanet
Tyo, Kevin M.
Vicary, Glenn
Wechman, Stephen
Young, Jamie

2015 GRADUATES

Hridgandh Donde	Ph.D.	Shirish Barve, Ph.D.	Mechanisms and intervention strategies for alcohol and HIV-antiretroviral therapy-induced liver injury
Keegan J. Baldauf	Ph.D.	Nobuyuki Matoba, Ph.D.	Studies on the impacts of a plant-made recombinant cholera toxin B subunit on the gastrointestinal tract
Pritesh P. Kumar	Ph.D.	Zhao-Hui (Joe) Song, Ph.D.	Searching for novel ligands for the cannabinoid and related receptors
Zimple D. Kurlawala	M.S.	Levi J. Beverly, Ph.D.	Regulation of receptor tyrosine kinases by UBQLN1
Stephen L. Wechman	M.S.	Kelly M. McMasters, M.D., Ph.D.	Improved oncolytic virotherapy by increasing virus spread within tumors
Lauren G. Poole	M.S.	Gavin E. Arteel, Ph.D.	Alcohol-enhanced acute lung injury: Role of plasminogen activator inhibitor-1 and the transitional extracellular matrix
Harshulkumar M. Pandit	M.S.	Robert C.G. Martin, II, M.D., Ph.D.	Identifying hepatocellular carcinoma (HCC) cells with cancer stem cell-like properties
Nicole M. Jackson	M.S.	Brian P. Ceresa, Ph.D.	The regulation and mechanisms of EGFR-mediated apoptosis in MDA-MB-468 cells
Tess V. Dupre	M.S.	Leah J. Siskind, Ph.D.	Identifying novel renoprotective strategies for cisplatin-induced AKI
Samantha M. Carlisle	M.S.	David W. Hein, Ph.D.	Investigating pathway changes associated with varying levels of human arylamine N-acetyltransferase 1 (NAT1) activity
Tareq Al-Maqtari	Ph.D.	Aruni Bhatnagar, Ph.D. & Kyung Hong, Ph.D.	Promoting differentiation and survival of human c-kit+ cardiac progenitor cells ex vivo
J. Caleb Greenwell	M.S.	Jesse Roman, M.D.	Role of nicotinic acetylcholine receptors in lung cancer

FACULTY HONORS

Antimisiaris:

- ASCP leadership honor at annual meeting.

Arteel:

- Coauthor on abstract (Anders et al; see section 1E) selected for an oral presentation at Digestive Disease Week annual meeting.

- Trainee (Poole) received a travel award from the Alcohol and Immunology Research Interest Group (AIRIG), to attend the annual Society for Leukocyte Biology meeting.
- Trainee (Poole) received Doctoral Basic Science Graduate Student Award at Research!Louisville annual meeting.
- Appointed Fellow of the American Association for the Study of Liver Diseases (FAASLD).
- Coauthor on abstract (Anders et al) selected for the Resident Research Award at the AASLD annual meeting.

Beier:

- Abstract selected for oral presentation, Digestive Disease Week 2015, Washington, DC
- Resident Research Award (for Anders LC's abstract), AASLD 66th annual meeting, San Francisco, CA

Chen:

- Honored at University of Louisville 14th Annual Celebration of Faculty Excellence, September, 2015
- Senior author on a poster awarded a junior investigator award from the Research Society on Alcoholism, RSA annual meeting, San Antonio, Texas.

Hood:

- NCI Cancer Education Program, Norbert J. Burzynski Award, 2nd place, Professional Student Category, "Development of Immunomodulatory Exosomal Nanocarriers to Treat Melanoma," **Thomas Noel**, MS (1st year medical student, mentor Joshua L. Hood), Research!Louisville, October 27-30, 2015, Louisville, KY
- Selected through an internal competition to represent the University of Louisville School of Medicine's *Beckman Young Investigator* Grant application.
- Selected through an internal competition to represent the University of Louisville School of Medicine's *Searle Scholars Program* Grant application.
- Selected through an internal competition to represent the University of Louisville School of Medicine's *PEW Scholars Program in the Biomedical Sciences* application.

Kidd:

- American Society for Pharmacology and Experimental Therapeutics (ASPET) Underrepresented Graduate Student Travel Award Travel
- American Society for Pharmacology and Experimental Therapeutics (ASPET), 1st Place Delores C. Shockley Best Abstract Award

Lukashevich:

- Distinguished University Scholar

Palmer:

- Recognition of Endowed Chair appointment at the annual faculty celebration of excellence. (Appointed to an endowed chair in the School of Medicine as the Helmsley

Chair in Plant-made Pharmaceuticals Research, October 2014.)

Siskind:

- Nominee for the American Society of Cell Biology, Early Career Award
- Co-Chair, South Eastern Regional Lipid Conference, Nov.10-13th 2015, Cashiers, NC

States:

- **Laila Al-Eryani:** First place graduate student poster presentation, Dermatology Specialty Section, Society of Toxicology
- **Laila Al-Eryani:** Second Place graduate student poster presentation, Metals Specialty Section, Society of Toxicology
- **Laila Al-Eryani:** First Place PhD student poster presentation, Ohio Valley Regional Chapter, Society of Toxicology
- **J. Mason Hoffman**: First Place, Masters Student poster presentation, Ohio Valley Regional Chapter, Society of Toxicology

Wise, J.:

- Education Award, Society of Toxicology
- University Scholar, University of Louisville
- Selected to appear in "Who's who in biomedical research".
- Coauthor on student posters selected for awards

STUDENT HONORS

Dr. Pritesh Kumar was honored with the 2014 KC Huang Outstanding Graduate Student Award at the Department of Pharmacology and Toxicology welcome picnic held August 14, 2015. The award is named in honor of Professor KC Huang who served as a distinguished department faculty member from 1953 to 1998. Dr. Kumar received his PhD in pharmacology and toxicology in 2015. His faculty mentor Zhao-Hui (Joe) Song included in Dr. Kumar's nomination that he had published 7 scientific papers during his dissertation studies, four as first author. He presented his research at many national and international scientific meetings, including selections for oral presentation and receipt of a best graduate student presentation award. Dr. Kumar was very active in a number of activities at UofL, including the LCME accreditation process, and service as a SIGS ambassador, and on the Graduate Student Council. Dr. Kumar is CEO of PhytoSciences Inc., a company developing advanced medicinal cannabis-based therapeutics. Dr. Kumar joins a distinguished group of KC Huang Outstanding Graduate Student Awards.

Shanice V. Hudson received an NIH-funded diversity supplement to support her PhD training. Her dissertation project is funded by an NIH R01 parent grant to Professor Gavin

Arteel entitled "Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage".

Alyssa Laun, a participant in the National Cancer Institute-funded Cancer Education Program at the University of Louisville, received a travel award from the International Cannabinoid Research Society to present her research at their 25th annual symposium held July 2015 in Wolfville, Nova Scotia Canada. Alyssa was the youngest attendee selected to give an oral presentation of her research entitled "Cannabigerol modulates the efficacy of amandamide on the CB2 cannabinoid receptor". Alyssa is pursuing her research under the direction of Professor Zhao-hui (Joe) Song in the Department of Pharmacology & Toxicology and was accepted into the PhD program in Pharmacology and Toxicology.

Laila El-Aryani (mentor Dr. Chris States) received the Sinclair Student Award from the Dermal Toxicology Specialty Section and the second place graduate student award in the Metals Toxicology Specialty Section at the March 2015 national meeting of the Society of Toxicology held in San Diego, California.

Dominique Jones (mentor Dr. La Creis Kidd) received a national travel award and the first place Delores C. Shockley Best Abstract Award at the April 2015 national meeting of the American Society for Pharmacology and Experimental Therapeutics held in Boston, Massachusetts.

Samantha Carlisle (mentor Dr. David Hein) received a national travel award to attend the June 2015 annual NIGMS-sponsored workshop on metabolomics in Birmingham, Alabama.

Gretchen Holz (mentor Dr. Igor Lukashevich) received an international travel award to present her abstract at the July 2015 annual meetings of the American Society for Virology in London, Ontario, Canada.

Nicole Jackson, former University of Louisville Cancer Education Program participant and current Department of Pharmacology & Toxicology PhD candidate received a $1200 travel award from the American Society of Cell Biology to present her research entitled Cyclic GMP Dependent Protein Kinase (PKG) as a Mediator of EGFR- Induced Apoptosis in Breast Cancer at their annual meetings December 12-16 in San Diego, CA. Nicole is carrying out her dissertation research in the laboratory of Dr. Brian Ceresa.

Pharmacology and Toxicology graduate students were honored at the annual meetings of the Ohio Valley Society of Toxicology held in Highland Heights, Kentucky in November. **Laila Al-Eryani** (mentor Dr. Chris States) received the first place award for her research poster in the PhD graduate student category. **J. Mason Hoffman** (mentor Dr. Chris States) received the first place award for his research poster in the MS graduate student category. **Marcus W. Stepp** (mentor Dr. David Hein) was selected for oral presentation of his research in the PhD graduate student category. His mentor is Professor David Hein.

Diana Avila (mentors Dr. Shirish Barve and Laila Gobejishvili); **Wei-yang Chen** (mentors Drs. Swati Joshi-Barve & Craig McClain); **Tuo Shao** (mentor Dr. Wenke Feng) received prestigious Presidential Poster of Distinction Awards at the annual meetings of the American Association for Study of Liver Diseases in San Francisco, November 2015.

Department of Pharmacology and Toxicology students & faculty receive awards at 2015 Research!Louisville

- **Cierra Sharp:** First place Masters Basic Science Graduate Student Award (mentors Leah Siskind and Levi Beverly)
- **Rachel Speer:** Second place Masters Basic Science Graduate Student Award (mentor John Wise Sr.)
- **Lauren Poole:** First place Doctoral Basic Science Graduate Student Award (mentor Gavin Arteel)
- **Harshul Pandit:** Second place Doctoral Basic Science Graduate Student Award (mentor Robert Martin)
- **Ashley Mudd:** First place Louisville Chapter-Women in Medicine and Science Award (mentor Ramesh Gupta)
- **Nicole Jackson:** Third place Louisville Chapter-Women in Medicine and Science Award (mentor Brian Ceresa)
- **Desmond Stewart:** First place NCI Cancer Education Program Norbert J. Burzynski Award Professional Student Category (mentor Geoffrey Clark)
- **Thomas Noel:** Second place NCI Cancer Education Program Norbert J. Burzynski Award Professional Student Category (mentor Joshua Hood)
- **Hailey Griffey:** First place NCI Cancer Education Program Norbert J. Burzynski Award Undergraduate Student Category (mentor Brian Ceresa)
- **Alexander Sobolev:** Third place NCI Cancer Education Program Norbert J. Burzynski Award Undergraduate Student Category (mentor Lacey McNally)

Jamie Young, a Department of Pharmacology and Toxicology graduate student in the laboratory of Dr. John Wise Sr. received a prestigious travel award to present her research at the Environmental Mutagenesis and Genomics meeting scheduled for September 2015 in New Orleans.

Tess Dupre, a Department of Pharmacology and Toxicology graduate student in the laboratory of Dr. Leah Siskind has received a prestigious STARS travel award to present her research at the American Society of Nephrology scheduled for November 2015 in San Diego.

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

1. Al-Eryani, L., Wahlang, B., Falkner, K.C., Guardiola, J.J., Clair, H.B., Prough, R.A., Cave, M. Identification Of Environmental Chemicals Associated With The Development Of Toxicant Associated Fatty Liver Disease In Rodents. Toxicologic Pathology. 43(4):482-97. 2015 PMID: 25326588.

2. Antimisiaris D. ADAPT: 100 CEU Training for Certification in Patient Care Skills (Canadian CPhA): Lead content consultant and author for United States version with APhA. Patient Care vignette development and portrayal. 7 online modules, each lasting 2-4 weeks. 2015

3. Antimisiaris, D. Pharmacist consults at Kalaupapa Settlement: a journey back in time. Journal of Pharmacy Practice and Research**,** 45: 331–332 2015

4. Antimisiaris D, Barber A, Delafuente J, Cerulli J, Marasco R, McDonough R, Swarthout M Twigg E. APhA MTM CTP: American Pharmacist Association Medication Management Certification Program, 35 CEU, 2015.

5. Antimisiaris D , Cutler T, Gabay M, Nadas J, Pon T, Stebbins M, VanOsdol S. Power Pak C.E. Certificate Program in Medication Therapy Management, 2015.

6. Antimisiaris D, Cutler T, Gabay M, Nadas J, Pon T, Stebbins M, VanOsdol S. Power Pak C.E. Mediation Therapy Management Certification for Pharmacy Technicians. 2015

7. Antimisiaris D, McCoy G, Miller J. EHR Medication List Accuracy: A Review and Discussion. Journal of the Kentucky Academy of Family Physicians. 84:15-17, 2015

8. Arteel GE. Hepatotoxicity. In: Arsenic: Exposure Sources, Health Risks and Mechanisms of Toxicity, Ed. J.C. States (Wiley, New York, NY), 249-266, 2015

9. Aqil F, Jeyabalan J, Vadhanam MV, Lehmler H, Robertson LW, Gupta RC. DNA adducts and effects on cellular markers by sustained release of PCB126 and PCB153 by polymeric implants. Toxicology Reports, 1:820-833, 2015.

10. Baldauf KJ, Royal JM, Hamorsky KT, Matoba N. Cholera toxin B: One subunit with many pharmaceutical applications. Toxins 7: 974-996, 2015.

11. Barchowsky A, States JC. 'Arsenic induced cardiovascular disease' Chapter 20 in Arsenic: Exposure Sources, Health Risks and Mechanisms of Toxicity, J.C. States (ed), Wiley, New York, 2015

12. Behl, M, Hsieh, J-H, Shafer, TJ, Mundy, WR, Rice, JR, Boyd, WA, Freedman, JH, Hunter III, ES, Jarema K, Padilla, SS, Tice, RR. Use of alternative assays to identify and prioritize organophosphorus flame retardants for potential developmental and neurotoxicity. Neurotoxicol Teratol 52, 181-93, 2015 (PMID: 26386178)

13. Beier JI, Arteel GE. Oxidative stress and ethanol toxicity. In: Oxidative Stress in Applied Basic Research and Clinical Practice. Studies on Experimental Pharmacology and Toxicology, Ed. LO Klotz, JP Kehrer, SM Roberts (Humana Press, New York, NY), 213-232, 2015

14. Beier JI, Jokinen JD, Holz GE, Whang PS, Martin AM, Warner NL, Arteel GE, Lukashevich IS. Novel Mechanism of Arenavirus-Induced Liver Pathology, PLOS One, 10:e0122839. 2015. PMID: 25822203; PMCID: PMC4378851

15. Buchmeier MJ, Charrel RN, Clegg CS, de la Torre JC, DeRisi JL, Emonet S, Gonzalez JP,

Kuhn JH, Lukashevich IS. Four (4) new species in the genus Mammarenavirus, family Arenaviridae. International Committee on Taxonomy of Viruses, Technical Report, June 2015. doi: 10.13140/RG.2.1.4215.2805

16. Carnero A, Blanco-Aparicio C, Kondoh H, Lleonart M, Martinez-Leal JF, Mondello C, Scovassi AI, Wise Sr JP, Wise SS, Yasaey H. Assessing the Carcinogenic Potential of Low Dose Exposures to Chemical Mixtures in the Environment: Replicative immortality. Carcinogenesis, 36: S19-S37, 2015. PMID: 26106138. PMCID: PMC4565607.

17. Cartularo L, Laulicht F, Sun H, Kluz T, Freedman JH, Costa M. Gene expression and pathway analysis of human hepatocellular carcinoma cells treated with cadmium. Toxicol Appl Pharmacol. 288, 399-408, 2015 (PMID: 26314618.)

18. Ceresa BP. Determining the role of Rab7 in constitutive and ligand-mediated epidermal growth factor receptor endocytic trafficking using single cell assays. (2015). Methods Mol Biol. 2015;1298:305-17**.** PMID: 25800853

19. Chang HW, Chen SY, Chuang LY, Guleria S. Toxicology and disease/cancer therapy in reactive oxygen species-mediated drugs and treatments. Scientific World Journal 2015;2015:860563. doi: 10.1155/2015/860563. PMID: 25861684; PMCID: PMC4377479.

20. Chang KT, Anishkin A, Patwardhan GA, Beverly LJ, Siskind LJ, Colombini M. Ceramide channels: destabilization by Bcl-xL and role in apoptosis. Biochim Biophys Acta. 1848 (10 Pt A): 2374-2384. 2015. doi: 10.1016/j.bbamem.2015.07.013. [Epub ahead of print] PMID: 26215742

21. Chen X, Liu J, Feng W, Wu X, Chen SY. MiR-125b protects against ethanol-induced apoptosis in neural crest cells and mouse embryos by targeting Bak 1 and PUMA Experimental Neurology 271: 104-111, 2015. PMID: 26024858

22. Cheng PH, Rao XM, Duan X, Li XF, Egger ME, McMasters KM, Zhou HS. Virotherapy targeting cyclin E overexpression in tumors with adenovirus-enhanced cancer-selective promoter. J Mol Med 93:211-23, 2015.

23. Cheng PH, Rao XM, Wechman SL, Li XF, McMasters KM, Zhou HS. Oncolytic adenovirus targeting cyclin E overexpression repressed tumor growth in syngeneic immunocompetent mice. BMC Cancer 15:716, 2015.

24. Cheng PH, Wechman SL, McMasters KM, Zhou HS. Oncolytic Replication of E1b-Deleted Adenoviruses. Viruses 7:5767-79, 2015.

25. Donninger H, Calvisi DF, Barnoud T, Clark J, Schmidt ML, Vos MD, Clark GJ**.** NORE1A is a Ras senescence effector that controls the apoptotic/senescent balance of p53 via HIPK2. J.Cell Biol. 2015 Mar 16;208(6):777-89. doi: 10.1083/jcb.201408087. PMID: 25778922

26. Donninger H, Clark GJ. NORE1A drives Ras to flick the p53 senescent switch. Molecular & Cellular Oncology, 2015 http://www.tandfonline.com/action/doSearch?quickLinkJournal=&journalText=&AllField=Donninger&publication=47078613

27. Donninger H, Clark J, Rinaldo F, Nelson N, Barnoud T, Schmidt ML, Hobbing KR, Vos MD, Sils B, Clark GJ. The RASSF1A tumor suppressor regulates XPA-mediated DNA repair. Mol.Cell Biol. 2015 Jan;35(1):277-87. doi: 10.1128/MCB.00202-14. PMID: 25368379

28. Donninger H, Hobbing K, Schmidt ML, Walters E, Rund L, Schook L, Clark GJ . A porcine model system of BRCA1 driven breast cancer, Front Genet. 2015 Aug 25;6:269. doi: 10.3389/fgene.2015.00269. eCollection 2015. PMID: 26379698

29. Finch J, Conklin DJ. Air Pollution-Induced Vascular Dysfunction: Potential Role of Endothelin-1 (ET-1) System. Cardiovasc Toxicol. 2015 Jul 7. doi: 10.1007/S12012-015-9334-y PMID: 26148452; PMCID: PMC4704997

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PHARMACOLOGY & TOXICOLOGY ABSTRACTS
Faculty with Primary Appointments and Students

Antimisiaris:

1. 2015-University of Louisville Geriatric Outpatient Clinic and Family Medicine Clinic: Survey of Beta Blocker Use in the Elderly. (Poster Presentation at ASHP Mid-Year Meeting, Dec 2015, New Orleans, LA)

Arteel:

National/International:

1. Bushau AM, Anders L, Lang A, Poole LG, Falkner KC, Arteel GE, Cave M, Beier JI (2015) Mechanistic insight into vinyl chloride-induced liver injury. The Toxicologist 144:25
2. Anders L, Douglas A, Bushau AM, Lang A, Falkner KC, Arteel GE, Cave M, McClain CJ, Beier JI (2015) Exposure to vinyl chloride metabolites exacerbates liver injury caused by high-fat diet in mice. The Toxicologist 144:26

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4. Dolin CE, Massey VL, Poole LG, Siow DL, Merchant ML, Wilkey DW, Arteel GE (2015) The hepatic 'matrisome' responds dynamically to toxic stress: novel proteomic characterization of the hepatic ECM The Toxicologist 144:148
5. Anders L, Bushau AM, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain CJ, Beier JI (2015). Mechanistic Insight Into Vinyl Chloride Metabolite-Induced Liver Injury Caused by High Fat Diet in Mice. Gastroenterology 148:S980.
6. Poole L, Massey V, Torres E, Siow D, Warner N, Lang A, Dolin C, Ritzenthaler J, Roman J, Arteel G (2015) Chronic alcohol enhances pulmonary damage in a mouse model of endotoxemia- induced acute lung injury: novel role of plasminogen activator inhibitor-1. Immunity in Health and Disease: proceedings of the Society of Leukocyte Biology annual meeting.
7. Dolin CE, Massey VL, Poole LG, Siow DL, Merchant ML, Wilkey DW, Arteel GE (2015) The hepatic 'matrisome' responds dynamically to inflammatory injury: proteomic characterization of the transitional ECM changes in the liver Hepatology 62:500A
8. Anders LC, Bushau AM, Lang AL, Arteel GE, Cave MC, McClain CJ and Beier JI (2015) Inflammasome activation due to vinyl chloride metabolite exposure in NAFLD caused by high fat diet in mice. Hepatology 62:1250A. (Resident Research Award)
9. Poole LG, Massey VL, Torres-Gonzalez E, Falkner KC, Siow DL, Warner NL, Schmidt RH, Ritzenthaler JD, Roman J, Arteel GE (2015) TNFα mediates the liver:lung axis in alcohol- enhanced acute lung injury Hepatology 62:1250A.

Local/Regional:

10. Holz G, Jokinen J, Warnker N, Arteel G, Lukashevich I (2015) Arenavirus-induced liver pathology: search for biomarkers of liver involvement in in vitro models. Research!Louisville annual meeting.
11. Hudson S, Dolin C, Poole L, Massey V, Wilkey D, Merchant , Frieboes H, Arteel G (2015) Modeling the Kinetics of Integrin Receptor Binding to Extracellular Matrix Proteins. Research!Louisville annual meeting.
12. McKenzie C, Anders L, Poole L, Hudson S, Bushau A, Lang A, Arteel G, McClain C, Beier J (2015) Enhancement of NAFLD Risk by Vinyl Chloride: Role of Adipose Tissue in a Mouse Model. Research!Louisville annual meeting.
13. Warner N, Jokinen J, Holz G, Arteel G, Lukashevich I (2015) Interaction of arenaviruses with polarized epithelial cells. Research!Louisville annual meeting.
14. Poole L*, Massey V, Torres E, Warner N, Siow D, Dolin C, Lang A, Hudson S, Arteel G (2015) Alcohol enhances endotoxemia-induced acute lung injury: role of plasminogen activator inhibitor-1. Research!Louisville annual meeting. *best doctoral student presentation
15. Yeo H, Anders L, Bushau A, Kaelin B, Arteel G, Cave M, McClain C, Beier J (2015) Exploring Energy Metabolism Changes In Vinyl Chloride Induced Non-Alcoholic Fatty Liver Disease (NAFLD). Research!Louisville annual meeting.
16. Lang A, Kaelin B, Yeo H, Hudson S, McKenzie C, Sharp C, Poole L, Arteel G, Beier J (2015) Inhibiting mammalian target of rapamycin (mTOR) via rapamycin blunts

liver damage caused by VC metabolites in mice. Research!Louisville annual meeting.

17. Sharp C, Doll M, Dupre T, Shah P, Marimuthu S, Siow D, Arteel G, Megyesi J, Beverly L, Siskind L (2015) Developing a more clinically relevant mouse model of cisplatin-induced nephrotoxicity. Research!Louisville annual meeting.
18. Dolin C, Massey V, Poole L, Siow D, Merchant M, Wilkey D, Roman J, Arteel G (2015) The hepatic and pulmonary "matrisome" responds dynamically to inflammatory injury: proteomic characterization of the transitional ECM changes. Research!Louisville annual meeting

Beier-Arteel:

National/International:

1. Bushau AM, Anders LC, Douglas AN, Lang AL, Joshi-Barve S, Poole LG, Massey VM, Falkner KC,
2. Cave M, McClain CJ and Beier JI (2015) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury. *The Toxicologist. Supplement to Toxicological Sciences* 144:25.
3. Anders LC, Douglas AN, Bushau AM, Lang AL, Falkner KC, Arteel GE, Cave M, McClain CJ and Beier JI (2015) Exposure to Vinyl Chloride Metabolites Exacerbates Liver Injury Caused by High Fat Diet in Mice. *The Toxicologist. Supplement to Toxicological Sciences* 144:26.
4. Anders LC, Bushau AM, Lang AL, Falkner KC, Arteel GE, Cave M, McClain CJ and Beier JI (2015) Mechanistic Insight Into Vinyl Chloride Metabolite-Induced Liver Injury Caused by High Fat Diet in Mice. *Gastroenterology* 148(4): S-980. (Selected for oral presentation).
5. Holz GE, Beier JI, Jokinen JD, Arteel GE, and Lukashevich IS (2015) Arenavirus-induced hepatic cell cycle arrest. *American Society for Virology* 34th Annual Meeting 2015, London, Ontario, Canada.
6. Anders LC, Bushau AM, Lang AL, Arteel GE, Cave MC, McClain CJ and Beier JI (2015) Inflammasome Activation Due to Vinyl Chloride Metabolite Exposure in NAFLD Caused by High Fat Diet in Mice. *Hepatology*, 62(1):1250A. (Resident Research Award).
7. 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* (in press).

Local/Regional:

8. Lang AL, Kaelin BR, Yeo H, Hudson SV, McKenzie CM, Sharp CN, Poole LG, Arteel GE, and Beier JI (2015) Inhibiting mammalian target of rapamycin (mTOR) via rapamycin blunts liver damage caused by VC metabolites in mice. Research! Louisville annual meeting, Louisville, KY.
9. Kaelin BK, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC, McClain MJ and Beier JI (2015) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury: Role of Dietary Fatty Acids. Research! Louisville annual meeting, Louisville, KY.
10. Yeo H, Anders LC, Bushau AM, Kaelin BR, Arteel GE, Cave MC, McClain MJ and Beier JI (2015) Exploring Energy Metabolism Changes In Vinyl Chloride Induced Non-

Alcoholic Fatty Liver Disease (NAFLD). Research! Louisville annual meeting, Louisville, KY.

11. McKenzie CM, Anders LC, Poole LG, Hudson SV, Bushau AM, Lang AL, Arteel GE, McClain MJ and Beier JI (2015) Enhancement of NAFLD Risk by Vinyl Chloride: Role of Adipose Tissue in a Mouse Model. Research! Louisville annual meeting, Louisville, KY.

Ceresa:

National/International:

1. Jun 2015: 7th International Conference on cGMP, Trier, Germany, Jackson, N. and Ceresa, B. Cyclic GMP Dependent Protein Kinase (PKG) as a mediator of EGFR-Induced Apoptosis in Breast Cancer.
2. Dec 2015: American Society of Cell Biology, San Diego, CA: Gosney, J. and Ceresa, B.P. A non-invasive strategy for enriching early endosomes to examine EGFR signaling.
3. Dec 2015: American Society of Cell Biology, San Diego, CA: Rush, J.S., Griffey, H., and Ceresa, B.P., ErbB3 as a regulator of EGFR signaling.
4. Dec 2015: American Society of Cell Biology, San Diego, CA: Jackson, N. and Ceresa, B. Cyclic GMP Dependent Protein Kinase (PKG) as a mediator of EGFR-Induced Apoptosis in Breast Cancer.

Chen:

1. Wang KL, Chen XP, Zheng L, Liu J, Chen S-Y. Embryonic exposure to ethanol increases the susceptibility of larval zebrafish to chemically induced seizures. *Alcohol Clin Exp Res*. 39: 218A, 2015.
2. Chen XP, Yuan FQ, Liu J, Chen S-Y. Sulforaphane protects against ethanol-induced apoptosis in neural crest cells by epigenetic modulation of Bcl2 gene expression. *Alcohol Clin Exp Res.* 39: 219A, 2015.
3. Yuan FQ, Liu J. Chen S-Y. Sulforaphane prevents ethanol-induced apoptosis in neural crest cells by increasing histone acetylation at the Bcl2 promoter. Research! Louisville. 2015.
4. Yuan FQ, Liu J, Chen S-Y. Up-regulation of Siah1 by ethanol triggers apoptosis in neural crest cells through p38 MAPK-mediated activation of p53 signaling pathway. *Alcohol Clin. Exp. Res*. 39: 219A, 2015.
5. Yuan FQ, Liu J, Chen S-Y. Modulation of histone acetylation at the Bcl2 promoter by sulforaphane reduced ethanol-induced apoptosis in neural crest cells. Society for Developmental Biology. 2015
6. Chen S-Y. Nrf2-mediated antioxidant response: Implications for the prevention of fetal alcohol spectrum disorders. Proceedings of the 15th ISANH Conference on Oxidative Stress Reduction, Redox Homeostasis and Antioxidants. 49, 2015

Freedman:

1. Behl, M., Hsieh, J-H., Shafer, T., Mundy, W., Boyd, W., Freedman, J., Hunter, S., Jarema, K., Padilla, S., and Tice, R. Organophosphate flame retardants affect development and neurotoxicity in alternative models. Fifty-fourth Annual Meeting of the Society of Toxicology, San Diego, CA (2015).

2. Boyd, W.A., Smith, M.V., Co, C.A., Pirone, J.R., Rice, J.R., and Freedman, J.H. Developmental Toxicity of Phase I and II ToxCast™ Chemicals to *Caenorhabditis elegans*. Fifty-fourth Annual Meeting of the Society of Toxicology, San Diego, CA (2015).
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4. 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. Mitochondrial toxicity of Tox21 chemicals in *C. elegans.* FutureTox III, Arlington, VA (2015)
5. Behl, M., Hsieh, J-H., Shafer, T.J., Mundy, W.R., Rice, J.R., Boyd, W.A., Freedman, J.H., Hunter, E.S., Jarema, K., Padilla, S., and Tice, R.R. Utilizing alternative developmental and neurotoxicity screening methods to prioritize compounds for further mammalian testing. FutureTox III, Arlington, VA (2015)

Gupta:

1. Aqil F, Jeyabalan J, Munagala R, Gupta RC. Cumin extract prevents estrogen-associated breast cancer in ACI rats. AACR, April 2015.
2. Singh IP, Gupta RC, Sharma RJ, Aqil F, Bansal AK, Singh S. Developing Herbal Formulation of Anthocyanins and Anthocyanidins-enriched Extracts from Eugenia jambolana 'Jamun'. 2015-International Symposium toward the Future of Advanced Researches, January 2015.
3. Munagala R, Aqil F, Gupta RC. Circulatory Exosomal Cargo as Biomarkers of Recurrent Lung Tumors. March 2015.
4. Munagala R, Aqil F, Gupta RC. Exosomal miRNAs as biomarkers of lung cancer. ISEV, April 2015.
5. Gupta RC, Jeyabalan J, Vadhanam M, Agrawal A, Cambron S, O'toole M, Sherwood L, Parker L, Munagala M, Aqil F. Polyphenolics for the prevention and treatment of various cancers using novel oral, systemic and local delivery technologies. 9th World Congress on Polyphenols Applications, June 2015.
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8. McKenna MK, Nooti SK, Frissora F, Alhakeem SS, Gachuki BW, Aqil F, Rangnekar VM, Muthusamy N, Gupta RC, Bondada S. Effect of Withaferin A, an Anti-cancer Agent from a Medicinal Plant, on B-cell Chronic Lymphocytic Leukemia. ASH, December 2015.

Hein:

1. Doll, M.A., Stepp, M.W., States, J.C., and Hein, D.W.: RNAi- and small molecule-induced inhibition of arylamine N-acetyltransferase 1 reduce anchorage independent growth in breast cancer cell line MDA-MB-231. *Proceedings of the Annual Meeting of*

the Society of Toxicology, Abstract #92, San Diego, California, March 2015.

2. Stepp, M.W., Doll, M.A., States, J.C., and Hein, D.W.: More frequent breast tumors in rapid compared to slow rat Nat2 congenic Fischer 344 rats administered methylnitrosourea. *Proceedings of the Annual Meeting of the Society of Toxicology*, Abstract #93, San Diego, California, March 2015.
3. Hein, D.W. and Arteel, G.E.: NIEHS T32 environmental health sciences training program at the University of Louisville. Proceedings of the joint meetings of the Environmental Health Science Core Centers and Training Directors, Abstract #6R, Tucson, Arizona, April 2015.
4. Stepp, M.W., Mamaliga, G., Doll, M.A., States, J.C., and Hein, D.W.: Folate-dependent acetyl CoA hydrolysis by human and rodent N-acetyltransferases. Proceedings of the Great Lakes Drug Metabolism and Disposition Group Meeting, Ann Arbor, Michigan, May 2015.
5. Carlisle, S.M., Trainor, P.J., Zhang, X., Yin, X., Doll, M.A., States, J.C., and Hein, D.W.: Investigating pathway changes in MDA-MBA-231 breast cancer cells associated with varying levels of human N-acetyltransferase 1 (NAT1) activity. Ohio Valley Society of Toxicology summer student meeting, Cincinnati, Ohio, June 2015.
6. Stepp, M.W., Mamaliga, G., Doll, M.A., States, J.C., and Hein, D.W.: Folate-dependent acetyl CoA hydrolysis by human and rodent N-acetyltransferases. Ohio Valley Society of Toxicology summer student meeting, Cincinnati, Ohio, June 2015.
7. Chang, Maggie Y., Stepp, M.W., Doll, M.A., and Hein, D.W.: Effect of arylamine *N*-acetyltransferase 1 knockout by CRISPR/Cas 9 on doubling time in MDA-MB-231, MCF-7, & ZR-75-1 breast cancer cell lines. University of Louisville Undergraduate Research Symposium, #12, Louisville, Kentucky, July 2015.
8. Hein, D.W. and Kidd, L.R.: Motivating cancer education program participants towards careers in cancer research, prevention and treatment. Proceedings of the International Conference on Cancer Education, Abstract P-46, Tucson, Arizona, October 2015.
9. Carlisle, S.M., Trainor, P.J., Zhang, X., Yin, X., Doll, M.A., States, J.C., and Hein, D.W.: Investigating pathway changes associated with varying levels of human N-acetyltransferase 1 (NAT1) activity in MDA-MBA-231 breast cancer cells. Proceedings of Research!Louisville, Abstract GRD-31, Louisville, Kentucky, October 2015.
10. Stepp, M.W., Doll, M.A., Sanders, M.A., and Hein, D.W.: Differences between rapid and slow arylamine N-acetyltransferase Fischer 344 congenic rats in methylnitrosourea-induced breast tumors. Proceedings of Research!Louisville, Abstract GRD-83, Louisville, Kentucky, October 2015.
11. Chang, Maggie Y., Stepp, M.W., Doll, M.A., and Hein, D.W.: Effect of arylamine *N*-acetyltransferase 1 knockout by CRISPR/Cas 9 on doubling time in MDA-MB-231, MCF-7, & ZR-75-1 breast cancer cell lines. Proceedings of Research!Louisville, Abstract UCE-62, Louisville, Kentucky, October 2015.
12. Kidd, L.R. and Hein, D.W.: Cummulative results of the NCI cancer education program. Proceedings of Research!Louisville, Abstract F-15, Louisville, Kentucky, October 2015.
13. Stepp, M.W., Doll, M.A., Sanders, M.A., and Hein, D.W.: Differences between rapid and slow arylamine N-acetyltransferase Fischer 344 congenic rats in methylnitrosourea-induced breast tumors. Ohio Valley Society of Toxicology, Highland Heights, Kentucky, November 2015.

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1. Noel T, Hood, JL. Development of Immunomodulatory Exosomal Nanocarriers to Treat Melanoma. Research!Louisville, Louisville, KY, October 2015 (Public Link: http://ocrss.louisville.edu/clients/hscro/conspectus/searchview.php? ID=4163)
2. Noel T, Hood JL. Tuning Exosomes to Modulate Macrophage Inflammation: Therapeutic Strategy for melanoma, Proceedings of the 4th AACR International Conference on Frontiers in Basic Cancer Research, Philadelphia, PA, October 2015 (issue assignment pending)

Kidd:

National/International:

1. Kidd L.R. and Hein, D.W. Cumulative Results of the NCI Cancer Education Program. American Society of Pharmacology & Experimental Therapeutics, San Diego, CA Submitted November 2015.
2. 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, Submitted November 2015.
3. Jones D.Z., Hobbing K., Schmidt L., Clark G., and Kidd L.R. miR-186 suppresses cell proliferation and ancorage independence in a metastatic prostate cancer cell line. American Society of Pharmacology & Experimental Therapeutics, San Diego, CA Submitted November 2015.
4. Jones D.Z., Schmidt M.L., Hobbing K., Clark G. and Kidd L.R. MicroRNA-186 inhibition alters cell proliferation and colony formation in prostate cancer. Experimental Biology Meeting, Boston, MA, March 29, 2015.
5. Jones D.Z., Schmidt M.L., Hobbing K., Clark G. and Kidd L.R. MicroRNA-186 inhibition alters cell proliferation and colony formation in prostate cancer. American Association for Cancer Research (AACR), Philadelphia, PA, April 21, 2015.
6. Jones D.Z., Schmidt M.L., Hobbing K., Clark G. and Kidd L.R. MicroRNA-186 inhibition alters cell proliferation and colony formation in prostate cancer. Ohio Valley Society of Toxicology (OVSOT), Cincinnati, OH, June 29, 2015.
7. Jones, D.Z., Schmidt M.L., Hobbing K., Clark G. and Kidd L.R. MicroRNA-186 inhibition alters cell proliferation and colony formation in prostate cancer. American Society of Investigative Pathology (ASIP), Breast and Prostate Cancer Mini-Symposium. Boston, MA, March 30, 2015.

Local/Regional:

1. Kidd L.R. and Hein, D.W. Cumulative Results of the NCI Cancer Education Program. Research Louisville!, Louisville, Kentucky, October, 2015.
2. Jones D.Z., Schmidt L., Hobbing K., Clark G., and Kidd L.R. miR-186 suppresses cell proliferation and anchorage-independence in a metastatic prostate cancer cell line. Research Louisville!, Louisville, Kentucky, October, 2015.
3. Packer, T., Jones D.Z., Kidd L.R. Impact of Quercetin on miR-21, Cell Proliferation and Migration of Metastatic and Non-Metastatic Prostate Cancer Cell lines. Research

Louisville!, Louisville, Kentucky, October, 2015.

Lukashevich:

1. Irina Tretyakova, Brian Nickols, Scott Weaver, Igor Lukashevich, Peter Pushko. Novel iDNA Technology Combines DNA vaccine and Live Attenuated Virus: Application for Yellow Fever and Other Biodefense Vaccines. *2015 ASM Biodefense and Emerging Diseases Research Meeting, February 9-11, 2015, Washington, DC. Program and Abstracts.*
2. Gretchen E. Holz, Juliane I. Beier, Jenny D. Jokinen, Gavin E. Arteel, Igor S. Lukashevich. Arenavirus-induced hepatic cell cycle arrest. *American Society of Virology Annual Meeting,* 11-15 July, 2015, London, Canada, Program and Abstracts.
3. Igor S. Lukashevich, Irina Tretyakova, Peter Pushko. DNA-launched Attenuated Vaccines. *9th Vaccine & ISV Congress*, 18-20 October 2015, Abstract B6.4, Program Book, Seoul, South Korea,
4. Gretchen E. Holz, Jenny Jokinen, Nikole L. Warner, Gavin E. Arteel, and Igor S. Lukashevich. Arenavirus-induced liver pathology: Search for biomarkers of liver involvement in *in vitro* models. 2015. *Abstract & Poster Presentation for Research!Louisville,* University of Louisville.
5. Nikole L. Waner, Jenny D. Jokinen, Gretchen E. Holtz, Gavin E. Arteel, Igor S. Lukashevich. Interaction of Arenaviruses with polarized epithelial cells. 2015. *Abstract & Poster Presentation for Research!Louisville,* University of Louisville.

Matoba:

1. Matoba N*, Kouokam JC, Cary R, Freels A, Hamorsky KT. "The potential of AvFc, an Fc-fused high-mannose glycan-specific lectin, for broad spectrum anti-cancer immunotherapy" <u>*Keystone Symposium: Antibodies as Drugs*</u>, Banff, Canada, February 9 – 12, 2015.
2. Hamorsky KT, Seber L, Husk A, Matoba N*. "Engineering, characterization, and anti-HIV activity of a Bispecific HIV Entry Inhibitor" <u>*Keystone Symposium: Antibodies as Drugs*</u>, Banff, Canada, February 9 – 12, 2015.
3. Matoba N*, Husk A, Kouokam JC, Hamorsky KT, Grooms-Williams T, Mahajan G. "AvFc, a novel Fc fusion protein targeting Env high-mannose glycans" <u>*CROI 2015*</u>, Seattle, WA, February 23 – 26, 2015.
4. Matoba N*, Hamorsky K, Husk A, Kouokam C, Grooms T, Morris MK, Hanson C, Hume S, Vausselin T, Dubuisson J. "Plant virus vector-based engineering and production of AvFc, a novel lectin-Fc fusion protein with broad anti-HIV/HCV activity." Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
5. Husk A*, Kasinger L, Hamorsky K, Matoba N. "Engineering, characterization, and anti-HIV activity of a bispecific HIV entry inhibitor" Plant-Based Vaccines, Antibodies& Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
6. Royal J*, Baldauf K, Kouokam J, Matoba N. "Plant-made cholera toxin B subunit as a candidate oral immunotherapeutic agent against ulcerative colitis" Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
7. Fuqua J*, Riedel S, Lasnik A, Walker J, Hamorsky K, Matoba N, Palmer K. "Mucosal delivery of a L2-based fusion vaccine provides cross-neutralizing protection against

multiple HPV types" Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.

8. Hamorsky K*, Kouokam J, McMullen J, Nelson B, Bennett L, Husk A, Kajiura H, Fujiyama K, Matoba N. "*N*-Glycosylation of cholera toxin B subunit in *Nicotiana benthamiana*: Impacts on host stress response, production yield and vaccine potential" Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
9. Matoba N*. "The PREVENT integrated preclinical development program to develop plant-produced Griffithsin as a topical microbicide" Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
10. Zahin M*, Joh J, Khanal S, Husk A, Mason H, Kim S, Matoba N, Jenson A. "Plant-based recombinant vaccine: purification of HPV16 L1 protein and VLPs from tobacco leaves" Plant-Based Vaccines, Antibodies & Biologics. June 8 – 10, 2015, Lausanne, Switzerland.
11. Baldauf K*, Royal J, Kouokam J, Dryden G, Matoba N. "Cholera Toxin B Subunit Protects against Colitis-Associated Colon Cancer in a Mouse Model" Ohio Valley Society of Toxicology 2015 Student/Postdoc Summer Meeting. June 29, 2015, Cincinnati, OH.
12. Freels A*, Cary R, Husk A, Matoba N. "The potential of AvFc, a novel plant-produced lectin-Fc fusion molecule, for use in anticancer immunotherapy" Research!Louisville. October 28, 2015, Louisville, KY.
13. Lasnik A*, Matoba N, Palmer K. "Detection of the antiviral lectin in animal and human plasma" Research!Louisville. October 28, 2015, Louisville, KY.
14. Baldauf K, Royal J*, Kouokam J, Dryden G, Matoba N. "Cholera toxin B subunit protects against colitis-associated colon cancer in a mouse model" Research!Louisville. October 28, 2015, Louisville, KY.
15. Zahin M*, Joh J, Khanal S, Husk A, Mason H, Kim S, Matoba N, Jenson A. "Plant-based recombinant vaccine: purification of HPV16 L1 protein and VLPs from tobacco leaves" Research!Louisville. October 28, 2015, Louisville, KY.

Siskind:

National/International:

1. Dupre, TV, Doll, MA, Shah, PP, Sharp, CN, Scherzer, MT, Casson, L, Megyesi, J, Beverly, LJ, Schnellmann, RG, Siskind, LJ. Suramin Protects from cisplatin-induced acute kidney injury. Kidney Week, November 4-8, 2015, San Diego, CA
2. Sharp CN, Doll MA, Dupre TV, Siow D, Marimuthu S, Shah PP, Beverly LJ, and Siskind LJ. Developing a more clinically relevant mouse model of cisplatin-induced AKI. American Society of Nephrology-Kidney Week, November 3-8, 2015 San Diego, CA.
3. Dupre, TV, Doll, MA, Shah, PP, Sharp, CN, Scherzer, MT, Casson, L, Megyesi, J, Beverly, LJ, Schnellmann, RG, Siskind, LJ. Suramin Protects from cisplatin-induced acute kidney injury. Society of Toxicology, March 13-17, 2015, New Orleans, LA
4. Sharp CN, Doll MA, Dupre TV, Siow D, Marimuthu S, Shah PP, Beverly LJ, and Siskind LJ. Developing a more clinically relevant mouse model of cisplatin-induced AKI. Society of Toxicology Annual Meeting, March 13-17, 2016 New Orleans, LA.
5. Douglas Saforo, Kumaran Sundaram, Cameron Conway, Gauri Patwardhan, and Leah J. Siskind. Sphingolipids as potential targets for the treatment of acute kidney injury. 2015

Southeastern Medical Scientist Symposium. September 19-20th, 2015. Vanderbilt University in Nashville, TN

6. Douglas J. Saforo, Michael Scherzer, Levi J. Beverly, and Leah J. Siskind. *In-vitro* 3-Dimensional modeling of the tumor microenvironment in non-small cell lung carcinoma. Society of Toxicology Annual Meeting. March 13-17, 2016 New Orleans, LA

Local/Regional:

1. Dupre, TV, Doll, MA, Shah, PP, Sharp, CN, Scherzer, MT, Casson, L, Megyesi, J, Beverly, LJ, Schnellmann, RG, Siskind, LJ. Suramin Protects from cisplatin-induced acute kidney injury. Ohio Valley Society of Toxicology Student Meeting, June 2015. Cincinnati, OH, Tess Dupre Oral presentation
2. Dupre, TV, Doll, MA, Shah, PP, Sharp, CN, Scherzer, MT, Casson, L, Megyesi, J, Beverly, LJ, Schnellmann, RG, Siskind, LJ. Suramin Protects from cisplatin-induced acute kidney injury. Research Louisville, October 2015, Louisville, KY
3. Sharp CN, Doll MA, Dupre TV, Siow D, Marimuthu S, Shah PP, Beverly LJ, and Siskind LJ. Developing a more clinically relevant mouse model of cisplatin-induced AKI. Research Louisville, October 2015, Louisville, KY, 1st prize
4. Dupre, TV, Doll, MA, Shah, PP, Sharp, CN, Scherzer, MT, Casson, L, Megyesi, J, Beverly, LJ, Schnellmann, RG, Siskind, LJ. Suramin Protects from cisplatin-induced acute kidney injury. South Eastern Regional Lipid Conference, November 11-13, 2015, Cashiers, NC
5. Sharp CN, Doll MA, Dupre TV, Siow D, Marimuthu S, Shah PP, Beverly LJ, and Siskind LJ. Developing a more clinically relevant mouse model of cisplatin-induced AKI. 50th Southeastern Regional Lipid Conference, November 11-13, 2015 Cashiers, NC.
6. Douglas J. Saforo, Michael Scherzer, Levi J. Beverly, and Leah J. Siskind. *In-vitro* 3-Dimensional modeling of the tumor microenvironment in non-small cell lung carcinoma. 2015 Research Louisville. October 27-30, 2015 Louisville, KY.
7. Douglas J. Saforo, Michael Scherzer, Levi J. Beverly, and Leah J. Siskind. *In-vitro* 3-Dimensional modeling of the tumor microenvironment in non-small cell lung carcinoma. 50th Southeastern Regional Lipid Conference. November 11-13th, 2015 Cashiers, North Carolina
8. Kiefer AB, Stathem M, Scherzer M, Wattenberg B, Beverly LJ, Siskind LJ, and Siow D. (2015) Role of sphingosine kinase 1 and 2 in MYC-induced leukemogenesis. Research!Louisville. October 25th 2015 Louisville, Kentucky.
9. Strickley J, Siow D, Doll M, Dupre T, Sharp C, Siskind LJ. (2015) The role of neutral ceramidase in cisplatin-induced acute kidney injury. Research Louisville! October 27-28th 2015 Louisville, Kentucky

Song:

1. Laun AS and Song ZH. Cannabigerol Modulates the Efficacy of Anandamide on the CB2 Cannabinoid Receptor. International Cannabinoid Research Society Conference, Wolfville, Nova Socia, Canada, June 2015.
2. Laun AS and Song ZH. Cannabigerol Modulates the Efficacy of Anandamide on the CB2 Cannabinoid Receptor. Research Louisville!, Louisville, KY, October 2015.
3. Shi H, Laun AS, Cai L, and Song ZH. 4-O-Methylhonokiol: a Biased Agonist for the CB2 Cannabinoid Receptor. Research Louisville!, Louisville, KY, October 2015.

States:

Published abstracts:

1. Al-Eryani L. Rai SN, States JC. MicroRNA Profile Changes in Immortalized Human Keratinocytes after Low Arsenic Exposure. Abstract 1973. The Toxicologist CD—An official journal of the Society of Toxicology, Volume 144, Issue 1, March 2015

Local/Regional meetings:

2. Udoh K, Hoffman JM, Trent JO, States JC. Inhibiting the Anaphase Promoting Complex/Cyclosome: An Innovative Approach for Cancer Chemotherapy. Research!Louisville, University of Louisville, Louisville, KY (2015)
3. Al-Eryani L, Jenkins S, Sabine Waigel S, States V Arumugam V, Rai S Galandiuk S,Giri AK, States JC. Differential miRNA and mRNA Expression in Immortalized Human Keratinocytes (HaCaT) after Low Arsenic Exposure Suggest Changes in Cell Proliferation, Cell Migration, Cytoskeleton Remodeling and Carcinogenesis Pathways. Research!Louisville, University of Louisville, Louisville, KY (2015)
4. Carlisle S, Patrick Trainor P, Zhang C, Yin X, Doll M, States JC, Hein DW. Investigating Pathway Changes Associated with Varying Levels of Human Arylamine N-Acetyltransferase 1 (NAT1) Activity in MDA-MB-231 Breast Cancer Cells. Research!Louisville, University of Louisville, Louisville, KY (2015)
5. Hoffman JM, Al-Eryani L, Saforo D, Taylor BF, Trent JO, Garbett NC, States JC. Purification of the C-terminal Domain of ANAPC2 and Evidence Supporting the Interaction of Lead Compounds for Inhibition of Mitosis. Research!Louisville, University of Louisville, Louisville, KY (2015)
6. Wu J, Al-Eryani L, States V, Hoffman J, Doll M, Wise S, Rai S, Galandiuk S, Giri AK, States JC. Overexpression of miR-186 induces polyploidization in HaCaT cell line. Research!Louisville, University of Louisville, Louisville, KY (2015)
7. Jenkins S, Al-Eryani L, States JC. Chronic Low Level Arsenite Exposure Induces Matrix Remodeling Pathways In Human Keratinocytes. Research!Louisville, University of Louisville, Louisville, KY (2015)
8. Al-Eryani L, Jenkins S, Sabine Waigel S, States V Arumugam V, Rai S Galandiuk S,Giri AK, States JC. Differential miRNA and mRNA Expression in Immortalized Human Keratinocytes (HaCaT) after Low Arsenic Exposure Suggest Changes in Cell Proliferation, Cell Migration, Cytoskeleton Remodeling and Carcinogenesis Pathways. Ohio Valley Chapter Society of Toxicology, Northern Kentucky University, Highland Heights, KY (2015)
9. Hoffman JM, Al-Eryani L, Saforo D, Taylor BF, Trent JO, Garbett NC, States JC. Purification of the C-terminal Domain of ANAPC2 and Evidence Supporting the Interaction of Lead Compounds for Inhibition of Mitosis. Ohio Valley Chapter Society of Toxicology, Northern Kentucky University, Highland Heights, KY (2015)
10. Wu J, Al-Eryani L, States V, Hoffman J, Doll M, Wise S, Rai S, Galandiuk S, Giri AK, States JC. Overexpression of miR-186 induces polyploidization in HaCaT cell line. Ohio Valley Chapter Society of Toxicology, Northern Kentucky University, Highland Heights, KY (2015)

Wise, J.:

National/International:

1. Browning CL, Xie H, Kelly DF and Wise Sr J P (2015) The Role of RAD51 in Chemical Carcinogenesis: Prolonged Exposure to Particulate Chromate Inhibits Filament Formation and Induces Cytoplasmic Accumulation. Proceedings of the Keystone Symposia on DNA Repair 115: 45.
2. Martino J, Holmes AL, Xie H, Thompson WD and Wise Sr JP (2015) Centriole Defects in Chemical Carcinogenesis: Particulate Cr(VI) Causes Premature Centriole Disengagement through Plk1 and Separase Activation. Toxicological Sciences 144: 69.
3. Browning CL, Xie H, Kelly DF and Wise Sr JP (2015) The Inhibition of DNA Repair Protein, RAD51, by Prolonged Exposure to Particulate Chromate. Toxicological Sciences 144: 68.
4. Falank C and Wise Sr JP (2015) Chronic exposure to particulate hexavalent chromium disrupts sister chromatid cohesion in human lung cells. Toxicological Sciences 144: 68.
5. Thompson KN, Qin Q, Xie H and Wise Sr JP (2015) Investigating the Effect of Hexavalent Chromium on an Error-Prone Repair Pathway, Non-Homologous End Joining. Toxicological Sciences 144: 116.
6. Wise SS, Xie H, Fukuda T, Thompson WD, Guillette Jr LJ and Wise Sr JP (2015) Assessing the Effects of Hexavalent Chromium in Two Reptilian Species: Implications for Metal Impacts of Global Warming. Toxicological Sciences 144: 68.
7. Speer RM, The T and Wise Sr JP (2015) The Cytotoxicity and Genotoxicity of Particulate and Soluble Cobalt in Human Urothelial Cells. Toxicological Sciences 144: 75.
8. Xie H, Wise Sr JP, Stewart J, Yang L and Nutter N (2015) Mechanism of Arsenic Synergistic Effect on Hexavalent Chromium-induced Metaphase Damage in Human Lung Cells. Toxicological Sciences 144: 424.
9. Savery LC, Wise JTF, Wise SS, Falank C, Gianios Jr C, Thompson WD, Perkins C, Zheng T, Zhu C and Wise Sr JP (2015) Global Assessment of Copper and Zinc Concentrations in Free-Ranging Sperm Whales (*Physeter macrocephalus*) As an Indicator Species. Toxicological Sciences 144: 72.
10. Wise Sr JP, Browning CL, Wise SS, Qin Q, Kelly DF, Jasin M, Prakash R and Xie H (2015) How a Carcinogen Evades Repair: The Mechanisms of Chromate Inhibition of DNA Double Strand Break Repair. Proceedings of the 5th Georgian Bay International Conference on Bioinorganic Chemistry 44.
11. Young JL, Wise SS, Xie H, Wise CF, Fukuda T, Guillette Jr L and Wise Sr JP (2015) A Comparison of the Cytotoxic and Genotoxic Effects of Hexavalent Chromium in Human, Sea Turtle, and Alligator Skin Cells. Proceedings of the 5th Georgian Bay International Conference on Bioinorganic Chemistry 64.
12. Wise SS, Martino J and Wise Sr JP (2015) Hexavalent Chromium Induces Permanent and Heritable Chromosome Instability in Human Lung Cells. Proceedings of the 5th Georgian Bay International Conference on Bioinorganic Chemistry 65.
13. Wise Jr JP, Wise JTF, Wise CF, Wise SS, Gianios Jr C, Xie H, Thompson WD, Perkins C and Wise Sr JP (2015) One Environmental Health: Insights into the Potential Long-Term Health Impacts of the Gulf of Mexico Oil Crisis Learned From Whale Cells and Tissues. Environmental and Molecular Mutagenesis 56(S1): S24.
14. Young JL, Wise SS, Xie H, Wise CF, Fukuda T, Guillette Jr L and Wise Sr JP (2015) A

Comparison of the Cytotoxic and Genotoxic Effects of Hexavalent Chromium in Human, Aquatic Reptile and Aquatic Mammal Skin Cells. Environmental and Molecular Mutagenesis 56(S1): P71.

15. Wise Jr JP, Wise JTF, Wise CF, Wise SS, Gianios Jr C, Xie H, Thompson WD, Perkins C and Wise Sr JP (2015) The Impact of the Deepwater Horizon on Whales: A 3-Year Study of Metal Levels in Gulf Sperm Whales in Aftermath of the Spill. Proceedings of the 21st Biennial Conference on the Biology of Marine Mammals.
16. Wise SS, Wise JT, Wise CF and Wise Sr JP (2015) Chemical Dispersants, Oil and Chemically Dispersed Oil Are Toxic to Sperm Whale Skin Cells. Proceedings of the 21st Biennial Conference on the Biology of Marine Mammals.
17. Browning CL, Wise Jr JP, Wise JTF, Wise CF, Perkins CR, Thompson WD and Wise Sr JP (2015) Metal and Essential Element Levels in Three Baleen Whale Species in the Gulf of Maine (2010-2012). Proceedings of the 21st Biennial Conference on the Biology of Marine Mammals.
18. Savery LC, Wise JTF, Wise SS, Gianios Jr C, Perkins C, Buonagurio J, Zheng T, Zhu C and Wise Sr JP (2015) Copper and Zinc Concentrations in the Skin of Free-Ranging Sperm Whales (*Physeter macrocephalus*) from Around the Globe. Proceedings of the 21st Biennial Conference on the Biology of Marine Mammals.
19. Young JL, Wise SS, Xie H, Wise CF and Wise Sr JP (2015) Whale Cells May Have More Efficient Cellular Mechanisms Against Chromium Induced Genotoxicity Than Both Human and Turtle Cells. Proceedings of the 21st Biennial Conference on the Biology of Marine Mammals.

Local/Regional:

20. Browning CL, Xie H, Kelly DF and Wise Sr JP (2015) The Role of RAD51 in Chemical Carcinogenesis: Prolonged Exposure to Particulate Chromate Inhibits Filament Formation and Induces Cytoplasmic Accumulation. Presented at Research!Louisville, University of Louisville.
21. Young JL, Wise SS, Xie H, Wise CF, Fukuda T, Guillette Jr L and Wise Jr JP (2015) A comparison of the cytotoxic and genotoxic effects of hexavalent chromium in human, aquatic reptile and aquatic mammal skin cells. Presented at Research!Louisville, University of Louisville.
22. Speer RM, The T and Wise Sr JP (2015) The Cytotoxicity and Genotoxicity of Particulate and Soluble Cobalt in Human Urothelial Cells. Presented at Research!Louisville, University of Louisville.

Wise, S.:

1. September 2015: Environmental Mutagenesis and Genomics Society, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Gianios, Jr., C., Xie, H., Thompson, W.D., Perkins, C. and Wise, Sr., J.P. One Environmental Health: Insights into the Potential Long-Term Health Impacts of the Gulf of Mexico Oil Crisis Learned From Whale Cells and Tissues.
2. September 2015: Environmental Mutagenesis and Genomics Society, Young, J.L., Wise, S.S., Xie, H., Wise, C.F., Fukuda, T. Lou Guillette, Jr. and Wise, Sr., J.P. A Comparison of the Cytotoxic and Genotoxic Effects of Hexavalent Chromium in Human, Aquatic Reptile and Aquatic Mammal Skin Cells.
3. October 2015: Research!Louisville, Young J.L., Wise S.S., Xie H., Wise C.F., Fukuda T.,

Guillette Jr., L., Wise Jr., J.P. A comparison of the cytotoxic and genotoxic effects of hexavalent chromium in human, aquatic reptile and aquatic mammal skin cells.

4. October 2015: Research!Louisville, Wu, J., Al-Eryani, L., States, V., Hoffman, J.M., Doll, M., Wise., S.S., Rai, S.N., Galandiuk, S., Giri, A.K., States, J.C. Overexpression of miR-186 Induces Polyploidization in HaCaT Cell Line.
5. October 2015: Ohio Valley Chapter Society of Toxicology, Wu, J., Al-Eryani, L., States, V., Hoffman, J.M., Doll, M., Wise., S.S., Rai, S.N., Galandiuk, S., Giri, A.K., States, J.C. Overexpression of miR-186 Induces Polyploidization in HaCaT Cell Line.
6. December 2015: Society of Marine Mammalogy, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Gianios, Jr., C., Xie, H., Thompson, W.D., Perkins, C., Wise, Sr., J.P. The Impact of the Deepwater Horizon on Whales: A 3-Year Study of Metal Levels in Gulf Sperm Whales in Aftermath of the Spill.
7. December 2015: Society of Marine Mammalogy, Wise, S.S., Wise, J.T., Wise, C.F., Wise, Sr., J.P. Chemical Dispersants, Oil and Chemically Dispersed Oil Are Toxic to Sperm Whale Skin Cells.
8. December 2015: Society of Marine Mammalogy, Savery, L.C., Wise, J.T.F., Wise, S.S., Gianios, Jr., C., Perkins, C., Buonagurio, J., Zheng, T., Zhu, C. and Wise, Sr., J.P. Copper and Zinc Concentrations in the Skin of Free-Ranging Sperm Whales (*Physeter macrocephalus*) from Around the Globe.
9. December 2015: Society of Marine Mammalogy, Young, J.L., Wise, S.S., Xie, H., Wise, C.F., Wise, Sr., J.P. Whale cells may have more efficient cellular mechanisms against chromium induced genotoxicity than both human and turtle cells.

ACTIVE GRANTS/CONTRACTS
Faculty with Primary Appointments

Agency/ Number	Title	Role	PI	Project Period	Award
Antimisiaris, Demetra					
NIH RO1	Asthma in Older Adults: Identifying Phenotypes and Factors	Co-I		2/1/2015-1/31/2020	*$2,926,564
HRSA (GWEP- Geri workforce education program)	Ky Rural Underserved Geriatric Interprofessional program (KRUGIEP)	Key		July 2015,2016,2017	
Coulter Translational Partnership Subgrant Award	Virtual Manager to Assist Caregivers of Patients with Dementia	Co-I		May 2014-August 2015	$105,000
Arteel, Gavin					
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	$1,918,730	$119,015
U01 AA021901	Novel therapies in alcoholic hepatitis	Co-I	McClain	$1,036,553	$518,276

	University of Louisville				
R01 AA021978	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	PI	Arteel	$1,125,000	$562,500
R01 AA021978S1 (minority supplement)	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	Mentor	Hudson	$83,418	$39,871
R01 DK100414	Therapeutics development for hepatic fibrosis	Sub. PI	R Maitra	$94,767	$47,383
MFE-135424 (CIHR postdoctoral fellowship)	Role of extracellular matrix and inflammatory remodeling in alcohol liver and lung damage	Mentor	A Mohamed	$88,000	n/a

Beier-Arteel, Juliane					
1K01DK096042-01	Enhancement of NAFLD risk by vinyl chloride: interaction of gut-liver-adipose axis	PI	Beier	04/01/13-03/31/18	$447,967
7R01AI093450-02	Development of new bivalent cross- protective arenaviral vaccines	Co-I	Lukashevich	09/01/11-3/31/16	$1,503,112 (+ $794,558 in subcon)
NIEHS/R13	Environmental Chemicals and Liver Disease	Co-I	Cave	07/01/14-06/30/15	$15,429
NCI/ R25-CA134283	University of Louisville Cancer Education Program	Mentor	Hein	09/01/14-08/31/16	$318,142
T35-DK072923	Summer Endocrine Research Training Program	Mentor	Klinge	05/01/15-04/30/16	$36,206
1R03DK107912	Vinyl chloride-NAFLD interaction	PI	Beier	01/16-12/17	$130,000
Ceresa, Brian					
NIH/NCI R01 CA193220	Ubiquilin1 regulates EMT and metastasis of human lung adenocarcinoma	Co-I (1%)	Beverly	8/1/15 - 7/31/20	$1,862,500
NIH/NIGMS R01GM092874	Endocytic Regulation of EGFR Signaling	PI (10%)	Ceresa	09/01/10-08/31/14 (NCE)	$600,000
NIH/NEI R01EY021497	Modulation of EGFR Signaling to Promote Corneal Wound Healing	PI (20%)	Ceresa	01/01/12 – 12/31/14 (NCE)	$750,000
PanOptica, LLC	The Effect of PAN-90806 on EGFR-mediated Corneal Epithelial Homeostasis	PI (30%)	Ceresa	7/15/14-9/15/15	$105,000
Chen, Shao-yu					

RO1 AA021434	Role of microRNA in ethanol-induced apoptosis and teratogenesis	PI	Chen	07/2013 – 06/2018	$1,125,000
R01AA020265	Role of Siah1 in ethanol-induced apoptosis and teratogenesis	PI	Chen	07/2012 – 06/2017	$1,125,000
R01AR063630	Coordinated cytoskeletal dynamics in skin somatic stem cells	Sub-contract PI	Wu	09/2013 – 08/2018	$1,125,000 ($125,000 for subcontract)
Clark, Geoffrey					
R01 CA133171-01A2	The Role of the Ras effector Nore1a in tumor suppression	PI	Clark	2010-2016	$900,000
NIH Eureka Award/ 1R01CA153132-01	Oncopigs as a better model for human cancer	PI	Clark	2010-2016	$800,000
NIH Excite Award	A first –in-class RalGEF inhibitor as an anti-Ras drug.	PI	Clark	2016-2018	$200,000
Jewish Hosp Fund for Excellence	The development of a novel small molecule inhibitor of lung cancer	PI	Clark	2015-2017	$250,000
Gupta, Ramesh					
R43-CA-162417	Sustained, Target Delivery for Treatment of Cervical Pathologies	M-PI	Gupta Spencer	07/12-12/15	$300,000
U.S. Highbush Blueberry Council	Therapeutic Activity of Blueberry Against Lung Cancer	PI	Gupta	08/13-07/15	$74,270 (Directs)
KY Matching	This grant is a supplement to the SBIR Phase I grant listed above	PI	Gupta	01/13-12/15	$150,000 (Directs)
Coulter Foundation	Treatment of Cervical Pathologies by Curcumin Delivered Locally by a Polymeric Device - Phase I	M-PI	Gupta Parker O'Toole	07/14-02/16	$138,714 (Total)
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	$67,601 (Total)
KY Matching	This grant is a supplement to the SBIR Phase I grant on Exosomal Drug Formulation	PI	Gupta	04/15-03/16	$150,000 (Directs)
Helmsley Trust Fund	Plant-based cancer therapeutics	PI	Gupta	11/15-10/16	$100,000 (Directs)
Hein, David W.					

NCI R25-CA134283	University of Louisville Cancer Education Program	PI	Hein	09/14/11-08/31/16	$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, Inc.	Investigation into the N-acetylation of solithromycin	PI	Hein	10/10/15 – 01/31/16	$24,450
Hood, Joshua					
Elsa U. Pardee Foundation OGMB151049	Magnetic Resonance Imaging and Tracking of Melanoma Exosomes	PI	Hood	1/1/15 – 12/31/15	$81,066 (Direct)
NIH NIGMS R21 GM107894-03	Continuous Separation of Melanoma Exosomes using Field-Flow Fractionation	Co-PI	Gale/Hood	1/1/15 – 7/31/16	$54,480 (Direct)
U of L School of Medicine Basic Grant Program	Melittin Modified Exosome Immunotherapy for Melanoma	PI	Hood	12/1/15 – 11/30/16	$21,250 (Direct)
NIH NCI R21 CA198249-01	A Novel Vaccination Stratagem for Lung Cancer	Collab.	Yaddanapudi (JGBCC collaborator)	7/1/15 – 6/30/17	N/A, unpaid
Kang, Y James					
1R01AA023190	Mechanisms of Probiotics in Alcoholic Liver Disease	Consult	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-CA134283-01A1	University of Louisville Cancer Education Program	Co-I, Ca Educ Coord, Mentor	Hein	9/14/12-08/31/16	$1,560,990
Lukashevich, Igor S					
NIH/R01 AI093450	Development of New Bivalent Cross-Protective Arenaviral Vaccines	Contact PI	MPI	04/01/11-03/31/16	$3,964,538
NIH/2R44AI094863-03A1	Novel DNA-launched Attenuated Vaccine for VEE Virus, SBIR Phase II	PI on sub	Pushko	01/2016-12/2017	$600,000
Matoba, Nobuyuki					
NIH Microbicide Innov	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	6/10/10-6/30/16	$1,175,000 (total direct costs), NCE

Program V/ R21/R33 AI088585					
DoD/USAMRMC/W81XWH-10-2-0082-CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Sub-Proj PI	Wilkerson	9/30/11-10/29/16	$1,748,000 (total direct costs)
Brown Ca Ctr Helmsley Charitable Trust Prog	Immunotherapeutic potential of plant-made CTB against colitis and colon cancer	PI	Matoba	7/18/11-12/31/15	$170,000 (total direct costs)
Brown Ca Ctr Helmsley Charitable Trust Prog	Plant-made *N*- mannosylated cholera toxin B subunit as a novel vaccine scaffold	PI	Matoba	11/1/15 – 10/31/16	$125,000 (total direct costs)
NIH NIAID/ U19 AI103458-01	Griffithsin-based Rectal Microbicides for PREvention of Viral ENTry (PREVENT)	Core C PI	Palmer	7/01/14 – 6/30/19	$15,500,390 (total direct costs)
NIH/NIGMS P30GM106396	Plant-made lectibody targeting tumor-associated high-mannose-glycan antigens as a novel cancer immune-therapeutic/diagnostic agent	CoBRE Pilot PI	Miller	7/1/15-6/30/16	$75,000 (total direct costs)
Palmer, Kenneth					
NIH/NIHLB 1U10HL127518-01	The EXCITE Program: Expediting Commercialization, Innovation, Translation and Entrepreneurship	Leadership team	Bates, Miller, Krentzel	04/01/2015 – 03/21/2018	$2,998,200
NIH/NIAID U19 AI 113182-01	Griffithsin-based rectal microbicides for prevention of viral entry (PREVENT)	PD/PI	Palmer	07/01/2014 – 06/30/2019	$14,793,126 **
NIH/NIAID U19 AI 113182-661	PREVENT Program Administrative Core	PI	Palmer	07/01/2014 – 06/30/2019	** see parent award above
NIH/NIAID U19 AI 113182-666	Project 2: PREVENT program preclinical studies	PI	Palmer	07/01/2014 – 06/30/2019	** 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	01/01/2014 – 12/31/2017	$5,500,000
NIH/NIAID R33 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	Co-I	Matoba	06/01/2012-5/31/2015	$1,350,000

DoD/USAMRMC W81XWH-10-2-0082-CLIN 1	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI of sub-award to UofL	Wilkerson, Palmer	08/23/2010-08/22/2015	$1,751,000
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	9/30/2011-10/29/2016	$1,748,000
Siskind, Leah					
NIH/NIDDK (R01) DK093462	Targeting Ceramide-Induced Kidney Cell Apoptosis and Necrosis for the Treatment of Acute Kidney Injury	PI	Siskind	09/17/2012-04/30/2017	$217,500 annual direct costs
NIH/NIDDK (T35) DK072923	Summer Endocrine Research Training Program	Mentor	Klinge	5/25/2015 – 7/31/2015	
Song, Zhao-Hui					
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	8/1/2014 -7/30/2016	$ 22,500
R01DA003934	Molecular Determinants of Cannabinoid Activity	PI, U of L subcontract	P Reggio	4/1/2015-3/31/2020	$ 375,000
States, J Christopher					
NIEHS R21ES023627	Differential miRNA expression in arsenic-induced skin carcinogenesis	PI	States	07/01/2015-06/30/2017	$422,000
KY Lung Cancer Research Program	Targeting the anaphase promoting complex as lung cancer chemotherapy.	PI	States	5/01/2015 – 4/30/17	$150,000
KSEF-3249-RDE-018	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	07/01/2015-06/30/2016	$30,000
NIEHS T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/04-06/30/2015	$2,735,374
NCI R25CA134283	University Of Louisville Cancer Education Program	Mentor	Hein	09/14/12 – 08/31/16	$1,483,277
NIEHS T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/06 – 03/31/16	$324,696
Wise, John					
Maine Space Grant	Sea Turtle MSGC	PI	Wise	06/01/14 - 05/31/15	$20,313

Consortium/SG-14-29					
Prince William Sound Regional Citizens' Adv Council/955-12-02	Toxicology of Chemical Dispersants in Alaskan Whales	PI	Wise	01/01/12 - 12/31/15	$102,686
Army Research Office/W911 NF-09-1-0296	Toxicity of Gold Nanoparticles in Human Lung Cells	PI	Wise	06/01/09 - 06/30/15	$1,552,000
NIEHS/R01 ES016893	Particulate Cr(VI) Toxicology in Human Lung Epithelial Cells and Fibroblasts	PI	Wise	07/01/08 - 12/31/18	$1,628,181

RESEARCH GRANTS SUBMITTED

Faculty with Primary Appointments

Agency/ Number	Title	Role	PI	Project Period (requested)	Budget Request
Antimisiaris					
Retirement Research Foundation	Process Based Medication Management Education for Three Categories of Stake Holders	Investigator		Not funded invited to resubmit	$316,334
Arteel					
P50 AA024337-01	University of Louisville Alcohol Research Center	Pilot Core Director, Proj. Co-I; Education Co-director	McClain	12/01/15-11/30/20	$9,000,000
T32 ES011564 (A1)	UofL Environmental Health Sciences Training Program	PI	Arteel	04/01/16-03/31/21	$2,310,776
P20 GM113226	Hepatobiology and Toxicology COBRE	Core Dir./mentor	McClain	12/01/14-11/30/19	$11,250,000
R01 ES026628	Contribution of environmental toxicants in the development of metabolic disease	Co-I	Freedman	04/01/16-03/31/21	$1,925,000

GRANT11959061 (DoD)	A Phylogenomic Approach for the Identification and Development of Biomarkers of Transition Metal Toxicity in Humans	Co-I	Freedman	10/01/16-04/30/18	$304,421
F31 AA02466 (A1)	Crosstalk between the Extracellular Matrix and Inflammation in Alcoholic acute lung injury	Mentor	L Poole	04/01/16-03/31/19	$93,054
LT000856/2016-L (HFSP postdoctoral fellowship)	Mechanistic association between arsenic and inflammation associated with metabolic disorder	Mentor	A Mohamed	01/01/17-12/31/19	$160,980
R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/01/16-08/31/21	$1,620,000
PhRMA Found (predict fellowship)	Crosstalk between the Extracellular Matrix and Inflammation in Alcoholic acute lung injury	Mentor	L Poole	01/01/16-12/31/17	$40,000
LSRF Awards Postdoctoral Fellowship	Mechanistic association between arsenic and inflammation-associated metabolic disorder	Mentor	A Mohamed	01/01/17-12/31/19	$180,000
R01 HL133798	Age-dependent matrisome changes predispose to injury-induced fibrosis	MPI	Roman, Arteel, Siskind, Beverly	07/01/2016-06/30/2020	$2,147,202
KLCRP (cycle 15)	Aging- and stress-related changes in lung matrisome in lung cancer progression	MPI	Roman and Arteel	06/01/2016-05/31/2018	$166,636
Beier-Arteel					
P20 GM113226	Hepatobiology and Toxicology COBRE	Pilot	McClain	12/15-11/20	$7,500,000
NIEHS/ONES (R01)/ 1R01ES026335	Chlorinated solvent-induced NASH/TASH interaction: insight into mechanisms and potential risk	PI	Beier	12/15-11/20	$1,327,075
VA	Military Chemical Exposures and Liver Disease in Veterans	Co-I	Cave	12/15-11/20	$1,250,000
Gilead Sci	Impact of vinyl	PI	Beier	01/16-	$130,000

Research Scholars Program in Liver Disease	chloride on mitochondrial function in NAFLD: potential mechanism of nutrient:toxicant interaction			12/17	
NIEHS/ 1R01ES02703 9-01	Chlorinated solvent-induced NASH/TASH interaction: insight into mechanisms and potential risk	PI	Beier	07/16-06/21	$1,250,000
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
Ceresa					
NIH/NEI T35EY026509	Summer Vision Sciences Training Program	Co-PI	Ceresa/ Kaplan	4/1/16-3/31/21	$40,066
NIH/NIGMS R01GM118681	ErbB3 as a Regulator of EGFR signaling	PI	Ceresa	4/1/16-3/31/21	$1,250,000
NIH/NEI R21EY027032	Identifying novel c-Cbl antagonists to promote corneal epithelial regeneration	PI	Ceresa	7/1/16-6/30/18	$275,000
Molecular Targets CoBRE Pilot Project Program	ErbB3 Regulation of EGFR signaling	PI	Ceresa	7/1/15-6/30/17	$150,000
KY Lung Cancer Research Program	ErbB3 as a Regulator of EGFR Signaling in Lung Cancer	PI	Ceresa	6/1/16-05/31/18	$150,00
ADA	Enhancement of corneal wound healing via c-Cbl antagonists.	Mentor	Neves	4/1/16 - 3/31/19	$177,468
UofL ExCITE Product Develoment Grant	Novel compound designed to enhance corneal wound healing	Mentor	Neves	9/1/15-8/30/17	$150,000
NIH/NIGMS	Endocytic regulation of EGFR:effector communication by tyrosine phosphorylation	Mentor	Bankston	4/1/15-3/31/18	$239,859
ACS	Endocytic regulation of EGFR phosphorylation and downstream signaling	Mentor	Bankston	7/1/15-6/30/18	$163,500

OCAST	Role of MMP-2 in corneal epithelial barrier function in homeostatic cell turnover and disease	Co-I	Wiechman n	7/1/15-6/30/18	$135,000
NIH/NCI	UofL Cancer Education Program	Mentor	Hein	4/1/16-3/31/21	$1.62M
Chen					
NIAAA/P50 Alcohol Center grant	The role of nutrition in the development/progressi on of alcohol-induced organ injury. Project 3	Project 3 PI	McClain	5/1/16-4/30/21	$9,000,000 (total budget) $1,207,000 Project 3 total budget
NIH P20	North Carolina Central University-JGBCC Cancer Health Disparity Partnership	Faculty Mentor	Kidd	10/15-9/19	$798,636
NIH S10	Shared Instrument grant	Participant	Bickford		
NIH NCI R25	Cancer Education	Mentor	Hein		
NIH NIEHS T35	Summer Training Program in Environmental Health	Mentor	Prough		
NIH NIEHS T32	UofL Training Program in Environmental Health	Mentor	Hein/ Arteel		
Clark					
Avon Foundation	A Novel Inhibitor of RalGDS to Inhibit Breast Cancer Metastasis	PI	Clark	2015-2017	$200,000
St. Baldrick Foundation	Novel inhibitors of RalGDS for Medulloblastoma	PI	Clark	2015-2016	$100,000
CDMRP Breast cancer research	A RalGDS Inhibitor to Suppress Breast Tumor Growth and Metastasis	PI	Clark	2015-2018	$394,000
National Pancreas Association	Novels RalGDS inhibitors to antagonize pancreatic cancer	PI	Clark	2015-2016	$50,000
CDMRP ovarian Cancer	A RalGEF inhibitor as a novel therapeutic approach to ovarian cancer	PI	Clark	2016-2018	$250,000
CDMRP Pancreatic cancer	Novel RalGEF inhibitors to antagonize pancreatic cancer	PI	Clark	2016-2018	$400,000
Kentucky Lung Ca Res Prog	Novel small molecule inhibitors of the Ras	PI	Clark	2016-2018	$150,000

	Oncoprotein for Lung cancer				
Kentucky Lung Ca Res Prog	Physiologically relevant K-Ras synthetic lethals	Co-PI	Siskind	2016-2018	$150,000
NIH R21	Novel RalGDS Inhibitors to Block Pancreatic Cancer	PI	Clark	2016-2018	$275,000
NIH Transformative R01	Turning Hyde Into Jekyll: Re-Routing Oncogenic Signaling to Induce Cancer Cell Death	Co-PI	Bates	2016-2021	$1,000,000
NIH U01	Physiologicaly relevant K-Ras synthetic lethals	PI (Co-PIs Siskind and Beverley)	Clark	2016-2020	$2,500,000
Freedman					
NIEHS/R01 ES026628-01	Contribution of environmental toxicants in the development of metabolic disease	PI	Freedman	10/16-09/21	$1,875,000 ($1,250,000 direct)
NIEHS/R01 ES027039-01	Chlorinated solvent-induced NASH/TASH interaction: insight into mechanisms and potential risk	Co-PI	Beire	07/16-06/21	$1,875,000 ($1,250,000 direct)
DoD/PR151975 - GRANT11959061	A phylogenomic approach for the identification and development of biomarkers of transition metal toxicity in humans	PI	Freedman	10/2016 -09/2017	$304,421 ($200,00 direct)
European Commission Horizon 2020	Phylogenomic Toxicology: a statistically robust framework for predictive human safety testing	Co-Project PI	Colbourne	09/2015-08-2020	$32,000,000
NCI/R25 CA134283	University of Louisville Cancer Education Program	Member	Hein	09/2015-08/2016	$293,984
NIEHS/T32 ES011564	UofL Environmental Health Sciences Training Program	Member	Arteel	06/2016-05/2021	$2,211,776 ($2,183,597 direct)
NIEHS/T35 ES014559	Summer Environmental Health	Member	Prough	04/2016-03/2021	$190,00 ($175,000 direct)

	Sciences Training Program				
Fuqua					
UofL Excite RFA #1	Economic Analysis and Development of Broad-spectrum Antiviral Griffithsin	PI	Fuqua	11/15-10/17	$200,000
UofL Excite RFA #2	Cost-Guided Process Design and Optimization in the Production of the Broad-Spectrum Antiviral Griffithsin	PI	Fuqua	2/16-1/18	$200,000
Gupta					
NCI SBIR Phase I	New Technology for Isolation of Anthocyanidins and Efficacy against Human Cancers	PI	Gupta Spencer	4/15- 3/16	$300,000
NCI SBIR Phase II	Exosomal Drug Delivery	PI	Gupta Spencer	4/15- 3/16	$1,998,000
NCI R01	Novel Adjuvant Therapy for Lung Cancer	PI	Gupta	7/16-6/21	$2,878,651
NCI R01	Strategies for Effective Treatment of Breast Cancer	PI	Gupta	7/16-6/21	$2,855,761
Hein					
NCI R25-CA134283 (non-competing renewal)	University of Louisville Cancer Education Program	PI	Hein	09/01/15-08/31/16	$272,275
NIEHS T32- ES011564 (NCE)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/15-06/30/16	$43,420
NCI R25-CA134283	University of Louisville Cancer Education Program	Multi-PI	Hein & Kidd	09/01/16 – 08/31/21	$1,620,000
NIEHS T32 ES011564	UofL Environmental Health Sciences Training Program	Co-I	Arteel	04/01/16 – 03/31/21	$2,311,776
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	04/01/16 - 03/31/19	$440,336

NIEHS T35 ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/16 – 03/31/21	$175,000
NIH R25 GM119953	Building a Bridge to Biomedical Research Careers (BBBRC)	Mentor	Kakar & Joshua	07/01/16 – 06/30/21	$1,428,990
NIH R01 ES026628	Contribution of environmental toxicants in metabolic disease	Co-I	Freedman	04/01/16 - 03/31/21	$1,875,000
NIH P20 CA203535	2/2 NCCU/JGBCC Cancer Health Disparity Partnership	Education Core Co-Director	Kidd	10/09/15-09/30/19	$784,744
NIH T32	Stem cells in regenerative medicine and tumorigenesis	Co-Director	Ratajczak & Kakar	09/01/15-08/31/20	$1,343,354
NIH T32	Stem cells in physiology and pathophysiology	Co-Director	Ratajczak & Kakar	09/01/15-08/31/20	$1,905,380
Cempra Pharmaceuticals, Inc.	Investigation into the N-acetylation of solithromycin	PI	Hein	10/01/15 – 01/31/16	$24,450
Hood					
NIH NCI R21 CA196672-01	Tracking Melanoma Exosomes *in vivo*	PI	Hood	7/1/15 – 6/30/17	$275,000 (Direct)
JGBCC Molecular Targets CoBRE Phase III Pilot OGMB130096	Antagonizing the Pre-Metastatic Niche with Melittin Modified Melanoma Exosomes	PI	Hood	7/1/15 – 6/30/17	$150,000 (Direct)
DOD Peer reviewed cancer research program, idea award with special focus W81XWH-15-PRCRP-IA	Targeting phenotype switching via tumor-derived exosomes to inhibit melanoma progression	Co-I (Nanomedicine expert required)	McMasters (JGBCC collaborator)	5/1/16 – 4/30/18	4% effort
Beckman Young Investigators Program	Tuning exosomes to modulate macrophage inflammation: A therapeutic strategy for melanoma	PI	Hood	9/1/16 – 8/31/20	$750,000
Searle Scholars Program	Exosome Immunotherapy for Melanoma	PI	Hood	7/1/16 – 6/30/19	$300,000
Pew Biomedical Scholars Program	Exosomal Adjuvant Nanocarriers to Treat Melanoma	PI	Hood	8/1/16 – 7/31/20	$240,000

SBIR Contract Solicitation PHS 2016-1 NIH/NCI 344	Continuous exosome and oncosome separations using a modified SPLITT system	Co-PI (Research component, application scientist)	Petersen/ Gale/Sant (Univ. of Utah Espira Inc.) and Hood (U of L)	7/1/16 – 3/31/17 (9 months)	$32,467 (Phase I, Direct)
NIH Director's New Innovator Award Program (DP2), RFA-RM-13-007	Pioneering Immunotherapeutic Exosomal Nanocarriers to Treat Melanoma	PI	Hood	9/30/16 – 6/30/21	$1,500,000 (Direct)
Kidd					
NCI, NIH P20	NCCU-JGBCC Cancer Health Disparity Partnership	Contact PI, Adm PI, Pilot Project PI	Kidd/ Kimbro	10/1/15-9/30/19	$798,636
R25-CA134283-06 (renewal)	University of Louisville Cancer Education Program	Dir,Ca Educ Coord, Mentor	Hein/ Kidd	9/1/16-08/31/20	$1,620,000
Kouokam					
NIAID	Safety and efficacy of plant produced Griffithsin in the context of colorectal pathologies.	Co-I	Palmer	2016-2018	$271,830
Lukashevich					
NIH/1R01AI126334-01	Recombinant Reassortant Vaccine Platform to Control Lassa Fever	PI	MPI	07/1/16-6/30/11	$1,283,330
UofL-Excite	A versatile, diamond-based approach to transdermal drug delivery	Co-PI	Paxton	2016-2017	$50,000
Matoba					
P30GM106396, Pilot project	Subproject: Plant-made lectibody targeting tumor- associated high-mannose-glycan antigens as a novel cancer immune-therapeutic/diagnostic agent	PI	Matoba	7/1/15-6/30/16	$75,000
R01 AI117742-01	Design and Development of a Virus Trap and Safety Net Approach for STI Prevention	Co-I	Steinbach	7/1/14-6/30/18	$2,374,552 *Not Funded*

UofL ExCITE NIH U01 HL127518	Oral Solid Dosage Formulation of Cholera Toxin B Subunit	Co-PI	Hamorsky/ Matoba	10/1/15-9/30/17	$200,000 *Not Funded*
UofL ExCITE NIH U01 HL127518	Oral Solid Dosage Formulation of Cholera Toxin B Subunit	Co-PI	Hamorsky/ Matoba	2/1/16-1/3118	$200,000 *Pending*
1R21CA205542-01	Plant-made lectibody for cancer immunoPET and radioimmuno-therapy	Co-PI	Guo/ Matoba	4/1/16-3/31/18	$275,000 direct *Not Funded*
1R21CA208865-01	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI	Matoba	7/1/16-6/30/18	$275,000 direct *Pending*
Palmer					
U01 HL127518-01 EXCITE Program RFA1	Economic Analysis and Development of Broad-spectrum Antiviral Griffithsin	Co-PI	Fuqua/Palmer	11/1/15-10/31/17	$200,000
U01 HL127518-1 EXCITE Program RFA 2	Cost-Guided Process Design and Optimization in the Production of the Broad-Spectrum Antiviral Griffithsin	Co-PI	Fuqua/Palmer	2/1/16-1/31/18	$200,000
R01 AI125113-01	Design and development of a virus trap and safety net approach for STI prevention	Co-I	Steinbach	4/1/16-3/31/21	$1,897,424
Siskind					
1U01CA199214-01A1	Identifying physio-logically relevant RAS synthetic lethal components	M-PI	Siskind, Clark, Beverly	7/1/16-6/30/20	$2,015,515
1R01CA205601-01	(PQ9) Cisplatin induces accelerated renal aging and chronic kidney disease	M-PI	Siskind, Beverly	3/1/16-2/28/21	$1,942,136
1R01DK110348-01	Mechanisms of Renal Dysfunction Following Repeated Low Dose Cisplatin	M-PI	Siskind, Beverly	7/1/16-6/30/21	$1,859,452
Kentucky Lung Ca Res Prog	Identification of Physio-logically Relevant K-Ras Synthetic Lethal Components	PI	Siskind	1/16-12/17	$150,000
1R01HL133798-01	Age-dependent matrisome changes predispose to injury-	M-PI	Roman,	7/1/16-6/30/20	$1,859,452

	induced fibrosis		Siskind, Clark, Beverly,		
NIH/NIDDK (F31)	The role of glycol-sphingolipids in cisplatin-induced mitochondrial dysfunction during acute kidney injury	Mentor	Dupre		$31, 089
Song					
R25CA134283-06	UofL Cancer Education Program	Faculty Mentor	Hein/Kidd	9/1/16-8/31/21	$1,620,000
States					
T32ES011564	UofL Environmental Health Sciences Training Program	Mentor	Arteel	7/01/16-6/30/21	$2,311,776
T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	4/01/16-3/31/21	$200,120
Wise, J					
NIEHS/1 R01 ES025306	Mechanisms of Particulate Hexavalent Chromium-Induced Centrosome Abnormalities in Human Lung Cells	PI	Wise	4/01/16-3/31/21	$1,811,096
Department of Defense/CDMRP	Identifying and Ameliorating the Genotoxic and Carcinogenic Interactions of Depleted Uranium, Cobalt, Nickel and Tungsten	PI	Wise	7/1/2016-6/30/19	$1,809,768
NIEHS/1 R01 ES026577	Maternal Heavy Metal Exposure, Fetal Development and Birth Size	Consultant	Zheng	4/1/16-3/31/20	$2,863,203
NIEHS/T32 ES011564 (A1)	UofL Environmental Health Sciences Training Program	Mentor	Arteel	4/1/16-3/31/21	$2,183,597
R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	9/1/16-8/31/21	$1,500,000
NIH	Shared Use Transmission Electron Microscope	Participant	Bickford	2/1/16-1/31/19	$518,950
Wise, S					

DOD/ CDMRP	Identifying and Ameliorating the Genotoxic and Carcinogenic Interactions of Depleted Uranium, Cobalt, Nickel and Tungsten	Co-I	J Wise	7/1/16-6/30/19	$1,809,768
NIH/NIEHS ES025306	Mechanisms of Particulate Hexavalent Chromium-Induced Centrosome Abnormalities in Human Lung Cells	Collaborator	J Wise	4/1/16 - 3/31/21	$1,811,096

INVITED SCIENTIFIC PRESENTATIONS
Faculty with Primary Appointments

Antimisiaris:

1. MTM CTP (Medication Therapy Management Certification Training Program)- APhA Annual Meeting & Exosition March 2015, Amerisource Bergen Las Vegas Aug 2015, Joint Armed Forces Health Care Conference National Harbor Nov 2015.
2. AMDA (Am. Medical Directors Asociation,2015 annual conference): Dementia, Dysphagia and Avoiding Disaster: Considerations of Altered Medication Administration. March 2015
3. ASCP 2015 (Am. Soc. Consultant Pharmacists, annual conference): Renal Dose Adjustments: the Checklist Effect. Oct 2015.
4. ASCP 2015 (annual conference): Precepting 101. Oct 2015

Arteel:

1. Research seminar, 02/15 "Transitional ECM remodeling in hepatic (dys) function." GI/Liver research group and the Department of Pharmacology and Toxicology, University of Louisville, Louisville, KY.
2. Research seminar, 02/15 "Transitional ECM remodeling in hepatic (dys)function." Undergraduate Biology Honors program, University of Louisville, Louisville, KY.
3. Research seminar, 03/15 "Transitional ECM remodeling in hepatic (dys)function." Cardiovascular Innovation Institute, University of Louisville, Louisville, KY.
4. Seminar, 06/15, "How to write a discussion." NIH R25 Research Program, University of Louisville, Louisville, KY.
5. Research seminar, 05/15 "Transitional ECM remodeling in alcohol-induced organ (dys)function" National Institute on Alcoholism and Alcohol Abuse, Washington DC.
6. Symposium, 05/15, "Writing abstracts well" Digestive Disease Week annual meeting, Washington, DC.
7. Webinar, 12/15, "Transitional ECM changes in hepatic disease beyond collagen and before fibrosis" Steatosis AOP Task Group meeting, USEPA.
8. Organizer, 1/15, research seminar by Anwar Anwar Mohamed, PhD, CIHR and AIHS

Post- doctoral Fellow, Li Ka Shing Applied Virology Institute, University of Alberta, Edmonton AB. Dept of Pharmacology and Toxicology, Louisville, KY.

9. Moderator, 05/15, "Clinical and Experimental Advances in Alcoholic Liver Disease," Digestive Disease Week annual meeting, Washington, DC.
10. Moderator, 11/15, Hyman J. Zimmerman Hepatotoxicity State-of-the-Art Lecture, American Association for the Study of Liver Diseases, Annual Meeting, San Francisco, CA.
11. Moderator, 11/15, Parallel session, "Alcohol-induced liver disease: clinical and experimental." American Association for the Study of Liver Diseases, Annual Meeting, San Francisco, CA.

Beier-Arteel:

1. Research symposium, 10/28/15. Vinyl Chloride Induced Liver Injury. Research!Louisville, Louisville, KY.
2. Poster, 03/23/15. Exposure to Vinyl Chloride Metabolites Exacerbates Liver Injury Caused by High Fat Diet in Mice. Society Of Toxicology Annual Meeting, Phoenix, AZ.
3. Research symposium, 05/17/15. "Mechanistic Insight Into Vinyl Chloride Metabolite-Induced Liver Injury Caused by High Fat Diet in Mice." Digestive Disease Week Annual Meeting, Washington, DC.

Chen:

1. Nrf2-mediated antioxidant response: Implications for the prevention of Fetal Alcohol Spectrum Disorders. 15th International Society of Antioxidants Conference on Oxidative Stress Reduction, Redox Homeostasis and Antioxidants. Institut Pasteur, Paris, France. June 23, 2015
2. Epigenetic mechanisms underlying ethanol-induced apoptosis and birth defects. Hainan University, HaiKou, Hainan, China, September 22, 2015
3. Wang KL, Chen XP, Zheng L, Liu J, Chen S-Y. Embryonic exposure to ethanol increases the susceptibility of larval zebrafish to chemically induced seizures. 38th Annual Scientific Meeting of the Research Society on Alcoholism. San Antonio, Texas, June 20-24, 2015.
4. Chen XP, Yuan FQ, Liu J, Chen S-Y. Sulforaphane protects against ethanol-induced apoptosis in neural crest cells by epigenetic modulation of Bcl2 gene expression. 38th annual Scientific Meeting of the Research Society on Alcoholism. San Antonio, Texas, June 20-24, 2015.
5. Yuan FQ, Liu J, Chen S-Y. Up-regulation of Siah1 by ethanol triggers apoptosis in neural crest cells through p38 MAPK-mediated activation of p53 signaling pathway. 38th Annual Scientific Meeting of the Research Society on Alcoholism. San Antonio, Texas, June 20-24, 2015.
6. Yuan FQ, Liu J, Chen S-Y. Modulation of histone acetylation at the Bcl2 promoter by sulforaphane reduced ethanol-induced apoptosis in neural crest cells. 74th Annual Meeting of the Society for Developmental Biology. Snowbird, UT, July 9-13, 2015
7. Nrf2-mediated antioxidant response: Implications for the prevention of Fetal Alcohol Spectrum Disorders. 15th International Society of Antioxidants Conference on Oxidative Stress Reduction, Redox Homeostasis and Antioxidants. Institut Pasteur, Paris, France. June 23, 2015

8. Epigenetic mechanisms underlying ethanol-induced apoptosis and birth defects. Hainan University, HaiKou, Hainan, China, September 22, 201
9. NIH, Center for Scientific Review. The Neurotoxicology and Alcohol (NAL) study section. Ad Hoc Member. 2015
10. Grant Review panel, Italian Ministry of Health, Italy, 2015
11. Grant Review panel, Beijing Natural Science Foundation, China, 2015

Clark:

1. "Ras oncogenes and RASSF tumor suppressors", Dept. Pharmacology University of Louisville.
2. "Striking at the heart of cancer", Cancer Colloquia, Brown Cancer Center.
3. Speaker: RAS Initiative Symposium, December 15-16, 2015 Frederick National Laboratory for Cancer Research: "A pan-RalGEF inhibitor to suppress Ras driven cancer and metastasis"

Fuqua:

1. "Mucosal Delivery of L2-based HPV Vaccines."Plant Based Vaccines and Biologics. Switzerland, 2015

Hein:

1. "Importance of Individual Susceptibility in Human Risk Assessments". Plenary lecture, International Toxicology Conference, Regional Center for Food and Feed, Agricultural Research Center, Cairo, Egypt, May 2015.
2. PhD in Pharmacology & Toxicology Partnership between University of Louisville and Wenzhou Medical University. Second Affiliated Hospital of Wenzhou Medical University, Wenzhou, China, June 2015.

Hood:

1. Hood*, JL. Tuning Exosomes to Modulate Macrophage Inflammation: Therapeutic Strategy for Melanoma, 4th AACR International Conference on Frontiers in Basic Cancer Research, Philadelphia, PA, October 27, 2015

Kang:

1. Nov 18, 2015, Keynote Speech, "Stem Cells and 3D Bio-printing in Regenerative Medicine" at BIT's 8rd World Congress of Regenerative Medicine and Stem Cells 2015. Shanghai, Shanghai, China.
2. Oct 12, 2015, Plenary Lecture, "3D Printing in Translational Medicine" at the 3rd International Experimental Biology and Medicine Conference, Chengdu, China
3. Aug 28, 2015, Plenary Lecture, "Tissue injury signaling and cell therapy for ischemic heart disease" at the 6th International Conference of Frontiers in Cardiovascular Sciences, Dalian, China.
4. May 30, 2015, Keynote Speech, "Cell therapy for ischemic heart disease" at the International Conference for Biological Science, Ufa, Russia.
5. May 20, 2015, Keynote Speech, "3D Bio-printing and Revolution in Medicine" at the 2015 World Congress of 3D Printing in Chengdu, China.

Lukashevich:

1. American Society for Microbiology, Biodefense and Emerging Diseases Research Meeting, February 9-11, 2015, Washington, DC
2. 7th Annual NBL-RBL Networking Meeting, UTMB, Galveston, TX, April 12-14, 2015
3. 9th Vaccine & ISV Congress, Seoul, South Korea, 18-20 October, 2015

Matoba:

1. "Therapeutic effects of a cholera toxin vaccine antigen produced in Nicotiana benthamiana plants" Graduate School of Agricultural and Life Sciences, University of Tokyo, Tokyo, Japan, July 6, 2015.
2. "Molecular farming of protein pharmaceuticals" Tokyo University of Agriculture, Tokyo, Japan, July 10, 2015.
3. "Molecular Farming of Protein Pharmaceuticals" Kanazawa University Medical School, Kanazawa, Japan, July 15, 2015.
4. "Engineering of a lectibody targeting viral- and tumor-associated high-mannose glycans" Department of Chemical Engineering and Materials Science, University of California Davis, November 12, 2015.
5. "Development of Protein Pharmaceuticals Made in Plants" Center for Predictive Medicine, University of Louisville, November 19, 2015.

Myers:

1. Methods of Analysis in HPLC Chromatography, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, April, 2015
2. Methods of Analysis in Gas Chromatography and Mass Spectrometry, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, April, 2015
3. Analysis of PAH and Aflatoxins by HPLC and GC/MS, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, April, 2015
4. Analysis of Pesticides by HPLC and GC/MS, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, April, 2015
5. Biomarkers of Environmental Chemicals, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, April, 2015
6. Molecular Markers in Toxicology and Epidemiology: Development, Validation and Application of Biomarkers, Faculty of Agriculture, Faculty of Medicine, Cairo University, Cairo, Egypt, May, 2015
7. Molecular Markers in Toxicology and Epidemiology: Development, Validation and Application of Biomarkers, Faculty of Medicine, Cairo University, Cairo, Egypt, May, 2015
8. The University of Louisville, Faculty of Medicine, Cairo University, Cairo, Egypt, May, 2015
9. Molecular Biomarkers in Toxicology, University of Copenhagen, Faculty of Environmental Sciences, Copenhagen, Denmark, November, 2015
10. Analytical Tools for Assessing PAH Exposures, University of Copenhagen, Faculty of Environmental Sciences, Copenhagen, Denmark, November, 2015
11. HPLC Method Development for Assessing Exposures to Polycyclic Aromatic Hydrocarbons, Faculty of Environmental Sciences, Copenhagen, Denmark, November, 2015
12. Keynote Address: Biomarkers in Environmental Toxicology, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Cairo, Egypt, November, 2015

13. Polycyclic Aromatic Hydrocarbons: Analytical Assessments, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Hurghada, Egypt, November, 2015
14. HPLC Methodologies in Detection of Environmental Contaminants, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Hurghada, Egypt, November, 2015
15. Effective Techniques in Manuscript Writing, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Hurghada, Egypt, November, 2015
16. Molecular Markers in Toxicology and Environmental Health, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Hurghada, Egypt, November, 2015
17. Opportunities for Graduate Education at the University of Louisville, 2nd International Conference on Toxicology and Environmental Health, Cairo University, Hurghada, Egypt, November, 2015
18. Introduction to Neuropharmacology, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
19. Adrenergic Agonists and Antagonists, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
20. Gastrointestinal Pharmacology, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
21. HPLC Methodologies in Detection of Environmental Contaminants, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
22. Molecular Markers in Toxicology and Environmental Health, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
23. The University of Louisville, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
24. The Changing Face of Medical Education, Faculty of Medicine, AinShams University, Cairo, Egypt, November, 2015
25. Opportunities for Graduate Education at the University of Louisville, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
26. Introduction to Neuropharmacology, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
27. Adrenergic Agonists and Antagonists, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
28. Gastrointestinal Pharmacology, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
29. Molecular Markers in Toxicology and Environmental Health, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
30. Problem Based Learning in Medical Education, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015
31. Medical Education in the 21st Century, Faculty of Medicine, 6th of October University, 6th of October, Egypt, November, 2015

Palmer:

1. Invited Seminar in the Center for Predictive Medicine, University of Louisville.

Targeting the Glycan Shield: A Broad-Spectrum Antiviral Strategy. December 15th, 2015
2. Invited Webinar Presentation: PREVENT Griffithsin Based Rectal Microbicides. IRMA International Rectal Microbicides Advocates 2015 Update on the Rectal Microbicides Pipeline: New Agents, New Formulations. April 28th, 2015.
3. Invited talk to the American Chemical Society Kentucky-Indiana border local section. Plant Made Pharmaceuticals. University of Southern Indiana, Evansville. January 30th 2015.
4. Invited Oral Presentation at the Microbicides Trial Network Mucosal Assays Meeting, Washington DC. Pharmacokinetics assay development in the PREVENT U19 *Griffithsin-based rectal microbicides program.* August 25th, 2015.
5. Invited participation in the Microbicide Trial Networks Mucosal Assays meeting and forum discussions. August 2015.
6. Invited by the international rectal microbicides advocacy group to present a webinar on updates in the microbicide product pipeline. April 2015.

Siskind:

1. Invited Speaker, 2016 Gordon Research Conference on Glycolipid & Sphingolipid Biology, 03/06/2016 - 03/11/2016,
2. Renaissance Tuscany Il Ciocco Resort, Lucca (Barga), Italy
3. Marimuthu S, Saunders J, Hernandez-Corbacho MJ, Schepp Berglind J, Mather A, Snider AJ, Beeson C, Schnellmann R, and Siskind LJ (2015) The role of glycosphingolipids in renal aging. American Federation of Aging Research Grantees Conference, Santa Barbara, CA, June 1-3 2015.
4. Department of Pharmacology and Toxicology, University of Louisville, Seminar Series, Title: Mechanisms of kidney injury by cisplatin. October 8, 2015, 12 pm
5. Invited Lecture at the Molecular Endocrine Grand Rounds, University of Louisville Department of Medicine, Division of Endocrinology, Metabolism and Diabetes. Title: The role of bioactive lipids in type II diabetic nephropathy. April 22nd 2015, 4pm
6. Invited Lecture at the University of Louisville Geriatric Fellowship Didactic Conference. Title: Role of bioactive lipids in renal aging. April 21st 2015, 1pm
7. Siskind LJ (2015) Preventing Kidney Injury While Ensuring Chemotherapeutic Efficacy: Treating the Whole Patient. Brown Cancer Center Colloquia. April 8, 2015.
8. Invited Speaker, 2016 Gordon Research Conference on Glycolipid & Sphingolipid Biology, 03/06/2016 - 03/11/2016, Renaissance Tuscany Il Ciocco Resort, Lucca (Barga), Italy
9. Department of Pharmacology and Toxicology, University of Louisville, Seminar Series, Title: Mechanisms of kidney injury by cisplatin. October 8, 2015, 12 pm
10. Marimuthu S, Saunders J, Hernandez-Corbacho MJ, Schepp Berglind J, Mather A, Snider AJ, Beeson C, Schnellmann R, and Siskind LJ (2015) The role of glycosphingolipids in renal aging. American Federation of Aging Research Grantees Conference, Santa Barbara, CA, June 1-3 2015.
11. Invited Lecture at the Molecular Endocrine Grand Rounds, University of Louisville Department of Medicine, Division of Endocrinology, Metabolism and Diabetes. Title: The role of bioactive lipids in type II diabetic nephropathy. April 22nd 2015, 4pm
12. Invited Lecture at the University of Louisville Geriatric Fellowship Didactic Conference. Title: Role of bioactive lipids in renal aging. April 21st 2015, 1pm

13. Siskind LJ (2015) Preventing Kidney Injury While Ensuring Chemotherapeutic Efficacy: Treating the Whole Patient. Brown Cancer Center Colloquia. April 8, 2015.

Wise, J.:

1. Research seminar, 11/2015 "Double Trouble in Chemical Carcinogenesis: How Hexavalent Chromium Inhibits DNA Repair after Causing DNA Damage", Presented at the University of California, Riverside: Riverside, California.
2. Research seminar, 09/2015 "One Environmental Health: Insights into the Potential Long-Term Health Impacts of the Gulf of Mexico Oil Crisis Learned from Whale Cells and Tissues", Presented at the annual meeting of the Environmental Mutagenesis and Genomics Society: New Orleans, Louisiana.

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

Antimisiaris:

- Provisional Patent Pending: Virtual Dementia Manager Feb 2015 (OTT RDF on file 2014) no start up. Licensing agreement pending with OTT- contact: Matthew Hawthorne.

Clark:

- A United States provisional patent application, ser. no. 62/196,336, entitled, "Ras Inhibitors, RALGDS Inhibitors, Related Compositions, and Their Uses to Treat Disease," has been filed.

Fuqua:

- Oxidation Resistant Variants of the HIV Microbicide, Griffithsin – ULRF 15042 – Provisional Filed February 2015 (Prior to Faculty Position)
- Library of Griffithsin Research Tools – Provisional Filed October 2015

Gupta:

- 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.

Hood:

- Invention disclosure: U of L Office of Technology Transfer Invention: "Exosome based Immunotherapy for Melanoma" Inventor(s): Joshua L. Hood

Lukashevich

- Pushko P, Tretyakova I, **Lukashevich I** (2015). Infectious DNA Vaccines Against Chikungunya Virus. United States Patent No: US 9,101,572

Matoba:

- Patent Application: U.S. Provisional Patent Application Serial No. 62/186,151 Title: Compositions and methods for treating cancer and promoting wound healing
- Research Disclosure: #16014: Avaren-Fc lectibody for broad spectrum cancer immunotherapy and diagnosis

Palmer:

- Inventors: **Palmer KE,** Fuqua J, Matoba N. International Patent Application No. PCT/US14/46893. COMPOSITIONS FOR MUCUSAL DELIVERY, USEFUL FOR TREATING PAPILLOMAVIRUS INFECTONS. ULRF Ref. No. 14006
- Inventors: Steinbach J, **Palmer KE.** United States Patent Application 62/174,346 VIRUS TRAP MICROBICIDE AND METHODS FOR TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS. ULRF Ref. No. 14072
- Inventors: **Palmer KE**, O'Keefe BR, Fuqua J, Rohan LC. United States Patent Application 62/114,217 GRIFFITHSIN MUTANTS. ULRF Ref. No. 15042

Siskind:

- U.S. Application Number: 62/234,427. Filing Date: 09/29/2015. Applicant: University of Louisville research Foundation, Inc., Louisville, KY. Title of Invention: Methods for Treating Chemotherapy-Induced Kidney Injury. Inventors: Siskind, Beverly, Schnellmann, Dupre, Doll

DEPARTMENTAL COURSES

- Medical Pharmacology instruction to second year medical students. Dr. Steve Myers served as departmental liaison.

- Pharmacology and Dental Therapeutics course to dental students. Dr. David Hein 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 (Drs. Prough and Gavin Arteel)
PHTX 625 – Scientific Writing (Dr. Gavin Arteel)
PHTX 655 – Neuropharmacology (Dr. Song)
PHTX 656 – Cardiovascular and Renal Pharmacology (Dr. Kang)
PHTX 657 – Endocrine and Metabolic Pharmacology (Dr. Gavin 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 – Introduction to Human Risk Assessment (Dr. Lipscomb)

STANDING COMMITTEES

Graduate Student Affairs and Curriculum Committee

Dr. Chris States (Chair)
Dr. Brian Ceresa (ex officio)
Dr. Gavin Arteel (2015)
Dr. Leah Siskind (2016)
Dr. Geoff Clark (2017)
Student rep: Marcus Stepp
Student rep: Samantha Carlisle

Graduate Student Admissions and Recruitment Committee

Dr. Brian Ceresa (Chair)
Dr. Chris States (ex officio)
Dr. Ramesh Gupta (2015)
Dr. Steve Myers (2016)
Dr. Shao-yu Chen (2017)

SIBUP/Grievance Committee

Nobuyuki Matoba (Chair)
Dr. Joe Song (2015)
Dr. Michael Merchant (2016)
Dr. Ramesh Gupta (2017)

Teaching Evaluation Committee

Dr. Steve Myers (Chair)
Dr. Juliane Arteel (2015)

Dr. Gavin Arteel (2016)
Dr. Joshua Hood (2017)

Seminar Committee

Dr. Geoff Clark (Chair)
Dr. Gavin Arteel (2015)
Dr. Levi Beverly (2016)
Dr. Igor Lukashevich (2017)

Events Committee

Dr. La Creis Kidd (Chair)
Hannah Bitter
Blair Cade
Florence Su
Dr. Juliane Arteel (2015)
Dr. Swati Joshi-Barve (2016)
Student rep: Marcus Stepp

Wenzhou Medical University and Jilin University Task Force

Dr. David W. Hein (Chair)
Dr. Lu Cai
Dr. Wenke Feng
Dr. James Kang
Dr. Joe Song
Dr. Yi Tan

DEPARTMENTAL EVENTS

- New Faculty Welcome Reception was held February 12 in the Knoefel Conference Room
- New faculty and student welcome picnic was held August 14 at Captain's Quarters
- Thanksgiving potluck celebration was held November 20 in the CTR
- Department holiday party was held December 12 at Garden Court, Presbyterian Seminary

2015 UNIVERSITY OF LOUISVILLE CANCER EDUCATION PROGRAM CLASS

Marisa Bohn
University of Cincinnati undergraduate
Faculty Mentor: Levi Beverly, PhD
Research Project: Optimizing IHC for cisplatin treated tissue

Logan Bond
Auburn University graduate
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: Intra-operative navigation of a three-dimensional needle localization system for precision of irreversible electroporation needles in locally advanced pancreatic cancer

Andrew Bratton
University of Louisville undergraduate
Faculty Mentor: Jason Chesney, MD, PhD
Research Project: Small molecule inhibition of choline kinase-α decreases proliferation of non-small cell lung cancer

Phillip Burkhardt
Clemson University undergraduate
Faculty Mentor: John Eaton, PhD
Research Project: Radioprotective effects of ferritin

Aneesha Carter
University of Louisville undergraduate
Faculty Mentor: Jesse Roman, MD
Research Project: The interplay between aging and lung inflammation / Remodeling in lung cancer progression

Maggie Chang
University of Louisville undergraduate
Faculty Mentor: David Hein, PhD
Research Project: Effect of arylamine N-acetyltransferase 1 knockout by CRISPR/Cas 9 on doubling time in MDA-MB-231, MCF-7, & ZR-75-1 breast cancer cell line

Jenna Chong
Cornell University undergraduate
Faculty Mentor: Sham Kakar, PhD
Research Project: Withaferin A in combination with cisplatin suppresses mucin family proteins in epithelial ovarian cancer cells

Sarah Duff
University of Louisville medical student
Faculty Mentor: Brian Clem, PhD
Research Project: Novel PSAT1 small molecule inhibitors decrease breast cancer cell proliferation and synergize with anti-estrogen therapies in endocrine resistant cells

Rakesh Gadde
University of Louisville dental student
Faculty Mentor: Richard Lamont, PhD
Research Project: Porphyromonas gingivalis induction of EMT transcriptional factors in gingival epithelial cells

Thomas Gordon III
University of Louisville undergraduate
Faculty Mentor: David Samuelson, PhD
Research Project: A CRISPR/Cas9 system to edit rat Mcs1b candidate causal variants

Hailey Griffey
University of Louisville undergraduate
Faculty Mentor: Brian Ceresa, PhD
Research Project: The effects of ligand treatment on the dimerization of EGFR-GFP and ErbB3-dsRED in Chinese hamster ovary cells

Justin Heidel
University of Louisville undergraduate
Faculty Mentor: Jill Steinbach, PhD
Research Project: Design and synthesis of polymer blend electrospun fibers for sustained release of siRNA to the female reproductive tract

Erica Holland
University of Louisville undergraduate
Faculty Mentor: Rebecca Redman, MD
Research Project: Perceived survivorship needs in patients with human papillomavirus (HPV)-positive and (HPV)-negative head and neck cancer

Brenna Kaelin
University of Louisville undergraduate
Faculty Mentor: Juliane Beier-Arteel, PhD
Research Project: Mechanistic insight into vinyl chloride-induced liver injury: Role of dietary fatty acids

Nicholas Kemper
University of Louisville undergraduate
Faculty Mentor: Kelly McMasters, MD, PhD
Research Project: I3C decreases cyclin E expression and represses cancer cell growth

Alexandra Kiefer
University of Louisville medical student
Faculty Mentor: Leah Siskind, PhD
Research Project: Role of sphingosine kinase 1 and 2 in MYC-induced leukemogenesis

Alyssa Laun
University of Louisville graduate
Faculty Mentor: Joe Song, PhD
Research Project: Cannabigerol modulates the efficacy of anandamide on the CB2 cannabinoid receptor

Christina Leonhardt-Albert
University of Louisville graduate
Faculty Mentor: Sandra Sephton, PhD
Research Project: Circadian rhythms and diurnal profiles of salivary alpha amylase in women with breast cancer

Maya McFrazier
University of Louisville undergraduate
Faculty Mentor: David Scott, PhD
Research Project: Nucleoside diphosphate kinase-dependent suppression of apoptosis in esophageal cancer cells by the oral pathogen Porphyromonas gingivalis

Matthew Neal
University of Louisville medical student
Faculty Mentor: Lacey McNally, PhD
Research Project: Small dual surfactant mesoporous silica nanoparticles demonstrate acidic pH specificity

Bailey Nelson
University of Louisville medical student
Faculty Mentor: Susan Galandiak, MD
Research Project: Genetic polymorphisms in 5-FU related enzymes predict complete pathologic response in rectal cancer

Thomas Noel
University of Louisville medical student
Faculty Mentor: Joshua Hood, MD, PhD
Research Project: Development of immunomodulatory exosomal nanocarriers to treat melanoma

Rachel O'Connor
University of Louisville undergraduate
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: A multi-organ study using microwave ablation: Comparison of Solero system to the Sulis VpMTA and the NeuWave Certus 140 system

Chukwuka Okafor
University of Louisville dental student
Faculty Mentor: Doug Darling, PhD
Research Project: Regulation of oncogenic ZEB1 gene expression by cigarette smoke components

Abbigail Pace
Western Kentucky University undergraduate
Faculty Mentor: Liz Cash, PhD
Research Project: Distress, anxiety, depressive symptoms and malnutrition biomarkers on head and neck cancer progression and overall survival

Thomas Packer, Jr.
University of Louisville undergraduate
Faculty Mentor: LaCreis Kidd, PhD
Research Project: Impact of quercetin on miR-21, cell proliferation and migration of metastatic and non-metastatic prostate cancer cell lines

Rigoberto Perez-Hernandez
Cornell University undergraduate
Faculty Mentor: Jorge Gomez-Gutierrez, PhD
Research Project: Temozolomide enhances breast cancer virotherapy regardless of estrogen receptor status

Henry Roberts
University of Louisville medical student
Faculty Mentor: Susan Galandiak, MD
Research Project: Can cancer cell lines clarify molecular mechanisms of hereditary non-polyposis colorectal cancer?

Cody Sheffield
Western Kentucky University graduate
Faculty Mentor: Levi Beverly, PhD
Research Project: Determining whether SUMO interacts with ubiquilin

John Simmons
University of Louisville undergraduate
Faculty Mentor: Richard C.G. Martin, MD, PhD
Research Project: Wide versus narrow margins after partial hepatectomy for hepatocellular carcinoma

Lee Sims
University of Louisville undergraduate
Faculty Mentor: Jill Steinbach, PhD
Research Project: Effect of hybrid surface-modified nanoparticles on knockdown of HPV 18 E6 in vitro

Alexander Sobolev
Washington University undergraduate
Faculty Mentor: Lacey McNally, PhD
Research Project: pH specific dual targeting of colloidal mesoporous silica nanoparticles for pancreatic adenocarcinomas

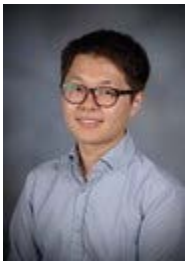
Vanessa States
University of Louisville medical student
Faculty Mentor: Susan Galandiak, MD
Research Project: Development of a plasma miRNA panel in detecting response to treatment of colorectal adenoma & colorectal cancer

Desmond Stewart
University of Louisville medical student
Faculty Mentor: Geoff Clark, PhD
Research Project: The role of DAB2IP in RASSF-mediated tumor suppression

Nichole Stivers
University of Louisville medical student
Faculty Mentor: Chi Li, PhD
Research Project: Paraoxonase-2 mediates a homoserine lactone-induced apoptosis in breast cancer cells

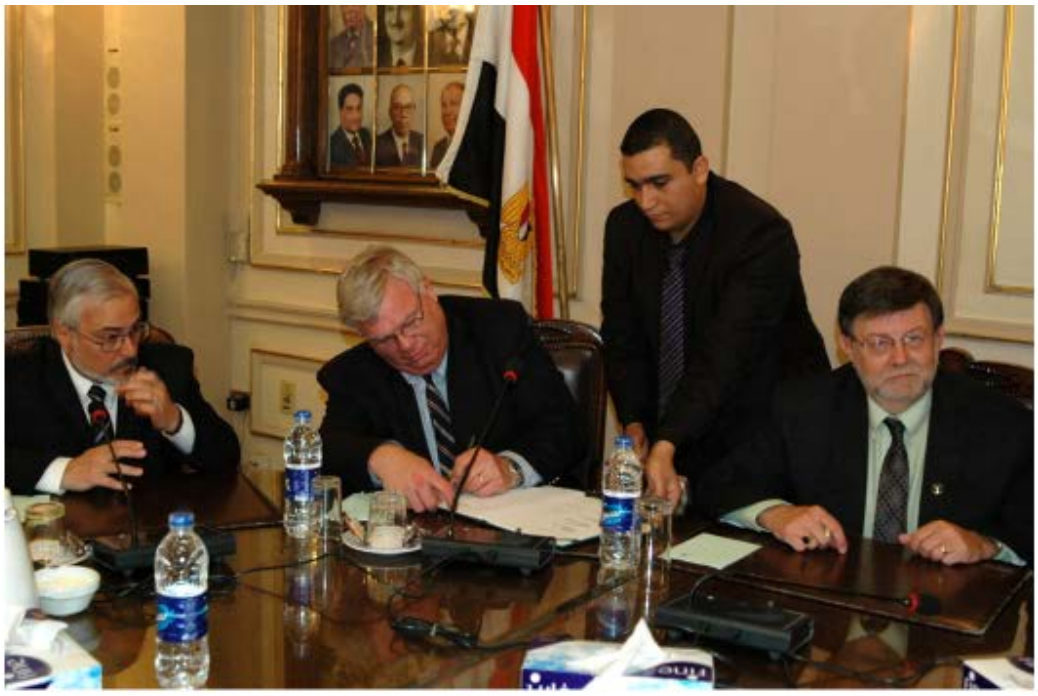
Karen Udoh
University of Louisville undergraduate
Faculty Mentor: J. Christopher States, PhD
Research Project: Inhibiting the anaphase-promoting complex/cyclosome: An innovative approach for cancer chemotherapy

Jingjing Xiao
Yale University undergraduate
Faculty Mentor: Kelly McMasters, MD, PhD
Research Project: Targeting ATP-binding cassette transporter (ABCB5) in BRAF inhibitor resistant melanoma

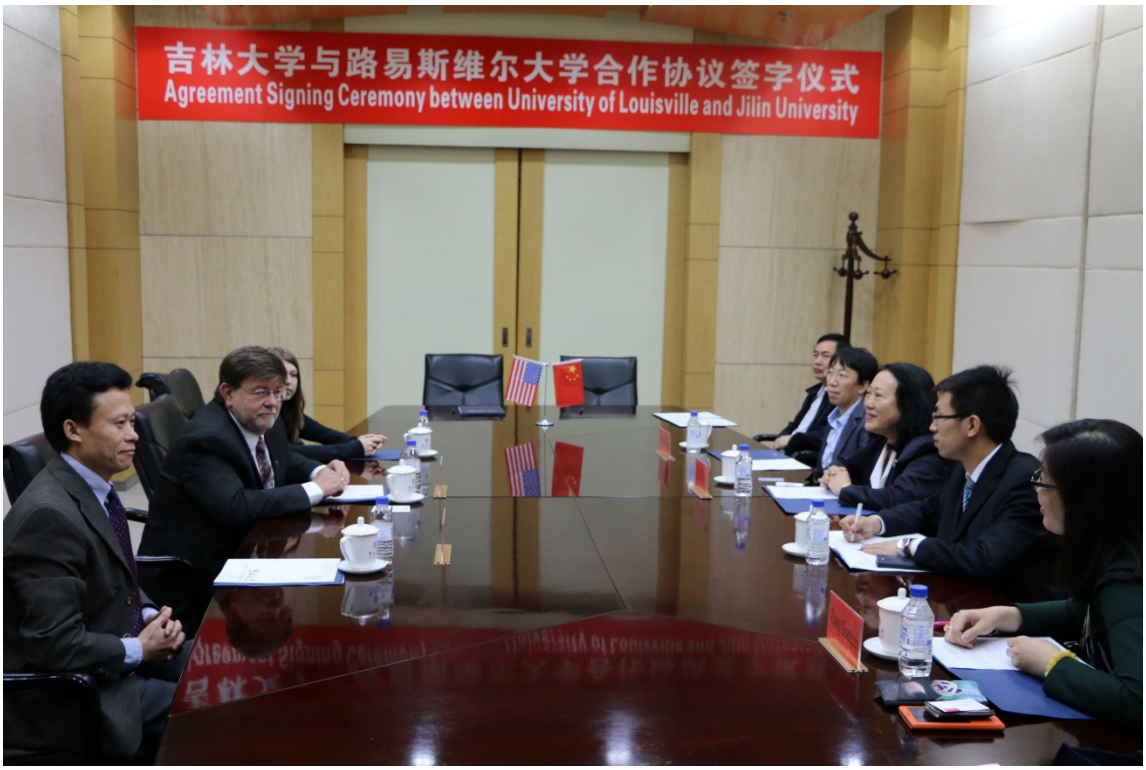


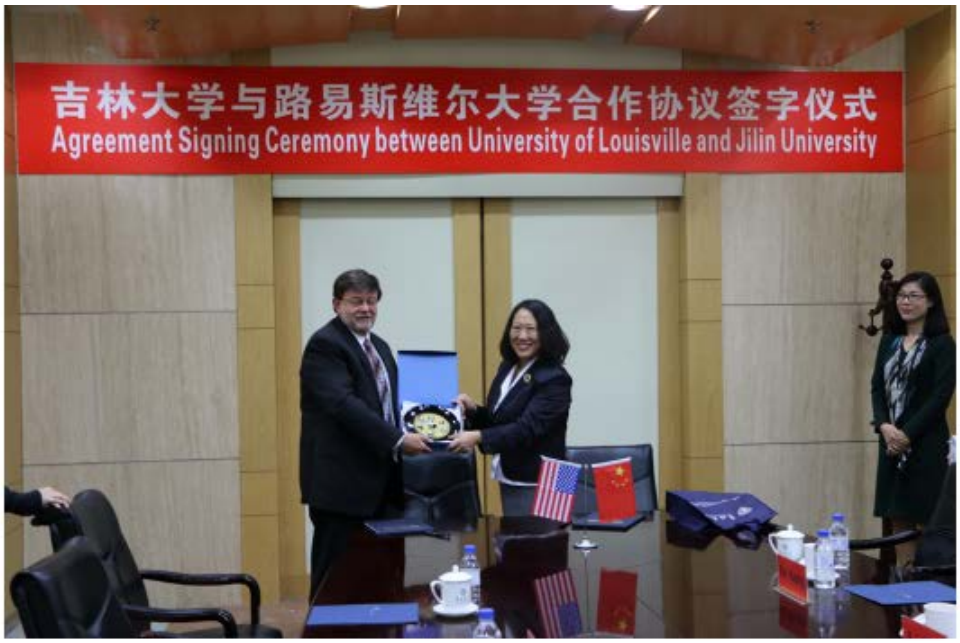
Heegook Yeo
University of Louisville undergraduate
Faculty Mentor: Juliane Beier-Arteel, PhD
Research Project: Exploring energy metabolism changes in vinyl chloride induced non-alcoholic fatty liver disease (NAFLD)

PhD Partnership Signing Ceremony with Cairo University
May 5, 2015



PhD Partnership Signing Ceremony with Jilin University
June 2, 2015




吉林大学与路易斯维尔大学合作协议签字仪式
Agreement Signing Ceremony between University of Louisville and Jilin University


吉林大学与路易斯维尔大学合作协议签字仪式
Agreement Signing Ceremony between University of Louisville and Jilin University

Memorandum of Understanding
In Research, Education and
Training Programs
Between the University of Louisville Department of Pharmacology and Toxicology (USA) and Cairo University, Egypt

The Department of Pharmacology and Toxicology of the University of Louisville and Cairo University Faculty of Veterinary Medicine and Faculty of Medicine intend to enhance relations between the two universities by developing an academic and cultural exchange in teaching, research and other activities. This agreement describes a MS and PhD partnership in which students can either enter and complete an MS program at Cairo University and then transfer to the University of Louisville to complete the requirements for the PhD in pharmacology and toxicology or apply directly to the MS program in Louisville. The program will be administered and coordinated by Dr. Osama El-Tawil (Cairo University) and Dr. Steven Myers (University of Louisville).

ARTICLE I

Students from Cairo University applying directly into the MS program at the University of Louisville will be required to successfully complete all requirements for the MS degree, including coursework as applicable at the University of Louisville for the MS degree. Courses taken at Cairo University will be evaluated on a case-by-case basis with each student for substitution or waiving of those required courses necessary in obtaining a MS degree at the University of Louisville. Initial evaluations will be conducted by the program coordinators and their recommendations forwarded to the graduate education committee at the University of Louisville for final decision.

ARTICLE II

Students from Cairo University applying to the PhD program at the University of Louisville will be required to have an existing MS degree from the Cairo University or the University of Louisville. Upon completion of the MS in pharmacology, toxicology or forensic medicine to be awarded at Cairo University, top students will be recommended to apply for transfer to the PhD program in pharmacology and toxicology at the University of Louisville. These students will be reviewed for eligibility and acceptance into the graduate program in Pharmacology and Toxicology at the University of Louisville by the graduate education committee and by the program coordinators. Upon transfer to the University of Louisville these students will be required to complete presentation/communication courses as well as the remaining required coursework for the PhD in pharmacology and toxicology. These students also will be required to pass applicable qualifying exams, including preparation, presentation, submission, and defense of their PhD dissertation proposal. Upon successful defense of their PhD proposal, the students will engage in research towards the preparation, presentation, and defense of their PhD dissertation. Following successful completion of all required courses at the University of Louisville and successful defense of their PhD dissertation, the student will be awarded the PhD in Pharmacology and Toxicology from the University of Louisville.

ARTICLE III

The projected number of students successfully entering the program at the University of Louisville will depend upon the quality of the students interested and the capacity of University of Louisville faculty members to incorporate these students into their laboratory research programs.

ARTICLE IV

Requirements for transfer of students from Cairo University into the PhD program in Pharmacology and Toxicology at the University of Louisville include:

1. Letter of application from the student acknowledging that the student is responsible for all required tuition and fees including health insurance to be paid to the University of Louisville.
2. Students from Cairo University will have the opportunity to apply for Scholarships/Fellowships from University of Louisville or other sources (private/governmental) to assist in their educational expenses.
3. Top students from Cairo University in either MS or PhD programs gaining acceptance into the program will be eligible for full tuition waiver for all academic fees and tuition, and health insurance encountered in their program of study. Top students from Cairo University entering the program will be assessed for this eligibility by Dr. Osama El-Tawil (Cairo University) and Dr. Steven Myers (University of Louisville) and their recommendations as program coordinators will be forwarded to the Departmental Graduate Admissions committee.
4. For entering into the MS or PhD program at the University of Louisville students must provide an official transcript detailing with coursework and grades completed at Cairo University.
5. For entering into the PhD program at the University of Louisville students must provide an Electronic copy of MS thesis awarded at Cairo University.
6. A minimum of two recommendation letters that include assessment of applicant's competency in written and spoken English as well as student's research skills and applicability for the MS or PhD program. GRE and TOEFL scores are encouraged but can be waived based on interviews with program coordinators or graduate admissions committee.
7. Students will be subject to compliance with entry and visa requirements of Egypt and the United States with assistance provided by the International Center at the University of Louisville.

ARTICLE V

The present Memorandum of Understanding shall be effective for a period of five years from the date it is signed by both parties. It may be renewed unless written notice is given one year before the termination by one of the two parties.

ARTICLE VI

Courses taken at Cairo University in pharmacology, toxicology or forensic medicine can substitute for courses at the University of Louisville, in either the MS or PhD programs. Evaluation of these courses will be conducted on a case-by-case basis by the program coordinators (Dr. Osama El-Tawil (Cairo University) and Dr. Steven Myers (University of Louisville)) as well as the graduate admissions committee at the University of Louisville. Students transferring into the PhD program in pharmacology and toxicology at the University of Louisville will be expected to have completed the following course work at the Cairo University. Credit hours of each specific course are dependent on the student's major at Cairo University.

Course	*Credit Hours*	*Description*
General toxicology	3	**Drugs used for treatment of genital diseases and Introduction, Dose-response relationship, Factors affecting toxic action, Absorption, distribution, excretion, Metabolism, Bioactivation, Mechanistic toxicology, Diagnosis of poisoning, Treatment of poisoning, Antidotes**
Environmental Toxicology	**3**	**Routes and kinetics of pollutant uptake, Factors affecting pollutant toxicity , Toxic action of air pollutants, Toxic action of water and soil pollutants, Metals and other inorganic chemicals. Organic pollutants (I), pesticides, Organic pollutants (II), hydrocarbons, Nitrate + non-protein nitrogen, Radioactive pollution**
Clinical or applied Toxicology	**3**	**Diagnosis and treatment of poisoning, corrosives, organic acids, Metals (1), Metals (2), Poisonous plants, Animal poisons, Pesticides, hydrocarbons, Nitrate + non-protein nitrogen**
Pharmacology I	**3**	**Recent concepts in Pharmacology, Drugs acting on the different body systems; their actions, mechanisms of actions, side effects, therapeutic uses, and drug interactions**
Pharmacology II	**3**	**Studying the antimicrobial drugs, the drugs used for combating internal and external parasites, antiseptics and disinfectants, antifungal drugs, antiviral drugs, growth promoters, drug residues in food of animal origins**
Physiology	**3**	**Students will explore in details the function of the nervous the endocrine, the reproductive and the digestive system as well their integration to achieve homeostasis. Students will integrate physiological data and mechanisms with the ongoing basic sciences of anatomy, histology and biochemistry and their clinical applications and follow the rapidly changing and details about Molecular physiology and genetics.**
Biochemistry I	**3**	**Students will explore in details the function of the nervous the endocrine, the reproductive and the digestive system as well their integration to achieve homeostasis. Students will integrate physiological data and mechanisms with the ongoing basic sciences of anatomy, histology and biochemistry and their clinical applications and follow the rapidly changing and details about Molecular physiology and genetics. The course also, covers the metabolism of minerals, nucleic acid, porphyrin as well as water and fat soluble vitamins**

Biochemistry II	**3**	**The course deals with the study of Biological oxidation that includes the bioenergetics, electron transport chain and oxidative phosphorylation and reactive oxygen species. Carbohydrate chemistry and metabolism that include the oxidation of glucose under aerobic (Krebs cycle) and anaerobic condition (glycolysis), glycogen synthesis and conversion of dietary carbohydrates into important metabolic intermediates in the body. Study of Hormones, which include the mechanism of hormone action, hormones chemistry, metabolic and biologic effects of different classes such as peptide hormones (pituitary and pancreatic hormones), steroidal hormones, and hormones derived from tyrosine amino acid. Integration of metabolism is also studied.**
Cellular/Molecular Biology	**3**	**The course deals with various metabolic disorders such as those concerning carbohydrate metabolism, lipid and lipoproteins as well as protein metabolism. It also includes a satisfactory understanding about clinical enzymology demonstrating enzyme markers of various diseases. In addition, it involves a full explanation about liver and renal functions and tests evaluating such functions. Mineral metabolism and endocrine system disorders are also covered during the course. Regulation of gene expression, recombinant DNA technology along with a comprehensive classification of tumor markers and their clinical uses are included.**
Statistics	**3**	**Students will learn the basics of statistical analysis of data, including t-test, ANOVA, chi-square, probability, power analysis, sample size, variance, populations**
Skills and Ethics of Scientific Research	**3**	**Searching and selection of the points of interest, scientific design of the research experiments, treating experimental animals, How to use library and web net for searching for information, different search engines- evaluation of the published materials – bases for good scientific writing- methods of Data Views – scientific publications- Methods of scientific citation.**

Students at Cairo University will take courses in order to fulfill requirements for the Masters degree in either Pharmacology or Toxicology. These courses will consist of core content courses that will prepare selected students for eligibility to transfer to the University of Louisville Department of Pharmacology and Toxicology for completion of their studies for the PhD. Core content courses for the Masters degree awarded at Cairo University will consist of courses specific in the following areas of study. Detailed information regarding these courses as well as credit hours and course descriptions are provided.

Curricular requirements to be taken at the University of Louisville for students transferring to the PhD program in pharmacology and toxicology are shown below (steps 1-4 should be completed in the first year of residency).

1. Communication in English (3 credits)
2. Scientific Writing (2 credits)
3. Research Ethics (1 credit)
4. Seminar (1 credit)
5. Defense of dissertation proposal (Final Qualifying Exam)
6. Presentation and Defense of PhD dissertation
7. Award of the PhD in pharmacology and toxicology from the University of Louisville

ARTICLE VII

All instruction and coursework, presentations, examinations and defenses are in English. Curricular requirements at the University of Louisville may be revised as program quality and effectiveness is assessed through faculty teaching and course evaluations, and through the program review process required of all graduate programs at the University of Louisville. Member(s) of the University of Louisville or Cairo University faculty may travel to the partner university to meet with students, faculty, and administrators to discuss curriculum, course quality, students and logistical issues. Payment for faculty time and effort and for research expenses are the responsibility of the University of Louisville upon admission to the MS or PhD program.

ARTICLE VIII

Students transferring from Cairo University will have access to the full complement of services available to students enrolled at the University of Louisville, including health, sports and recreation, the arts, advising, entertainment, and housing. The International Center at the University of Louisville provides comprehensive information and serves all international students at the University of Louisville, including those transferring from Cairo University.

ARTICLE IX

Originals of this Memorandum of Understanding will be prepared in both the Arabic and English languages, and both versions shall be signed by both parties, with each institution to retain an original agreement in Arabic and in English. Notwithstanding the foregoing, both parties agree the English language version of the Memorandum of Understanding is the definitive statement of the agreement between the parties, and is therefore the official version of the Memorandum of Understanding to resolve any issues of interpretation that may arise during the term of the agreement.

Approved by unanimous vote of the Department of Pharmacology and Toxicology faculty, February 12, 2015
Implemented effective with official signing ceremony held at Cairo University, May 5, 2015

Signatures for Cairo University

Gamal Eldin Esmat, Ph.D. Date:
Vice President for Graduate Studies and Research
Cairo University
Professor of Tropical Medicine and Hepatology,
Cairo University.
Director of the Viral Hepatitis Treatment Centers,
Ministry of Health, Egypt

Osama S. El-Tawil, Ph.D. Date:
Professor and Chair
Department of Toxicology and Forensic Medicine
Faculty of Veterinary Medicine
Cairo University
Program coordinator

Date:
Prof Dr. Gaber Nassar
Cairo University President

Signatures for University of Louisville

Steven R. Myers, Ph.D.
Associate Professor
Associate Chair for Professional Education
Program coordinator
Department of Pharmacology and Toxicology

Date:

David W. Hein, Ph.D.
Professor and Chair
Department of Pharmacology and Toxicology
Associate University Provost for Strategic Planning

Date:

Beth A. Boehm
Vice Provost for Graduate Affairs
Dean, School of Interdisciplinary and Graduate Studies

3/10/15

Date:

Mordean Taylor-Archer
Vice Provost for Diversity and International Affairs

Date: March 10, 2015

UNIVERSITY OF LOUISVILLE
It's Happening Here.

Office of the Executive Vice President
and University Provost

AGREEMENT FOR PhD PARTNERSHIP IN PHARMACOLOGY AND TOXICOLOGY JILIN UNIVERSITY AND UNIVERSITY OF LOUISVILLE

The Department of Pharmacology and Toxicology of the University of Louisville and the Norman Bethune Health Science Center of Jilin University intend to enhance relations between the two universities by developing an academic and cultural exchange in teaching, research and other activities. This agreement describes a PhD partnership in which students enter an MS program at Jilin University and then transfer to the University of Louisville to complete the requirements for the PhD in pharmacology and toxicology.

Students initially will be admitted into the existing MS program in Medical Science at Jilin University. Their course of study at Jilin University includes coursework that will substitute for required coursework for the PhD in pharmacology and toxicology at the University of Louisville. Top students will be recommended for transfer to the PhD program in pharmacology and toxicology at the University of Louisville. Upon transfer to the University of Louisville these students will be required to complete presentation/communication courses as well as the remaining required coursework for the PhD in pharmacology and toxicology. The students also will be required to pass applicable qualifying exams, including preparation, presentation and defense of their PhD dissertation proposal. Upon successful defense of their PhD proposal, the students will engage in research towards the preparation, presentation, and defense of their PhD dissertation. Following successful completion of all required courses at the University of Louisville and successful defense of their PhD dissertation, the student will be awarded the PhD in pharmacology and toxicology from the University of Louisville.

The projected number of students will depend upon the quality of the students and the capacity of University of Louisville faculty members to incorporate these students into their laboratory research programs.

Requirements for transfer of students from Jilin University into the PhD program in pharmacology and toxicology at the University of Louisville include:

University of Louisville • Louisville, KY 40292
P: 502.852.6153 **F:** 502.852.0657 **W:** louisville.edu

1. Submission of a complete application to the University of Louisville for admittance into the PhD program in pharmacology and toxicology, including complete transcript, GRE and TOEFL scores, and recommendation letters that include assessment of applicant's competency in written and spoken English.
2. Signed letter of application from the student to the Department of Pharmacology and Toxicology at the University of Louisville describing research experience, career ambitions, and full documentation of financial resources available to the student.
3. Signed letter submitted by the student to the Department of Pharmacology and Toxicology acknowledging student responsibility to pay for all required tuition and fees including health insurance to the University of Louisville.
4. Transfer of students will be subject to compliance with entry and visa requirements of China, the United States, Jilin University and the University of Louisville.
5. Interview with member(s) of the University of Louisville faculty.

Courses completed at Jilin University will substitute for courses at the University of Louisville. The curricular requirements to be completed at Jilin University that substitute for the specific courses at the University of Louisville are listed below with additional details on course objectives and faculty teaching these courses is provided as an attachment.

1. Pharmacology (Basic Pharmacology, 120 class h with 6 credits; Clinical Pharmacology, 40 class h with 2 credits; Pharmacokinetic, 40 class h with 2 credits; Pharmacy Experimental Technology, 40 class h 2 credits) total 240 h with 12 credits
2. Cell Biology (40 class h with 2 credits)
3. Physiology (80 class h with 4 credits)
4. Biochemistry (60 class h with 3 credits)
5. Medical Statistics (60 class h with 3 credits)
6. Medical English (60 class h + 20 h Oral English seminar attendance & Presentation with 4 credits)
7. Medical Research Methods (30 class h with 1.5 credit)
8. Medical Molecular Biology (40 class h with 2 credits)

Curricular requirements to be taken at the University of Louisville for students transferring to the PhD program in pharmacology and toxicology are shown below:

<u>Fall Semester of first year</u>

1. Communication in English (3 credits)

2. Scientific Writing (2 credits)
3. Seminar (1 credit)
4. Defense of dissertation proposal (Final Qualifying Exam)

Spring Semester of first year

1. Research Ethics (1 credit)
2. Registration for PhD candidacy (2 credits)

Subsequent requirement

1. Registration for PhD candidacy (2 credits) every semester
2. Successful Presentation and Defense of PhD dissertation for award of the PhD in pharmacology and toxicology from the University of Louisville

All instruction and coursework, presentations, examinations and defenses are in English. Curricular requirements at the University of Louisville may be revised as program quality and effectiveness is assessed through faculty teaching and course evaluations, and through the program review process required of all graduate programs at the University of Louisville.

All tuition and fee costs for the PhD program at the University of Louisville, including participation in the health insurance program, is to be paid by the student.

Payment for faculty time and effort and for research expenses are the responsibility of the host university (Jilin University during the MS program and the University of Louisville upon transfer to the PhD program). No additional support to the student or waiver of required tuition and fees will be provided by the University of Louisville.

Students transferring from Jilin University will have access to the full complement of services available to students enrolled at the University of Louisville, including health, sports and recreation, the arts, advising, entertainment, and housing. The International Center at the University of Louisville provides comprehensive information and serves all international students at the University of Louisville, including those transferring from Jilin University.

This agreement shall be effective upon approval by both universities and shall remain in effect indefinitely subject to the right of either institution to withdraw from the agreement by giving no less than one (1) year written notice to the other institution. Any termination shall not affect the obligations already in progress prior to termination.

Any changes or additions to this agreement shall be agreed to in writing by both universities.

Signatures for the University of Louisville:

David W. Hein,
Chair, Department of Pharmacology and Toxicology
Associate University Provost for Strategic Planning Date: June 2, 2015

Beth A. Boehm,
Vice Provost for Graduate Affairs
Dean, School of Interdisciplinary and Graduate Studies Date: December 16, 2014

Mordean Taylor-Archer,
Vice Provost for Diversity and International Affairs Date: December 16, 2014

Signatures for Jilin University:

Professor Gang Chen
Vice President for Graduate and Undergraduate Education
and International Relations Date: 2015-6-2

Professor Fan Li
Vice President of Jilin University
Chancellor of Norman Bethune Health Science Center Date 2015-6-2