UNIVERSITY OF LOUISVILLE®

SCHOOL OF MEDICINE

Department of Pharmacology & Toxicology

2017 Annual Report

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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.

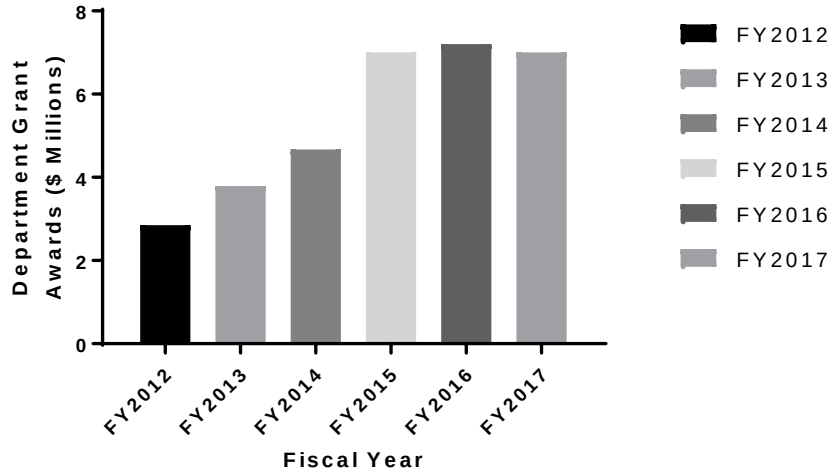
- Advance biomedical knowledge through high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville 2020 Plan.

- 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



Extramural research funding remained steady over the past three fiscal years. Details on funded research grants are provided later in the report.

UofL receives $6.7 M Superfund Program Grant from NIEHS

The University of Louisville received a $6.7 million grant from the National Institutes of Health to become one of fewer than two dozen Superfund Research Centers across the United States. “The University of Louisville is joining an elite group of research enterprises in this growing field of study examining the impact of environmental determinants to health conditions,” said Gregory Postel, M.D., interim president of the University of Louisville. “The work performed here will impact the field for generations to come, not only from the research findings that come from the program, but from the next generation of researchers who will be educated and trained.” Dr. Sanjay Srivastava serves as PI for the multidisciplinary team.

The Department was awarded a new NEI T35 Summer Vision Sciences Program (Brian Ceresa, PI), and the NCI R25 Cancer Education Program was renewed for an additional five years (David Hein and La Creiss Kidd, Multi-PIs).

The number of graduate degrees in the pharmacology and toxicology graduate program exceeded 300 in 2017 and our MS and PhD programs successfully completed its required 10-year program review by the Kentucky Council on Postsecondary Education.

The Department of Pharmacology and Toxicology implemented an Erasmus + Programme with Democritus University of Thrace. The Erasmus + Programme is funded by the European Union to facilitate exchange of faculty and students between partner universities.

The Department of Pharmacology and Toxicology established a PhD partnership program with Ain Shams University in Egypt.

The Department noted passing of a former department chair and a long time faculty member.

Dr. Thomas Darby, Professor and Chair of the Department of Pharmacology and Toxicology from 1969-1973, passed away March 15, 2017. Further information is available at https://secure.citadelalumni.org/taps/detail.php?ID=19451.

Rose Dagirmanjian, Ph.D. appointed Associate Professor of Pharmacology and Toxicology in 1969, subsequently promoted to Professor and Professor Emerita passed away on October 1, 2017. Further information is available at http://www.legacy.com/obituaries/louisville/obituary.aspx?n=rose-dagirmanjian&pid=186943752

Faculty promotions

Dr. Brian Ceresa was promoted to Professor of Pharmacology & Toxicology

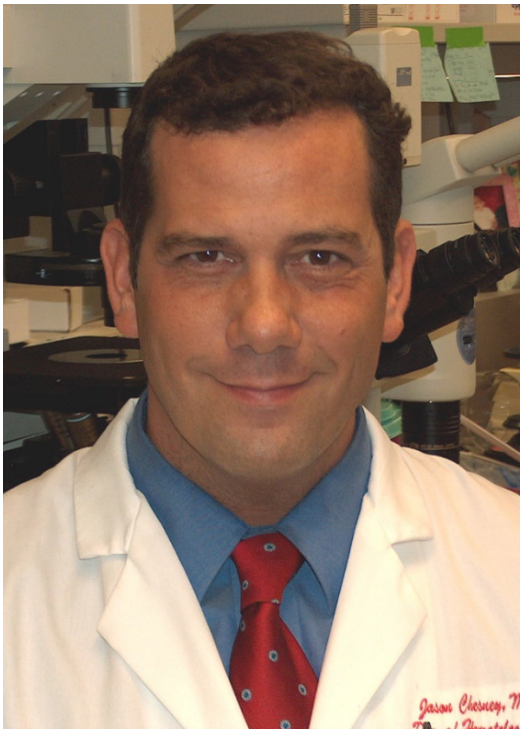
Dr. Levi Beverly was promoted to associate professor of medicine with tenure

Faculty Administrative Appointments

Dr. Gavin Arteel was promoted to Vice Chair for Research

Dr. Brian Ceresa was appointed Pharmacology Thread Director in the medical school curriculum.

Dr. Leah Siskind was appointed Director of Graduate Admissions and Recruitment.



Dr. Jason Chesney was appointed Director of the James Graham Brown Cancer Center

Faculty Appointments

Dr. Juliane Beier was transferred to tenure track

Dr. Joshua Fuqua was appointed Assistant Professor

Dr. J. Calvin Kouokam was appointed Assistant Professor

Faculty Emeritus Appointment

Y. James Kang, DVM. Ph.D. retired December 31, 2017 and was appointed Professor Emeritus of Pharmacology and Toxicology.

Secondary faculty appointment

Juhi Bagaitkar, Ph.D., Assistant Professor, Department of Oral Immunology & Infectious Diseases

Secondary faculty resignation

Lacey McNally, Ph.D., Assistant Professor, Department of Medicine

FACULTY WITH PRIMARY APPOINTMENTS

Demetra Antimisiaris, PharmD, BCGP, FASCP
Associate Professor

Dr. Antimisiaris leads the Frazier Polypharmacy and Medication Management Program, which is a program dedicated to education, research and outreach to help solve the problems associated with polypharmacy. Her primary research interest is in the area of decision making about medication use by all stake holders (prescribers, caregivers, healthcare systems, and consumers), and the factors which influence those decisions. Recent projects focus on monitoring of medication use: i.e. how the healthcare system tracks and documents the use each medication a person is taking, what consumers know about what they are taking, and might there be ways that we can improve upon the current status of medication use monitoring? Machine learning in predictive monitoring of medication use is developing area of research Dr. Antimisiaris is working on with engineering colleagues.

Gavin E. Arteel, PhD, FAASLD
Professor

Dr. Arteel and his current research team have major research foci that include; acute and chronic alcohol-induced liver injury, priming of the inflammatory response in liver, sensitization of cytotoxic cell killing in liver, and mechanisms of hepatic regeneration and remodeling. Key events in fatty liver diseases include: chronic injury, impaired regeneration, and an increase in ECM deposition. The majority of research into the latter event in liver disease has focused on collagenous scar formation during endstage (i.e., fibrotic) liver disease. However, several ECM proteins accumulate rapidly in response to stress and may play key roles in hepatic damage. The nature and magnitude of these changes to the ECM are currently poorly understood. Using proteomic approaches, Dr. Arteel is able to characterize the qualitative and quantitative changes to the ECM proteome ("matrisome") in response to stress. These results therefore also serve as a foundation for future analyses in hepatic models of liver disease, as well as a foundation for predictive modeling of the impact of these changes. There are currently no FDA-approved therapies to halt or reverse the progression of liver diseases. It is the goal of this laboratory's work to identify key molecular mediators of chronic liver diseases, which may serve as useful therapeutic targets. Importantly, the molecular mechanisms identified may not only be shared in chronic diseases of the liver, but also in chronic inflammatory diseases to other organs. Therefore, the results of our research may shed light on chronic diseases of inflammation and remodeling in other organs (e.g., heart, lungs and kidneys).

Juliane Beier, Ph.D.
Assistant Professor

Dr. Beier's research focus is on liver diseases. More specifically, the lab is investigating environmental vinyl chloride exposure in the context of existing underlying liver disease. Clearly high occupational exposure to vinyl chloride is directly hepatotoxic; what is less well clear is the impact of lower environmental exposure on exacerbating existing liver disease. Given the fact that a significant portion of the population has risk factors for liver disease (most commonly, obesity), and that 30% of the US population has elevated indices of liver damage, any potential impact of low environmental exposure could be dramatic. Her findings indicate that indeed vinyl chloride can exacerbate liver damage caused by another factor. This work shifts the paradigm of current risk assessment for not only this compound, but any other environmental agent that may potentially damage the liver.

Brian P. Ceresa, Ph.D.

Professor

The Ceresa lab studies the epidermal growth factor receptor (EGFR) and its role in tissue biology/wound repair and cancer. The EGFR has an essential role in many developmental processes and for homeostasis of a number of tissues, such as the cornea, epidermis, and colon. In addition, the EGFR is overexpressed and/or hyperactivated in a number of cancers, including lung, breast, gastric, pancreatic, and melanomas. The Ceresa lab is interested in the molecular mechanisms that regulate the magnitude and duration of EGFR signaling. Understanding how EGFR signaling is dysregulated may provide clues to the diagnosis, prognosis, or treatment of cancer. Conversely, deliberately perturbing these regulatory processes is a strategy to enhance corneal epithelial wound healing. They use a variety of experimental strategies to answer our scientific questions – from purified proteins, primary and immortalized cell lines, isolated animal tissues, and whole animals.

Shao-yu Chen, Ph.D.
Professor

Dr. Chen has conducted alcohol-related birth defects research for more than 20 years. His research program focuses on elucidation of cellular and molecular mechanisms of alcohol-induced birth defects. In his laboratory, a combination of state-of-the-art approaches, including RNA interference, microRNA technology and ultrasound-guide in utero microinjection are integrated with cell and whole embryo culture systems, as well as in vivo mouse and zebrafish models of Fetal Alcohol Spectrum Disorders (FASD) to elucidate the molecular mechanisms underlying FASD. Dr. Chen's laboratory has been successfully conducting innovative and pioneering research in various areas, including Nrf2, Siah1

signaling pathways and the microRNAs involved in ethanol-induced apoptosis and birth defects. These studies have provided important information regarding the mechanisms underlying ethanol-induced birth defects. His research has also clearly shown the effectiveness of a number of agents, including antioxidants, the neuroprotective peptides, and microRNA mimics, in the prevention of alcohol-induced apoptosis and structural abnormalities in embryos. These findings are expected to validate possible molecular targets and yield innovative strategies for the prevention of FASD and give hope that antioxidants, certain peptides or microRNA mimics could lessen the effects of prenatal alcohol exposure in the children of women who are unable to curtail their alcohol abuse while pregnant.

Geoffrey J. Clark PhD
Associate Professor

Ras is arguably the most important oncogene of all and may drive more than 30% of human cancers. Yet it has defied efforts to target it therapeutically. One of the most fascinating and poorly understood aspects of Ras biology is that deregulated Ras activity can promote cell death. These Ras death pathways are subverted in human tumors, allowing the transforming effects of activated Ras to dominate. I have spent a large part of the last 15 years defining the signaling mechanism used by Ras to kill cells and trying to understand how they are subverted in cancer. These studies have focused extensively on the RASSF family of Ras death effectors, the majority of which were first identified and cloned by my group. I also have a program involving the development of novel small molecules that act directly or indirectly to suppress Ras driven tumorigenesis. The laboratory utilizes a variety of cellular and molecular biology techniques to pursue these studies.

Jonathan H. Freedman, Ph.D.
Professor

Dr. Freedman's research interests can be divided into two broad categories: basic and applied. The tools developed as part of the applied research program are used to advance basic research. Likewise, mechanistic information derived through basic research projects is adapted and then developed into applied protocols. The basic research program involves understanding how exposures to environmental factors contribute the development and/or exacerbation of human diseases. Our group is focused in the roles of transition metals (cadmium and zinc) and diet in the etiology of cancer, metabolic syndrome (e.g., type II diabetes) and Autism Spectrum Disorder. We are applying a systems biological approach; where interactions among phenotypes, genetics, transcriptomics and environmental factors at the molecular, cellular, organ and whole organism level are characterized in an integrated manner. This holistic approach allows us to develop novel models to delineate the mechanism(s) by which multiple factors come together to produce human disease. Our group

utilizes model organisms (*Caenorhabditis elegans* and mice) and mammalian cell culture, as well as high-throughput screening technologies to explore the environmental contributions to these human diseases.

The applied research program is focused on the development of alternative organisms for *in vivo* toxicological testing. This project is part of the international effort to reduce, refine and replace mammalian species in toxicity testing. We utilize the technologies and statistical methods already developed in the laboratory for high-throughput toxicity testing using *C. elegans* to other biomedically-relevant model organisms; *Daphnia*, *Drosophila*, Zebrafish and *Xenopus*.

Joshua L. Fuqua, Ph.D.
Assistant Professor

Development of proteins and biologic for therapeutic and diagnostic indications in infectious disease, cancer, and neurodegenerative disease. Dr. Fuqua has experience in preclinical product development ranging from drug manufacturing to toxicology studies. He has familiarized himself with Project Management and Regulatory Affairs applications in the pharmaceutical industry through external certificate programs and practice.

Ramesh Gupta, Ph.D.
Professor

Dr. Gupta's current major interests are to develop new prevention and treatment strategies by intervention with dietary constituents (such as berries, common spices), novel subcutaneous polymeric implantable devices embedded with test agents for systemic and local delivery, and milk-derived exosomes as nano carriers for oral delivery of both standard drugs and natural agents with therapeutic activity, as well as identify molecular targets. The common experimental models and laboratory techniques performed routinely in his laboratory include, cell culture, wild-type and xenograft models for lung cancer and breast cancer, ^{32}P-postlabeling DNA adduct assay, qPCR, western, tumor imaging, and HPLC coupled with various detectors. His laboratory was the first to demonstrate that berries are effective beyond the GI tract by showing significant inhibition of estrogen-mediated breast cancer and lung cancer. The ongoing work with phenolics isolated from these berries have demonstrated that berry phenolics can have significant synergistic activity towards anti-proliferation, apoptosis and anti-inflammation due to attack of different bioactives on distinct or overlapping protein targets against lung cancer. These findings have been confirmed in cell culture and tumor models. His laboratory's present major thirst is on drug delivery for enhanced therapeutic response. The most recent development is a novel technology for oral delivery of drugs using bovine milk-derived exosomes (biological nanoparticles) as a carrier for small drug molecules, as well as macromolecules such as siRNAs. This technology is emerging as a major drug delivery technology in the field with potentially wide therapeutic applications. His

laboratory has trained numerous graduate students, postdoctoral scholars, residents, undergraduates and High School students. His laboratory is currently supported by a postdoctoral fellow, two PhD students and two junior faculty.

Joshua L. Hood M.D., Ph.D.
Assistant Professor

Dr. Hood's lab is focused on the translational design and implementation of biology inspired nanomedicine supported by biologic nanovesicle (exosome) investigations. Understanding exosome function and nanocarrier properties in the context of tumor angiogenesis, macrophage function and pre-metastatic niche formation are explored with a specific focus on melanoma. Other derivative projects include development of exosome-based biomarkers for cancer and synthetic nanomedicines to combat pathogenic exosomes and similarly structured viruses. Our long-term goal is to develop and translate personalized exosome-based diagnostics and therapeutics for melanoma and other cancers.

David W. Hein, PhD
Peter K. Knoefel Endowed Professor and Chai

Dr. Hein's research program in molecular epidemiology identifies individuals genetically susceptible to the development of cancer from environmental and occupational chemicals in order to focus treatment and prevention public health strategies on those at greatest risk. His research in pharmacogenetics/genomics and personalized medicine improves understanding of the genetic causes for drug failure and/or drug toxicity in order to optimize clinical drug therapy for each individual patient. His research in functional genomics improves understanding of the mechanistic and clinical consequences of genetic variation in the biotransformation of carcinogens and drugs. Dr. Hein has coauthored over 240 peer-reviewed journal articles and book chapters, 75 published gene sequences, and about 600 abstracts. The publications have over 13,000 citations with an h-index of 58. Dr. Hein has served as principal investigator/co-investigator/mentor on over 75 grants and contracts totaling over $50M.

Y. James Kang, Ph.D., D.V.M.

Professor

Dr. Kang's research program includes investigations of copper metabolism and cardiovascular function, experimental therapeutics for liver fibrosis, and 3D bio-printing.

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

Associate Professor

Dr. Kidd's research focuses on the utilization of state of the art bioinformatics tools to identify and validate genetic susceptibilities related to cancer risk and poor disease prognosis (i.e., high tumor grade/stage, disease/biochemical recurrence). Although Dr. Kidd is intrigued by major cancer malignancies, a majority of her work has centered on prostate cancer. Her earlier work focused on complex interactions among xenobiotic metabolism, DNA repair, oxidative stress-related genes, and angiogenesis in relation to prostate and breast cancer outcomes. She was a lead author on the first study on the role of genomic anomalies in the chemokine ligand 5 (CCL5) and chemokine receptor 5 (CCR5) associated genetic alterations in prostate cancer risk among men of African and Caribbean Descent (Hered Cancer Clin Pract. 2012 Nov 20; 10(1): 16). A majority of her work focuses on understanding the role genetic plays in high cancer incidence and mortality rates among underserved populations. She has 3 patents for important prostate cancer predictors from her population-based studies (61/240089, 61/313,595, 61/655,243). Dr. Kidd was a significant contributor of a multi-center genome wide study for genetic susceptibility genes for prostate cancer among men of African and European descent.

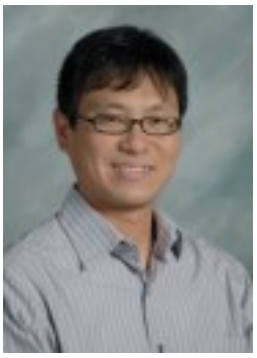
Recently, Dr. Kidd's lab demonstrated the up-regulation of one particular miRNA, miR-186-5p in metastatic prostate cancer cell lines and serum from prostate cancer patients. Her lab also demonstrated a decrease in cell proliferation, colony formation and cell invasion in miR-186 depleted metastatic prostate cancer cell lines. Based on pre-clinical studies, the decrease in cell invasion may be related to an up-regulation of AKAP12 following the repression of miR-186 in metastatic prostate cancer cell lines. Presumably, AKAP12, a tumor suppressor gene, inhibits pAkt, which in turn suppresses beta-catenin, a gene essential for cell invasion, epithelial mesenchymal transition and chemo-sensitivity. It is her hope that her research findings will lead to the discovery of therapeutic targets for the effective treatment of aggressive and lethal forms of cancer. Such efforts will help to reduce the burden of this disease among cancer patients and their families.

J. Calvin Kouokam, Ph.D.
Assistant Professor

My main research focus is the development of plant produced proteins for the treatment of human diseases. Our current projects involve safety, pharmacodynamic and pharmacokinetic evaluation of antivirals targeting HIV-1 and other enveloped viruses, including HSV-2. Notably, we are assessing the safety and efficacy of the potent antiviral lectin Griffithsin (GRFT) in the context of colorectal pathologies (e.g. ulcerative colitis and colorectal cancer). In addition, we are interested in plant derived lectins as anticancer agents. Such lectins will be produced in Nicotiana benthamiana plants. Finally, we plan in the near future to assess natural products from various African plants for their therapeutic activities.

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

Dr. Lukashevich's research interest includes pathogenesis of liver dysfunctions caused by highly pathogenic RNA viruses causing hemorrhagic fevers (HFs). In collaboration with Dr. Arteel's team, he discovered a novel mechanism of liver involvement in pathogenesis of viral HFs. According to this mechanism, the virus-induced pathophysiological hepatocyte proliferation is accompanied by cell cycle arrest and contributes to expansion of the infection to parenchymal cells. Elevated levels of plasma transaminases are likely explained, at least in part, by aborted hepatocyte proliferation causing apoptotic events and induction of oval cells, the "second line" of liver protection against the injury. These results may lead to the development of new therapeutic interventions for devastating diseases caused by HF viruses (e.g., Lassa, Machupo, Ebola). Development of new preventive vaccines based on advanced vaccine technologies is another scientific avenue in Dr. Lukashevich lab. He designed several promising vaccine candidates against Lassa HF, the most prevalent HF in West Africa, and against South American HFs. He co-invented infectious DNA (iDNA) technology to improve existing and experimental live-attenuated vaccines against Yellow Fever, Venezuelan Equine Encephalitis, Japanese Encephalitis, and Chikungunya. This technology combines advantages of naked DNA immunization and high efficacy of live-attenuated vaccines. The iDNA-launched vaccines are "manufactured" in vaccinated individuals and do not require traditional vaccine manufacturing facility and technology.



Nobuyuki Matoba, Ph.D.
Associate Professor

Dr. Matoba's research is focused on the development of protein pharmaceuticals. To this end, they utilize a plant-based transient protein production system. This technology enables quick transition of candidate proteins from discovery and preclinical studies to clinical testing and ultimately provides cost-effective vaccines and therapeutics for developing countries. They employ multidisciplinary experimental methodologies including protein engineering, biochemistry, analytical chemistry, antiviral research and immunology. Currently, one of their projects is developing a vaccine against inflammatory bowel disease and colitis-associated colon cancer. Another project is investigating the cancer diagnostic and therapeutic potentials of a "lectibody", an antibody-lectin chimera that can recognize a broad spectrum of cancer cells. Our projects are funded by NIH, DoD and Helmsley Charitable Trust.

Kenneth E. Palmer, Ph.D.

Professor, Executive Director, Center for Predictive Medicine

Dr. Kenneth Palmer's primary research focus is in developing vaccines and antivirals that address pathogen diversity and counteract immune evasion strategies. His laboratory has been developing a lectin, Griffithsin, as a broad-spectrum antiviral biopharmaceutical for prevention of human immunodeficiency virus and genital herpes virus transmission. This product is advancing to a first-in-humans clinical trial. Dr. Palmer is the Director of the University of Louisville Center for Predictive Medicine, which has state-of-the-art facilities for BSL-3 biocontaiment research. His group is developing broad-spectrum antiviral strategies for prevention and treatment of emerging and re-emerging viral infections of public health concern, including highly pathogenic influenza and coronaviruses. Dr. Palmer is the Helmsley Charitable Trust Endowed Chair in Plant-based Pharmaceutical Research, which recognizes that the core products and technologies that drive his research program originate in plants, or use plants as recombinant protein expression systems. The Palmer laboratory is supported by grants from the National Institutes of Health and private philanthropy from the Helmsley Charitable Trust.

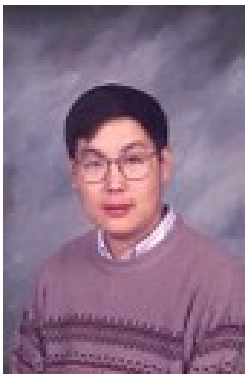
William M. Pierce, Jr., Ph.D.
Professor, Executive Vice President for Research and Innovation

Dr. Pierce's research areas of emphasis include drug design and organ targeting of pharmaceuticals and biomolecular mass spectrometry with emphasis on proteomics.

Leah J. Siskind, Ph.D.
Associate Professor

The Siskind laboratory has several different areas of interest and combines expertise at the biophysical, molecular, cellular, and animal level with the goal of translating findings to the clinic. The laboratory has several areas of focus. First, the Siskind laboratory aims to protect the kidney from the toxic effects of chemotherapeutics so that they can be more effectively utilized to treat cancer. Current chemotherapies such as cisplatin often have the deleterious side-effect of kidney toxicity which in almost 30% of cancer patients limits their use. Data from the Siskind laboratory indicates that repeated dosing of chemotherapeutics induces pro-fibrotic signaling pathways in the kidney, leading to long-term loss of kidney 0function. The Siskind laboratory aims to target these signaling pathways to protect the kidney from chemotherapeutics so that they can

be utilized better to reduce tumor burden. In addition, the Siskind laboratory in collaboration with the laboratory of Dr. Levi Beverly studies fundamental cancer cell biology utilizing 3-dimentional models of tumors in culture to understand how interactions between cancer cells and the extracellular matrix alters tumor cell proliferation, migration, invasion, and metastasis. In a collaboration with the laboratories of Drs. Beverly and Clark, the Siskind lab aims to develop a porcine model of lung cancer. They aim to determine if pigs represent a model system that more closely resemble the progression and metastasis of human cancer patients. Furthermore, the lab aims to treat pigs with standard of care chemotherapeutic regimens, exactly as human patients would be treated, and determine if tumors demonstrate a similar response, as seen in patients. Finally, they aim to determine if pigs can be used as a model for the testing of immune-modulatory therapeutics that are now being tested in humans. Interestingly, they have found that the most exciting the therapies used in humans that target CTLA4 and PD-1 also bind to their porcine counterpart, raising the exciting possibility that these therapeutics will be able to be used in co-clinical trials in pigs to guide their usage in humans.



Zhao-hui (Joe) Song, Ph.D
Professor

The current research focuses of Dr. Song's laboratory are the molecular targets of cannabinoids. Cannabinoids are composed of three categories, including phytocannabinoids (the active chemical components of cannabis), endocannabinoids (the cannabinoid-like substances in our body), and synthetic cannabinoids. We are studying the ligand binding and signal transduction mechanisms of CB1 and CB2 cannabinoid receptors, two proven molecular targets for cannabinoids. In addition, we are investigating GPR3, GPR6 and GPR12, a family of orphan receptors that have been recently shown by us to be novel molecular targets for cannabidiol (CBD). CBD is the major non-psychoactive of marijuana and has been proposed to have therapeutic potentials for a variety of illnesses, including glaucoma, neurological/psychiatric disorders and cancer. Therefore, our research on GPR3, GPR6 and GPR12 will not only help to understand the mechanisms of action for CBD, it will also explore the viability of these three receptors as novel therapeutic targets.

J. Christopher States, Ph.D.

Professor

The major interests of the laboratory are arsenic toxicology, DNA repair and development of mitosis disrupting drugs for cancer chemotherapy. Currently, the laboratory is investigating the role of miRNA dysregulation in arsenic induced skin carcinogenesis. The lab is determining miRNA profiles of arsenic-induced squamous and basal cell carcinomas and premalignant hyperkeratoses. In parallel, the lab is characterizing miRNA expression changes that occur during arsenic transformation of a human keratinocyte cell line. The interest in mitotic disruption includes investigation of miR-186 overexpression effects on

chromatid separation and compounds that inhibit function of the anaphase promoting complex/cyclosome. Other interests include induction of chronic adult diseases by early life/in utero arsenic exposure and enhancement of cisplatin sensitivity by co-administration of arsenicals.

John P. Wise, Sr., Ph.D.
Professor

The Wise Laboratory studies cancer and seeks to understand how environmental chemicals transform normal cells into tumor cells. Their work focuses on chromosomes and how changes in the number and structure of chromosomes leads to cancer. The Wise Laboratory has made important advances in understanding DNA damage, DNA repair, mitosis, and centrosome biology; discovering how chemical impacts on these processes lead to chromosome instability and carcinogenesis. The Wise Laboratory then compares these outcomes in humans, to similar endpoints in whales, alligators and sea turtles to discover novel adaptations and to better conserve wildlife. In addition, to these efforts, The Wise Laboratory pioneers studies on how zero gravity changes these processes during space exploration. Some of the new directions in the Laboratory include stem cell research, autophagy and three-dimensional cell culture as they consider how metals impact or create cancer stem cells in their carcinogenic mechanism and preventative studies as they seek to understand if natural products like berries and beets can reduce or reverse toxicity. The Wise Laboratory contextualizes their studies in a "one" environmental health perspective, which considers data from their studies of wildlife, domestic animal, and ecosystem health, together with data from their human health studies. Thus, work in the Wise Laboratory includes laboratory-based mechanistic investigations using state-of-the-art cellular and molecular toxicology tools in their laboratories on the UofL Medical School campus combined with ship-and-shore-based work at field sites in Vieques, Puerto Rico; Cape Canaveral, Florida; and the Gulfs of Maine, Mexico and California.

Sandra S. Wise, Ph.D.
Assistant Professor

Dr. Wise's research interests include how environmental chemicals, such as hexavalent chromium, depleted uranium and oil and dispersed oil products, can transform normal cells into cancer cells. These studies have focused on DNA repair deficiency and its impact on chromosome instability as a driving mechanism to cellular transformation and the development of disease. Currently, she is pursuing how cells exposed to these chemicals induce DNA and chromosomal damage yet are able to survive and evade the normal cell death pathways that should occur in order to protect the organism from disease.

FACULTY WITH SECONDARY APPOINTMENTS

Juhi Bagaitkar, Ph.D.
Assistant Professo Oral Immunology & Infectious Diseases
Ph.D., Oral Immunology and Infectious Diseases, University of Louisville (2010)

Research Interests: To understand the immunological consequences of apoptotic cell clearance during inflammation and infection.

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

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

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

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

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

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

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

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

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

Research Interests: Application of mass spectrometry in biomedical research; Drug and metabolite identification and quantification; Protein identification and post-translational modification; Hemoglobin adducts as biomarkers of chemical exposure and pathogenesis.

Lu Cai, M.D., Ph.D.

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

Research Interests: Diabetic cardiomyopathy and nephropathy

Matthew C. Cave, M.D.

Associate Professor of Medicine
M.D., University of Kentucky (2001)

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

Jason A. Chesney, M.D., Ph.D.

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

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

Daniel J. Conklin, Ph.D.

Professor of Medicine
Ph.D., University of Notre Dame (1995)

Research Interests: Environmental cardiology; cardiovascular toxicology.

Albert R. Cunningham, Ph.D.

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, Ph.D.

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, Ph.D.

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

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

Ayman El-Baz, Ph.D.

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

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

Paul N. Epstein, Ph.D.

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

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

Wenke Feng, Ph.D.

Associate Professor of Medicine
Ph.D, Biochem/Biotech, University for Bodenkultur (1998)

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

Herman B. Frieboes, Ph.D.

Associate Professor of Bioengineering

Ph.D., Biomedical Engineering, University of California, Irvine (2006)

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

Lelia Gobejishvili, Ph.D.

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

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

Evelyne Gozal, Ph.D.

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

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

Yiru Guo, M.D.

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

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

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

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

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

Bradford G. Hill, Ph.D.

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

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

Kyung Hong, Ph.D.

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

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

A. Bennett Jenson, M.D.

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

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

Steven P. Jones, Ph.D.

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

Research Interests: Metabolic signaling in the cardiovascular system.

Swati Joshi-Barve, Ph.D.

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

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

Bradley B. Keller, M.D.

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

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

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

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

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

Donghan Lee, Ph.D.

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

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

Chi Li, Ph.D.

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

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

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

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

Research Interests: Genetic predisposition to cancer.

Craig J. McClain

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

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

Kelly M. McMasters, M.D., Ph.D.

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

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

Michael L. Merchant, Ph.D.

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

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

Donald M. Miller, M.D., Ph.D.

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

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

Chin K. Ng, Ph.D.

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

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

Matthew A. Nystoriak, Ph.D.

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

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

Martin G. O'Toole, Ph.D.

Assistant Professor of Bioengineering
Ph.D., Chemistry, University of Louisville (2008)

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

Timothy E. O'Toole, Ph.D.

Assistant Professor of Medicine
Ph.D. Biological Chemistry, University of Michigan (1987)

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

M. Michele Pisano, Ph.D.

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

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

Shesh N. Rai, Ph.D.

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

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

Craig S. Roberts, M.D.

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

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

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

Professor of Pediatrics

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

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

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

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

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

Research Interests: Tobacco-induced alterations to microbial-associated molecular patterns of Porphyromonas gingivalis; Tobacco-induced alterations to innate-pathogen interactions; Tobacco alkaloid amplification of endogenous anti-inflammatory pathways; Identification of gingivitis- and periodontitis-specific infrared molecular signatures.

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

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

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

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

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

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

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

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

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

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

Marcin Wysoczynski, Ph.D.
Assistant Professor of Medicine
Ph.D. Pomeranian Medical University (2009)
Research Interests: Innate immunity in myocardial repair.

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

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

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

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

Wolfgang Zacharias, Ph.D.
Professor of Medicine

Ph.D., Biochemistry, Philipps-University, Marburg, Germany (1980)

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

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

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

FACULTY WITH EMERITUS APPOINTMENTS

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

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

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

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

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

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

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

FACULTY WITH ADJUNCT POSITIONS

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

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

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

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

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

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

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

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

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

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

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

OFFICE STAFF

Blair Cade	Department Manager & Exec. Asst. to Vice Provost
Flo Su	Program Coordinator, Sr.
Olivia Hill	Administrative Assistant
Hannah Bitter	Administrative Assistant (temporary part-time)
Aaron Howell	Program Coordinator, Sr.
Kelly Holland	Administrative Assistant

2017 NEW GRADUATE STUDENT CLASS

Mariam Refaat Zaky Habil
M.B., B. Ch., Faculty of Medicine, Cairo University
M.Sc., Medical Pharmacology, Faculty of Medicine, Cairo University

Sean M. Raph

B.A., Biology, University of Maine
M.S., Biological Sciences, University of Southern Maine

Regina Del Schnegelberger
B.S., Chemistry, emphasis Medicinal Chemistry, Northwest Missouri State University

Sophia M. Sears

B.A., Molecular Biology and Biochemistry, Goshen College

Sarah Huang Shrader

B.A., Comparative Literature, Brown University

Graduate Students

Al Hassan, Kyakulaga
Al-Eryani, Laila
Barve, Aditya
Bushau, Adrienne
Carlisle, Samantha
Chen, Liya
Chen, Wei-Yang
Dent, Mathhew
Dolin, Christine
Dupre, Tess
Dwenger, Marc
El-Baz, Nagwa
Finch, Jordan
Gosney, Julie
Greenwell, John Caleb
Grewal, Jaspreet
Habel, Mariam
Hoffman, Mason
Hollis, Elizabeth
Hudson, Shanice
Jackson, Nicole
Jin, Lexiao
Jin, Jian
Karukonda, Divya
Kim, Christine
Kurlawala, Zimple
Lang, Anna
Laun, Alysa
Li, Yihong
Li, Fengyuan
Lin, Qian
Lu, Haiyan
Mahmoud, Mohamed Yehia
McAllister, Ryan
Meng, Shuhan
Miller, Hunter
Mudd, Ashley
Neely, Aaron
Pandit, Harshul
Poole, Lauren
Raph, Sean
Richardson, Andre
Royal, Joshua
Rush, Jamie
Saforo, Doug
Schnegelberger, Regina
Sears, Sophie
Shao, Tuo
Sharp, Cierra
Shi, Hongxue
Shrader, Sarah
Speer, Rachel
Stepp, Marcus
Harrell-Stewart, Desmond
Toyoda, Jennifer
Tyo, Kevin
Vicary, Glenn W.
Wechman, Stephen
Whitt, Aaron
Young, Jamie
Zheng, Yuxuan

2017 GRADUATES

Graduate	Deg.	Faculty Mentor	Dissertation/Thesis Title
J. Caleb Greenwell	Ph.D.	Jessie Roman, M.D.	Age-related host factors regulate lung cancer progression
Marcus W. Stepp	Ph.D.	David W. Hein, Ph.D.	Role of human arylamine N-acetyltransferase 1 in tumorigenesis and cancer biology
Lauren G. Poole-Hardy	Ph.D.	Gavin E. Arteel, Ph.D.	Novel insight into the liver-lung axis in alcohol-enhanced acute lung injury
Zimple D Kurlawala	Ph.D.	Levi J. Beverly, Ph.D.	UBQLN1: A multi-domain protein with multiple functions
Tuo Shao	Ph.D.	Wenke Feng, Ph.D.	The role of HIF-1α in intestinal epithelial barrier function in alcoholic liver disease
Laila Al-Eryani	Ph.D.	J. Christopher States, Ph.D.	miRNA expression changes in arsenic-induced skin cancer in vitro and in vivo
J. Mason Hoffman	M.S.	J. Christopher States, Ph.D.	Targeting the major regulator of mitosis
Ashley M. Mudd	M.S.	Ramesh C. Gupta, Ph.D.	Prevention and treatment of familial adenomatous polyposis and colorectal cancer by bilberry-derived anthocyanidins
Divya Karukonda	M.S.	Ramesh C. Gupta, Ph.D.	Advances in tumor-targeted therapy using nanomedicine
Rachel M. Speer	M.S.	John P. Wise, Sr., Ph.D.	The comparative cytotoxicity and genotoxicity of hexavalent chromium in humans and sea turtles
Tess V. Dupre	Ph.D.	Leah J. Siskind, Ph.D.	Sphingolipids in models of kidney injury and disease
Elizabeth M. Hollis	M.S.	Ayman El-Baz, Ph.D.	Diffusion-weighted magnetic resonance imaging in diagnosing graft dysfunction: a non-invasive alternative to renal biopsies

Al Hassan Kyakulaga	M.S.	Ramesh C. Gupta, Ph.D.	Withaferin A synergistically enhances the effect of paclitaxel against lung cancer
Stephan L. Wechman	Ph.D.	Kelly M. McMasters, M.D., Ph.D.	Characterization of a mutant oncolytic adenovirus and the role of JNK in enhancing virotherapy
Nicole M. Jackson-Santerre	Ph.D.	Brian P. Ceresa, Ph.D.	Identifying the signaling mechanisms of EGFR-mediated apoptosis
Jaspreet S. Grewal	Ph.D.	Jason A. Chesney, M.D., Ph.D.	Targeting the glucose metabolism of myeloid-derived suppressor cells (MDSCs) to stimulate cancer immunity
Christine E. Dolin	M.S.	Juliane I. Beier, Ph.D.	The effects of moderate alcohol consumption and inflammation on the hepatic matrisome and the renal cortex proteome
Christopher P. Shidal	Ph.D.	Keith R. Davis, Ph.D.	Combating malignant melanoma with the multifaceted soy-derived peptide lunasin
Aaron M. Neely	Ph.D.	Chi Li, Ph.D.	The interaction of homoserine lactones and paraoxonase 2 modulates cell death signaling and cell proliferation

FACULTY HONORS

Chen, Shao-Yu

- Appointment as University Scholar was renewed.
- 2. Senior author on a poster awarded a junior investigator award from the Research Society on Alcoholism, RSA annual meeting, 2017, Denver, Colorado.

Gupta, Ramesh

- Best Poster Awards at the two major National/International societies listed under F, and licensing of the milk exosome technology by a major Biopharma.

Hein, David

- Distinguished University Scholar award was renewed for five year term

Hood, Joshua

- Selected through an internal competition to submit an application to the JGBCC molecular therapeutics CoBRE program cycle V, 2017.
- Pre-proposal selected to submit an application to the Jewish Heritage Fund for Excellence

States, Christopher

- Career Achievement Award, Society of Toxicology Metals Specialty Section

Wise, John

- Jackson State University Award for Visionary Leadership

STUDENT HONORS

Al-Eryani, Laila (States)

- Battelle Student Research Award for the Dermal Toxicology Specialty Section, Society of Toxicology

Allen, Cecily (Hein)

- Received a first place award in the professional student category for her research poster presented at Research!Louisville, September 2017.

Carlisle, Samantha (Hein)

- Received a graduate student research award from the Drug Metabolism Division of the American Society for Pharmacology and Experimental Therapeutics for her research poster presented at the annual meetings of Experimental Biology held in Chicago, April 2017.

Dolin, Christine (Arteel)

- Graduate student council 3-minute thesis competition finalist
- Selected for a platform presentation, OVSOT annual meeting, Cincinnati, OH.

Hudson, Shanice (Arteel)

- Selected to attend the NIH/NIDA Diversity Supplement Workshop, Washington, DC.

Lang, Anna (Beier)

- Selected for podium presentation, OVSOT Summer Student Meeting, Louisville, KY

Royal, Joshua (Matoba)

- Presented a poster at Research!Louisville and received **Master's Basic Science Graduate Student Award 1st place**

Saforo, Doug (Siskind)

- Carl Storm Underrepresented Minority (CSURM) Fellowship, Gordon Research Conference (2017).

Sharp, Cierra (Siskind)

- Research!Louisville: 2nd place poster presentation for doctorate students
- University of Louisville: Graduate Student Council travel award to attend the 2017 American Society of Nephrology Kidney Week

Stepp, Marcus (Hein)

- Received a second place award in the doctoral student category for his research poster presented at Research!Louisville, September 2017.

Young, Jamie (Arteel)

- 2nd place poster in Masters Basic-Science, Research!Louisville annual meeting

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

1. Agrawal, A. K., F. Aqil, J. Jeyabalan, W. A. Spencer, J. Beck, B. W. Gachuki, S. S. Alhakeem, K. Oben, R. Munagala, S. Bondada, and R. C. Gupta. 2017. 'Milk-derived exosomes for oral delivery of paclitaxel', *Nanomedicine,* 13: 1627-36.

2. Al-Eryani, L., S. Waigel, V. Jala, S. F. Jenkins, and J. C. States. 2017. 'Cell cycle pathway dysregulation in human keratinocytes during chronic exposure to low arsenite', *Toxicol Appl Pharmacol*, 331: 130-34.

3. Allen, C. E., M. A. Doll, and D. W. Hein. 2017. 'N-Acetyltransferase 2 Genotype-Dependent N-Acetylation of Hydralazine in Human Hepatocytes', *Drug Metab Dispos*, 45: 1276-81.

4. Al-Maqtari T, Hong KU, Vajravelu B, Moktar A, Cao P, Bhatnagar A, Bolli R. 2017. Transcription Factor-Induced Activation of Cardiac Gene Expression in c-kit+ Cardiac Progenitor Cells. *PLoS One.* 12(3):e0174242.

5. Aloway, A., A. Kumar, A. S. Laun, and Z. H. Song. 2017. 'Cannabinoid Regulation of Intraocular Pressure: Human and Animal Studies, Cellular and Molecular Targets.' in V. Preedy (ed.), *Handbook of Cannabis and Related Pathologies* (Elsevier).

6. Antimisiaris, D., K. G. Bae, L. Morton, and Z. Gully. 2017. 'Tamoxifen Pharmacovigilance: Implications for Safe Use in the Future', *Consult Pharm*, 32: 535-46.

7. Antimisiaris, D., and T. Cutler. 2017. 'Managing Polypharmacy in the 15-Minute Office Visit', *Prim Care*, 44: 413-28.

8. Antimisiaris, D., and L. Morton. 2017. 'The Urgent Need for Robust Geriatric Patient Care Skills in Primary Care', *Prim Care*, 44: xv-xvi.

9. Aqil, F., J. Jeyabalan, A. K. Agrawal, A. H. Kyakulaga, R. Munagala, L. Parker, and R. C. Gupta. 2017. 'Exosomal delivery of berry anthocyanidins for the management of ovarian cancer', *Food Funct*, 8: 4100-07.

10. Aqil, F., J. Jeyabalan, R. Munagala, S. Ravoori, M. V. Vadhanam, D. J. Schultz, and R. C. Gupta. 2017. 'Chemoprevention of Rat Mammary Carcinogenesis by Apiaceae Spices', *Int J Mol Sci*, 18: E425.

11. Aqil, F., R. Munagala, J. Jeyabalan, A. K. Agrawal, and R. C. Gupta. 2017. 'Exosomes for the enhanced bioavailability and efficacy of curcumin', *The AAPS Journal*, 19: 1691-702.

12. Arora, P., A. Basu, M. L. Schmidt, G. J. Clark, H. Donninger, D. B. Nichols, D. F. Calvisi, and N. Kaushik-Basu. 2017. 'Nonstructural protein 5B promotes degradation of the NORE1A tumor suppressor to facilitate hepatitis C virus replication', *Hepatology*, 65: 1462-77.

13. Avila, D. V., S. A. Myers, J. Zhang, G. Kharebava, C. J. McClain, H. Y. Kim, S. R. Whittemore, L. Gobejishvili, and S. Barve. 2017. 'Phosphodiesterase 4b expression plays a major role in alcohol-induced neuro-inflammation', *Neuropharmacology*, 125: 376-85.

14. Backlund, P. S., H. F. Urbanski, M. A. Doll, D. W. Hein, M. Bozinoski, C. E. Mason, S. L. Coon, and D. C. Klein. 2017. 'Daily Rhythm in Plasma N-acetyltryptamine', *J Biol Rhythms*, 32: 195-211.

15. Baldauf, K. J., J. M. Royal, J. C. Kouokam, B. Haribabu, V. R. Jala, K. Yaddanapudi, K. T. Hamorsky, G. W. Dryden, and N. Matoba. 2017. 'Oral administration of a recombinant cholera toxin B subunit promotes mucosal healing in the colon', *Mucosal Immunol*, 10: 887-900.

16. Barnoud, T., M. L. Schmidt, H. Donninger, and G. J. Clark. 2017. 'The role of the NORE1A tumor suppressor in Oncogene-Induced Senescence', *Cancer Lett*, 400: 30-36.

17. Barve, S., S. Y. Chen, I. Kirpich, W. H. Watson, and C. McClain. 2017. 'Development, Prevention, and Treatment of Alcohol-Induced Organ Injury: The Role of Nutrition', *Alcohol Res*, 38: 289-302.

18. Beier, J. I. , and G. E. Arteel. 2017. 'Ethanol-Induced Hepatotoxicity.' in C. McQueen (ed.), *Comprehensive Toxicology* (Elsevier: Oxford).

19. Belmont, J., T. Gu, A. Mudd, and A. R. Salomon. 2017. 'A PLC-gamma1 Feedback Pathway Regulates Lck Substrate Phosphorylation at the T-Cell Receptor and SLP-76 Complex', *J Proteome Res*, 16: 2729-42.

20. Brown, K. J., A. S. Laun, and Z. H. Song. 2017. 'Cannabidiol, a novel inverse agonist for GPR12', *Biochem Biophys Res Commun*, 493: 451-54.

21. Browning, C. L., R. M. Speer, and Sr. Wise, J. P. 2017. 'Molecular Mechanisms of Chromium-Induced Carcinogenesis ' in A. Mudipalli and J. Zelikoff (eds.), *Essential and Non-Essential Metals: Carcinogens, Prevention and Therapeutics* (Springer International).

22. Browning, C. L., C. F. Wise, and J. P. Wise, Sr. 2017. 'Prolonged particulate chromate exposure does not inhibit homologous recombination repair in North Atlantic right whale (Eubalaena glacialis) lung cells', *Toxicol Appl Pharmacol*, 331: 18-23.

23. Browning, C. L., and J. P. Wise, Sr. 2017. 'Prolonged exposure to particulate chromate inhibits RAD51 nuclear import mediator proteins', *Toxicol Appl Pharmacol*, 331: 101-07.

24. Chen, W. Y., M. Wang, J. Zhang, S. S. Barve, C. J. McClain, and S. Joshi-Barve. 2017. 'Acrolein Disrupts Tight Junction Proteins and Causes Endoplasmic Reticulum Stress-Mediated Cell Death Leading to Intestinal Barrier Dysfunction and Permeability', *The American Journal of Pathology*, 187: 2686-97.

25. Doll, M. A., and D. W. Hein. 2017. 'Genetic heterogeneity among slow acetylator N-acetyltransferase 2 phenotypes in cryopreserved human hepatocytes', *Arch Toxicol*, 91: 2655-61.

26. Doll, M. A., R. A. Salazar-Gonzalez, S. Bodduluri, and D. W. Hein. 2017. 'Arylamine N-acetyltransferase 2 genotype-dependent N-acetylation of isoniazid in cryopreserved human hepatocytes', *Acta Pharm Sin B*, 7: 517-22.

27. Dubey, B., M. D. Jackson, C. Zeigler-Johnson, K. Devarajan, R. E. Flores-Obando, N. McFarlane-Anderson, M. K. Tulloch-Reid, W. Aiken, K. Kimbro, D. Z. Jones, L. R. Kidd, and C. Ragin. 2017. 'Inflammation polymorphisms and prostate cancer risk in Jamaican men: Role of obesity/body size', *Gene*, 636: 96-102.

28. Dupre, T. V., M. A. Doll, P. P. Shah, C. N. Sharp, D. Siow, J. Megyesi, J. Shayman, A. Bielawska, J. Bielawski, L. J. Beverly, M. Hernandez-Corbacho, C. J. Clarke, A. J. Snider, R. G. Schnellmann, L. M. Obeid, Y. A. Hannun, and L. J. Siskind. 2017. 'Inhibiting glucosylceramide synthase exacerbates cisplatin-induced acute kidney injury', *J Lipid Res*, 58: 1439-52.

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PHARMACOLOGY & TOXICOLOGY ABSTRACTS
Faculty with Primary Appointments and Students

Antimisiaris, Demetra

1. **Antimisiaris, D.,** Polivka, B., Folz R., Myers, J., Gopalraj R.J.. Are Protocols for Medication Holds Sufficient for Skin Prick Testing for Older Adults with Asthma? Innovation in Aging, Vol 1, Issue 1, July 2017, 909.
2. **Antimisiaris D**, Berry W. Machine learning to enhance Pharmacovigilance: can we predict Tamoxifen use adverse event risk? Poster presented August 2017; presented at Research Louisville
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Arteel, Gavin

National/International

1. Watson WH, Freedman JH, Young JL, Burke TJ, Arteel GE, States JC, Cai L, Lang AL, Poole LG, Warner ML and M. a. M. D. D. (Me^2DiC). Effects of chronic arsenic and cadmium on thiol-disulfide redox balance in the liver. *The Toxicologist* 156:267.
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11. Young JL, Burke TG, Freedman J, Watson WH, Cai L, Merchant ML, States CJ, Arteel GE (2017) Effects of Early Life Chronic Exposure to Arsenic and Cadmium on the Development of Adult Cardiometabolic Syndrome. *Research!Louisville annual meeting.*
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Beier, Juliane

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Ceresa, Brian

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Chen, Shao-Yu

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Freedman, Jonathan

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Fuqua, Joshua

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Gupta, Ramesh

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1. Aqil F, Jeyabalan J, Munagala R, Agrawal AK, Parker L & **Gupta, RC**. Exosomal Delivery of Small Molecules for the Management of Ovarian Cancer. Annual Conference of International Society of Extracellular Vesicles (ISEV-2017), May 18-21, 2017, Toronto, Canada.
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1. *****Mudd AM, Gu T, Jeyabalan J, Munagala R, Egilmez, N K, **Gupta RC**. Prevention and treatment of colorectal cancer and familial adenomatous polyposis (FAP) by bilberry-derived anthocyanidins Anthos). Abstract submitted for poster session at annual Research Louisville, Louisville, KY, 2017.
2. *****Kyakulaga AH, Aqil F, Mungala R & **Gupta, RC**. Withaferin A inhibits epithelial-to-mesenchymal transition (EMT) via regulation of SMAD2/3 and NFkB signaling in non-small lung cell cancer. Research Louisville 2017, Sep 11–15, 2017, Louisville, KY.

Hein, David

1. Furnish, M.M, Stepp, M.W., Doll, M.A., Chang, M.Y., and Hein, D.W.: Investigation of arylamine N-acetyltransferase 1 CRISR/Cas9 knockout in MDA-MB-231 cell lines via anoikis and invasion assays. 16th Annual Posters at the Capitol, Abstract #80, Frankfort, Kentucky, March 2017.

2. Stepp, M.W., Doll, M.A., and Hein, D.W.: Decreased human arylamine N-acetyltransferase 1 elevates cellular acetyl coenzyme A levels. ***Proceedings of the Annual Meeting of the Society of Toxicology***, Abstract #1488, Baltimore, Maryland, March 2017.

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4. Carlisle, S.M., Trainor, P.J., and Hein, D.W.: Identification of L-asparagine as a novel endogenous substrate for human arylamine *N*-acetyltransferase 1. Proceedings of the Annual Meeting for Experimental Biology, Chicago, Illinois, ***FASEB Journal*** April 2017 31:821.8

5. Carlisle, S.M, Klinge, C.M, Trainor, P.J., and Hein, D.W.: Human arylamine *N*-acetyltransferase 1 (NAT1) regulates cellular bioenergetics in MDA-MB-231 breast cancer cells. Symposium Metabolism: Disease Models and Model Organisms, Pennsylvania State University, University Park, Pennsylvania, May 2017.

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11. Gardner, J., Stepp, M.W., Wilkey, D., Merchant, M. and Hein, D.W.: Identification of the endogenous role of arylamine N-acetyltransferase 1 in cancer related cellular processes through proteomic analysis. Proceedings of Research!Louisville, Abstract MED-DT-9, Louisville, Kentucky, September, 2017.

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13. Kidd, L.R., Huntington-Moskos, L., and Hein, D.W.: EMOTE: Learn how to connect with your audience. ***Journal of Cancer Education*** 32 (Suppl 2): S46-S47, 2017.

14. Carlisle, S.M., Trainer, P.J., Doll, M.A., and Hein, D.W.: Transcriptomics evaluation of MDA-MB-231 breast cancer cells reveals NAT2 transcript production following NAT1 knockout. Ohio Valley Society of Toxicology, West Lafayette, Indiana, December 2017.

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Hood, Joshua

1. ***Hood JL** 1, Bardi GT 1, Petersen KE 2, Sant H 2, Gale BK 2, Cyclical Electrical Field-Flow Fractionation of Melanoma Exosomes: Enabling Unprecedented "Label-Free" Isolation of Exosome Subpopulations based on Biophysical Properties, U of L Dept. of Pharmacology & Toxicology & JGBCC1, U of Utah Dept. of Mech. Engineering & Espira Inc.2 Research!Louisville, Louisville, KY, September 2017
2. Petersen KE 1, 3, Bardi GT 2, Sant H 1, 3, Gale BK 1, 3, ***Hood JL** 2, Cyclical electrical field flow fractionation of melanoma exosomes. Espira Inc., Salt Lake City, UT1, University of Louisville, Department of Pharmacology and Toxicology and the James Graham Brown Cancer Center2, University of Utah, Department of Mechanical Engineering3, American Society of Exosomes and Microvesicles (ASEMV), October 2017

Kidd, La Creis

1. Kidd, L.R., Huntington-Moskos, Luz, Hein, D.W. *EMOTE: Learn How to Connect with Your Audience.* International Cancer Education Conference: Solving Cancer Education Challenges through Innovative, Interdisciplinary, Community and Global Collaboration, September 13-15, 2017, Cleveland, OH.
2. Suman, B., Jones-Reed, D.Z., Schmidt, M.L. Clark, G., Klinge, C., Barve, S., Kimbro, K., **Kidd, L.R.** Alteration of miR-186 expression modifies inflammatory markers in normal epithelial and prostate cancer cell models. 2017 Experimental Biology, April 22-26, Chicago, IL.
3. Suman, B., Jones-Reed, D.Z., Schmidt, M.L. Clark, G., Klinge, C., Barve, S., Kimbro, K., **Kidd, L.R.** Alteration of miR-186 expression modifies inflammatory markers in normal epithelial and prostate cancer cell models, 2017 AACR Annual Meeting, Washington, D.C.
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Lukashevich, Igor

1. New DNA-Launched Live Attenuated Vaccines for Venezuelan Equine Encephalitis Virus (VEEV). I. Tretyakova, B. Nickols, J. Jokinen, **I. Lukashevich**, P Pushko. *ASM BioThreats Meeting, Program and Abstracts, Washington, DC, Feb 6-8, 2017*

2. **Lukashevich IS**. Pan-Lassa fever vaccine for prevention and post-challenge applications. *16th Euro Global Summit Vaccines & Vaccinations, June 19-21, 2017, Paris, Abstracts*

3. Warner NL**,** Jokinen JD, **Lukashevich IS**. Replication of OW Mammarenaviruses in Polarized Epithelial Cells. *Research! Louisville. 2017, University of Louisville, Louisville, KY.*

4. Johnson D, Jokinen JD, **Lukashevich IS.** Characterization of defective interfering particles from ML29, a Lassa fever vaccine candidate. *Ghosh Immunology Symposium at Indiana State University, 2017, Abstract, Indiana*

5. Johnson D, Jokinen JD, **Lukashevich IS**. ML29 Defective Interfering Particles as a Model System to Study Mechanisms of Lassa Virus Persistence. *Research! Louisville. 2017, University of Louisville, Louisville, KY.*

Matoba, Nobuyuki

1. **Matoba N***. "Rapid Engineering and Production of Novel Biopharmaceuticals Using a Plant Viral Vector System" *The 16th Annual PepTalk- Plant-Based Expression and Synthetic Biology*, San Diego, CA, January 10 – 11, 2017. Invited Talk.
2. Royal J, Baldauf K, Yaddanapudi K, Dryden GW, **Matoba N**. "Oral Administration of a Cholera Vaccine Antigen Facilitates Colonic Mucosal Healing in a Murine Model of Colitis" *Digestive Disease Week 2017*, Chicago, IL, May 6 – 9, 2017.
3. Guo H, **Matoba N**, Hamorsky K, Royal J. "Development of PET imaging agents for targeting high-mannose-type glycans on cancer cells" *Society of Nuclear Medicine and Molecular Imaging Annual Meeting*, Denver, CO, June 10 – 14, 2017.
4. Royal J, Oh Y, Galandiuk S, **Matoba N**. "Epicertin, A Cholera Toxin B Subunit Variant, Enhances Intestinal Wound Healing in a mouse acute colitis model and human ulcerative colitis colon explants" *Research!Louisville*, University of Louisville, Sep 12, 2017.
5. Dent M, Guo H, Freels A, Telang S, **Matoba N**. "A Plant-Produced "Lectibody" Selectively Targets High-Mannose Glycans Overexpressed on the Surface of Cancer Cells: Implications for Novel Cancer Therapeutics/Diagnostics Development" *Research!Louisville*, University of Louisville, Sep 12, 2017.

Palmer, Kenneth

1. Henry Nabeta, Joseph Kouokam, **Kenneth E. Palmer** (2017) Activity And Stability Of Griffithsin- M78Q –An HIV Entry Inhibitor Microbicide In The Rectal Environment.

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2. **Kenneth E. Palmer**, Daniel Tuse and PREVENT U19 Team (2017) Progress on Griffithsin development for a first-in-humans clinical trial. *Plant Based Vaccines, Antibodies and Biologics Albufeira, Portugal, June 2017.*
3. Kevin Tyo, **Kenneth E. Palmer**, Jill Steinbach-Rankins (2017) Griffithsin based nanocarriers for the prevention of viral infections. *Research!Louisville 2017*

Siskind, Leah

1. Bushau-Sprinkle A., Conlin C., Barati M., Brier M., Coventry S., Dupre T.V., **Siskind L.J**., Rane M., and Lederer E. (2017) NHERF1 Deficiency Increases Susceptibility to Cisplatin-Induced Acute Kidney Injury. Amercian Society of Nephrology, November 1-5, 2017, New Orleans, LA.
2. Bushau-Sprinkle A., Conklin C., Barati M., Brier M., Coventry S., Dupre T.V., **Siskind L.J**., Rane M., and Lederer E. (2017) NHERF1 Deficiency Increases Susceptibility to Cisplatin-induced Acute Kidney Injury. Research!Louisville, September 12-15, 2017, Louisville, KY.
3. Bushau-Sprinkle A., Sherwood A., Conklin C., Barati M., Dupre T.V., **Siskind L.J.**, Gagnon K., Khundmiri S., and Lederer E. (2017) The Protective Role of NHERF1 in Cisplatin-induced Acute Kidney Injury. Experimental Biology, April 22-26, 2017, Chicago, IL.
4. Sharp C.N., Doll M. A., Dupre, T.V., Beverly, L. J., and **Siskind, L.J. (**2017) Worsened renal fibrosis in Kras4bG12D lung adenocarcinoma-bearing mice treated with repeated dosing of cisplatin may be EGFR-mediated. Southeastern Regional Lipid Conference. November 8-10. Cashiers, NC.
5. Sharp C.N., Doll M. A., Dupre, T.V., Beverly, L. J., and **Siskind, L.J. (**2017) Worsened renal fibrosis in Kras4bG12D lung adenocarcinoma-bearing mice treated with repeated dosing of cisplatin may be EGFR-mediated. American Society of Nephrology Kidney Week. October 31- November 5. New Orleans, LA.
6. Sharp, C.N., Doll, M.A., Dupre, T.V., Beverly, L.J., and Siskind, L.J. (2017) Worsened renal fibrosis in Kras4bG12D lung adenocarcinoma-bearing mice treated with repeated dosing of cisplatin may be EGFR-mediated. Research!Louisville. September 11-15. Louisville, KY.
7. Oropilla, G., Sharp, C.N., Doll, M.A., and Siskind, L.J. (2017) Strain differences in susceptibility to cisplatin-induced renal fibrosis. Research!Louisville. September 11-15. Louisville, KY.
8. Oropilla, G., Sharp, C.N., Doll, M.A., and Siskind, L.J. (2017) Strain differences in susceptibility to cisplatin-induced renal fibrosis. Southeastern Regional Lipid Conference. November 8-10. Cashiers, NC.
9. Saforo D, Shah P., Beverly L, and Siskind L. (2017) In Vitro 3-Dimensional Modeling Of Tumor Microenvironment Reveals Host/Tumor Influence On Progression In Non-Small Cell Lung Carcinoma. Gordon Research Conference: Fibronectin, Integrins and Related Molecules. January 29- February 3. Ventura, CA.
10. Saforo D, Shah P, Beverly L, and Siskind L. (2017) In Vitro 3-Dimensional Modeling Of Tumor Microenvironment Reveals Host/Tumor Influence On Progression In Non-Small Cell Lung Carcinoma. OVSOT Summer Meeting. July 14. Louisville, KY.
11. Saforo D, Shah P, Siskind L, and Beverly L. (2017) In Vitro 3-Dimensional Modeling Of Tumor Microenvironment In Non-Small Cell Lung carcinoma: Hypoxia and Cell derived Matrices. Salk Mechanisms and Models of Cancer Meeting. August 1-4. La Jolla, CA.

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13. Dupre, TV, Sharp, CN, Angel, P, Drake, R, Rodgers, J, Nowling, TK, Siow, D, Doll, MA, Judit Megyesi, J, Beverly, LJ, Zhang, W, Setchell, KDR, Sun, Y, Siskind, L, Knockdown of Ugcg induces kidney autoimmune disease. American Society of Nephrology, Kidney Week. November 2017.

Song, Zhao-Hui (Joe)

1. Laun AS, Reggio P and **Song ZH**. Cannabidiol, novel biased inverse agonist for GPR3. International Cannabinoid Research Society Conference, Montreal, Canada, June 2017.
2. **Song ZH** and Laun AS. GPR3 and GPR6, novel molecular targets for cannabidiol. International Cannabinoid Research Society Conference, Montreal, Canada, June 2017.
3. Mnpotra J, Laun AS **Song ZH**, Griffith A, Seltzman H, Hurst D and Reggio PH. Can a ligand switch CB1signaling from inhibitory (Gi) to stimulatory (Gs) G protein? International Cannabinoid Research Society Conference, Montreal, Canada, June 2017.
4. Isawi I, Morales P, Laun AS, Hurst D, **Song ZH** and Reggio PH. Structural relationship of the class A orphan GPCR, GPR6 with the cannabinoid CB1 and CB2 receptors. International Cannabinoid Research Society Conference, Montreal, Canada, June 2017.
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6. Laun AS and **Song ZH.** GPR3 and GPR6, novel molecular targets for cannabidiol. Research ! Louisville, September 2017
7. Brown KJ, Laun AS, **Song ZH.** The effects of various classes of cannabinoids on GPR12. Research ! Louisville, September 2017

States, Christopher

1. Wainscott NW, Hoffman JM, Taylor BF, Trent JO, States JC. Targeting the Anaphase Promoting Complex to Prevent Lung Cancer Cell Growth FASEB J April 2017 31:823.12
2. Hoffman JM, Wainscott NW, Taylor BF, Burlison JA, Trent JO, States JC. Targeting the Anaphase Promoting Complex to Prevent Lung Cancer Cell Growth FASEB J April 2017 31:823.12
3. States JC. Herbo-metallic Mixtures in Traditional Medicines. The Toxicologist, Supplement to Toxicological Sciences, 150 (1), Abstract #2729 , 2017.
4. Al-Eryani L, Waigel S, Jenkins S, Arumugam V, States JC. Cell Cycle Pathway Dysregulation in Human Keratinocytes during Chronic Exposure to Low Arsenite. The Toxicologist, Supplement to Toxicological Sciences, 150 (1), Abstract #1788, 2017.
5. Stocke C, Al-Eryani L, Gordon C, States VAR, Rai SN, Galandiuk S, Giri AK, States JC. Arsenic Induces Functional Changes of ZRANB2 and Expression of hsa-miR-186. The Toxicologist, Supplement to Toxicological Sciences, 150 (1), Abstract #1780, 2017. (student submitted w/o acknowledging other authors)
6. Watson WH, Freedman J., Young JL, Burke TJ, Arteel GE, States JC, Cai L, Lang A L,

Poole LG, Warner NL, and M. a. M. D. C. (Me2DiC). The Toxicologist, Supplement to Toxicological Sciences, 150 (1), Abstract #2133, 2017.

Abstracts of posters presented at regional and local meetings:

1. Hoffman JM, Bagah-Kognagba MJ, Taylor BF, Trent JO, States JC. Targeting the Major Regulator of Mitosis for Cancer Chemotherapy. Research!Louisville, University of Louisville, Louisville, KY, September 11-15, 2017
2. Knear-Bell RN, Al-Eryani L, States V, Rai SN, Pan J, Kalbfleish T, States JC. Arsenic-Induced Fluctuations in miR-186 Expression and ZRANB2 Directed Splicing. Research!Louisville, University of Louisville, Louisville, KY, September 11-15, 2017
3. Young JL, Burke TJ, Watson WH, Freedman J, Arteel GE, States JC. A Model to Study the Effects of Early Life Chronic Exposure to Arsenic and Cadmium on the Development of Adult Cardiometabolic Syndrome. Research!Louisville, University of Louisville, Louisville, KY, September 11-15, 2017
4. Bagah-Kognagba MJ, Hoffman JM, Taylor BF, Trent JO, States JC. The Anaphase Promoting Complex: A Novel Target In Cancer Therapy. Research!Louisville, University of Louisville, Louisville, KY, September 11-15, 2017
5. Hoffman JM, Bagah-Kognagba MJ, Taylor BF, Trent JO, States JC. Targeting the Major Regulator of Mitosis for Cancer Chemotherapy. Ohio Valley Chapter Society of Toxicology, Purdue University, December 1, 2017

Wise, John

1. Speer, R.M., Young, J.L., Martin Bras, M., Barandiaran, M., Marquez-D'Acunti, L., and **Wise, Sr., J.P.** A Comparison of the Cytotoxicity and Genotoxicity of Particulate and Soluble Hexavalent Chromium in Human and Leatherback Sea Turtle (*Dermochelys coriacea*) Lung Cells. Proceedings of the 8th Aquatic Animal Models of Human Disease Conference, 2017.

2. **Wise, Sr., J.P.** One Health: Integrated Metal Toxicity from Ecology, Environment and Animal to Human Health. 156(1): 1005, 2017.

3. Speer, R.M., Young, J.L., Wise, S.S., Raph, S.M., Martin Bras, M., Barandiarin, M., Marquez-D'Acunti, L., and **Wise, Sr., J.P.** Using Leatherback Sea Turtles (*Dermochelys coriacea*) as a Model Species for Metal Toxicology Research and Public Education in Vieques, Puerto Rico. Toxicological Sciences, 156(1): 263, 2017.

4. Wise, S.S., and **Wise, Sr., J.P.** Chronic Exposure to Particulate Chromate Induces Altered Growth Parameters and Chromosome Instability in Human Lung Cells. Toxicological Sciences, 156(1): 3455LB, 2017.

5. Zhou, X., Liu, K.J., and **Wise, Sr, J.P.** Cr(III) Intreacts with Acetylated Histones. Toxicological Sciences, 156(1): 263, 2017.

6. **Wise, Sr, J.P.**, Browning, C.L., Wise, S.S., Speer, R., and Lu, H. Homologous Recombination Repair in Chemical Carcinogenesis: Hexavalent Chromium Induces DNA Strand Breaks while Targeting Rad51 to Inhibit Their Repair. Presented at the 19th Annual Midwest DNA Repair Symposium, p. 16, Dayton, Ohio, May, 2017.

7. **Wise, Sr., J.P.**, Wise, C.F., Wise, Jr., J.P., Browning, C.L., Martino, J., Li Chen, T., Wise, S.S., and Wise, J.T.F.Insights into the Threat of Chromium on Whale Health: As a One Environmental Health Approach. Presented at the 56th Annual Meeting of the International Asociation of Aquatic Animal Medicine. Cancun, Mexico, May, 2017.

8. Hernandez-Ramon, E.E., **Wise, Sr., J.P.**, Si, N., Wise, S.S., Wise, Jr., J.P. and Poirier, M.C. Detection of polycyclic aromatic hydrocarbon-DNA adducts in epidermis from whales. First International Symposium of Environmental and Regulatory Toxicology and Fourth International Meeting of Pharmaceutical and Food Sciences (ECFA), Havana, Cuba, July, 2017.

9. **Wise, Sr., J.P.**, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Browning, C.L., Martino, J., and Li Chen, T. A Whale of a Tale: Lessons from Moby Dick's Descendants about Global Chromium Pollution. Presented at the 14th International Symposium on Recent Advances in Environmental Health Research, Jackson, Mississippi, September, 2017
10. Wise, S.S., and **Wise, Sr., J.P.** Chronic exposure to particulate chromate induces altered growth parameters and chromosome instability in human lung cells. Presented at the annual meeting of the Environmental Mutagenesis and Genomics Society, Raleigh, North Carolina, September, 2017, Environmental and Molecular Mutagenesis, 58 (S1): S48, 2017.

11. **Wise, Sr., J.P.**, Wise, S.S., Martino, J., and Xie, H. Centrosomes in Chemical Carcinogenesis: Chromosomal Instability, Centrosome Amplification, and Premature Centriole Disengagement Are Key Steps in the Carcinogenic Mechanism of Hexavalent Chromium. Proceeding of the Presented at the EMBO conference: Centrosomes and Spindle Pole Bodies, p.221, Heidelberg, Germany, September, 2017.

12. **Wise, Sr., J.P.**, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Browning, C.L., Martino, J., and Li Chen, T. Of Whales and Men: Using a One Health Perspective to Understanding Chromium Pollution in Great Whales. Presented at the annual meeting of the Society of Environmental Toxicology and Chemistry (SETAC), Minneapolis, Minnesota, November, 2017.

13. Speer, R.M., Browning, C.L. and **Wise, Sr., J.P.** Chromate-Induced Suppression of E2F1 and RAD51 in the Homologous Recombination Response. Presented at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting, December, 2017.

14. Croom-Pérez, T.J., Toyoda, J.H., Wise, S. S. and **Wise Sr., J. P.** Chronic Exposure to Particulate Hexavalent Chromium Induces Centrosome Abnormalities and Disrupts Mitosis

in both Sea Turtle and Alligator Primary Lung Cells. Presented at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting, December, 2017.

15. Raph, S., Wise, S.S. and **Wise Sr., J.P.** One Environmental Health: Cytotoxicity and Genotoxicity of Hexavalent Chromium in American Alligator (Alligator mississippiensis). Presented at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting, December, 2017.

16. Speer, R.M., Browning, C.L. and **Wise, Sr., J.P.** Chromate-Induced Suppression of E2F1 and RAD51 in the Homologous Recombination Response. Presented at Research!Louisville, University of Louisville, September 2017.

17. Raph, S., Wise, S.S. and **Wise Sr., J.P.** One Environmental Health: Cytotoxicity and Genotoxicity of Hexavalent Chromium in American Alligator (*Alligator mississippiensis*). Presented at Research!Louisville, University of Louisville, 2017.

18. Lu, H., Browning, C.L. and **Wise Sr., J. P.** Autophagy Does Not Play A Main Role in Rad51 Dysfunction after Prolonged Cr(VI) Exposure in Human Lung Cells. Presented at Research!Louisville, University of Louisville, 2017.

19. Wise, S.S. and **Wise, Sr., J.P.** Cells that escape Cr(VI)-induced cell death exhibit chromosome instability. Presented at Research!Louisville, University of Louisville, 2017.

20. McBride, D.E., Perez, A.A., Raph S.M., Speer R.M., Croom-Perez T.J., Wise S.S. and **Wise Sr., J. P.** A One Health Case Study: Comparison of DNA Damage Response to Hexavalent Chromium in Alligator and Human Lung Fibroblasts. Presented at Research!Louisville, University of Louisville, 2017.

21. Toyoda, J.H., Martino, J., Speer, R.M. and **Wise Sr., J.P.** Mechanisms of Hexavalent Chromium-Induced Centriole Disengagement and Centrosome Amplification. Presented at Research!Louisville, University of Louisville, 2017.

22. Pérez, A. A., Wise, S. S. and **Wise Sr., J. P.** The Cytotoxicity and Genotoxicity of Particulate Hexavalent Chromium in the Normal Human Lung Fibroblasts (NHLF) Primary Cell Line. Presented at Research!Louisville, University of Louisville, 2017.

23. Croom-Pérez, T.J., Martino, J., Wise, S. S. and **Wise Sr., J. P.** Chronic Exposure to Particulate Hexavalent Chromium Induces Centrosome Abnormalities in Primary Human Lung Cells. Presented at Research!Louisville, University of Louisville, 2017.

Wise, Sandra

1. Speer, R.M., Young, J.L., Wise, S.S., Raph, S.M., Martin Bras, M., Barandiarin, M., Marquez-D'Acunti, L., and **Wise, Sr., J.P.** Using Leatherback Sea Turtles (*Dermochelys*

coriacea) as a Model Species for Metal Toxicology Research and Public Education in Vieques, Puerto Rico. Toxicological Sciences, 156(1): 263, 2017.

2. Wise, S.S., and **Wise, Sr., J.P.** Chronic Exposure to Particulate Chromate Induces Altered Growth Parameters and Chromosome Instability in Human Lung Cells. Toxicological Sciences, 156(1): 3455LB, 2017.

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4. **Wise, Sr., J.P.**, Wise, C.F., Wise, Jr., J.P., Browning, C.L., Martino, J., Li Chen, T., Wise, S.S., and Wise, J.T.F.Insights into the Threat of Chromium on Whale Health: As a One Environmental Health Approach. Presented at the 56th Annual Meeting of the International Asociation of Aquatic Animal Medicine. Cancun, Mexico, May, 2017.

5. Hernandez-Ramon, E.E., **Wise, Sr., J.P.**, Si, N., Wise, S.S., Wise, Jr., J.P. and Poirier, M.C. Detection of polycyclic aromatic hydrocarbon-DNA adducts in epidermis from whales. First International Symposium of Environmental and Regulatory Toxicology and Fourth International Meeting of Pharmaceutical and Food Sciences (ECFA), Havana, Cuba, July, 2017.

6. **Wise, Sr., J.P.**, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Browning, C.L., Martino, J., and Li Chen, T. A Whale of a Tale: Lessons from Moby Dick's Descendants about Global Chromium Pollution. Presented at the 14th International Symposium on Recent Advances in Environmental Health Research, Jackson, Mississippi, September, 2017

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8. **Wise, Sr., J.P.**, Wise, S.S., Martino, J., and Xie, H. Centrosomes in Chemical Carcinogenesis: Chromosomal Instability, Centrosome Amplification, and Premature Centriole Disengagement Are Key Steps in the Carcinogenic Mechanism of Hexavalent Chromium. Proceeding of the Presented at the EMBO conference: Centrosomes and Spindle Pole Bodies, p.221, Heidelberg, Germany, September, 2017.

9. **Wise, Sr., J.P.**, Wise, Jr., J.P., Wise, J.T.F., Wise, C.F., Wise, S.S., Browning, C.L., Martino, J., and Li Chen, T. Of Whales and Men: Using a One Health Perspective to Understanding Chromium Pollution in Great Whales. Presented at the annual meeting of the Society of Environmental Toxicology and Chemistry (SETAC), Minneapolis, Minnesota, November, 2017.

10. Croom-Pérez, T.J., Toyoda, J.H., Wise, S. S. and **Wise Sr., J. P.** Chronic Exposure to Particulate Hexavalent Chromium Induces Centrosome Abnormalities and Disrupts Mitosis in both Sea Turtle and Alligator Primary Lung Cells. Presented at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting, December, 2017.

11. Raph, S., Wise, S.S. and **Wise Sr., J.P.** One Environmental Health: Cytotoxicity and Genotoxicity of Hexavalent Chromium in American Alligator (Alligator mississippiensis). Presented at the Ohio Valley Chapter of the Society of Toxicology (OVSOT) annual meeting, December, 2017.

12. Raph, S., Wise, S.S. and **Wise Sr., J.P.** One Environmental Health: Cytotoxicity and Genotoxicity of Hexavalent Chromium in American Alligator (*Alligator mississippiensis*). Presented at Research!Louisville, University of Louisville, 2017.

13. Wise, S.S. and **Wise, Sr., J.P.** Cells that escape Cr(VI)-induced cell death exhibit chromosome instability. Presented at Research!Louisville, University of Louisville, 2017.

14. McBride, D.E., Perez, A.A., Raph S.M., Speer R.M., Croom-Perez T.J., Wise S.S. and **Wise Sr., J. P.** A One Health Case Study: Comparison of DNA Damage Response to Hexavalent Chromium in Alligator and Human Lung Fibroblasts. Presented at Research!Louisville, University of Louisville, 2017.

15. Pérez, A. A., Wise, S. S. and **Wise Sr., J. P.** The Cytotoxicity and Genotoxicity of Particulate Hexavalent Chromium in the Normal Human Lung Fibroblasts (NHLF) Primary Cell Line. Presented at Research!Louisville, University of Louisville, 2017.

16. Croom-Pérez, T.J., Martino, J., Wise, S. S. and **Wise Sr., J. P.** Chronic Exposure to Particulate Hexavalent Chromium Induces Centrosome Abnormalities in Primary Human Lung Cells. Presented at Research!Louisville, University of Louisville, 2017.

RESEARCH GRANTS ACTIVE

Antimisiaris, Demetra

Agency/Number	Title	Role	PI	Project Period	Budget Award
NSF/1639609	Aware Access Seed Program	Inven.	X	July 2017-18	$4000
NSF/1450370	iCORE Seed Program	Inven.	X	July 2017-18	$2500

NIH RO1-1R01AG047297-01A1	Asthma in Older Adults: Identifying Phenotypes and Factors Impacting Outcomes	Co-I		July 2015-2020	$2.3 million/5 yrs
HRSA-15-057	Geriatric Workforce Educational Program	Co-I		July 2015-18	$780,000/3yrs
KIPDA -1568	KIPDA (KY area agency on aging) MTM Patient Access Grant		X	July 2017-18	$2,140.00

Arteel, Gavin

Agency/Number	Title	Role	PI	Project Period	Award Directs
T32 ES011564	UofL Environmental Health Sciences Training Program	PI	Arteel	07/01/16-06/30/21	$1,918,730
U01 AA021901	Novel therapies in alcoholic hepatitis University of Louisville	Co-I	McClain	10/01/12-09/31/17	$1,036,553
R01 AA021978	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	PI	Arteel	02/01/14-01/31/19	$1,125,000
R01 AA021978S1 (minority supplement)	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	Mentor	Hudson	09/01/15-01/31/18	$83,418
P50 AA024337	University of Louisville Alcohol Research Center	Pilot Core Director, Component Co-I; Education Co-director	McClain	12/01/15-11/30/20	$6,006,300
P20 GM113226	Hepatobiology and Toxicology COBRE	Core Dir./mentor	McClain	12/01/14-11/30/19	$7,500,000
P42 ES023716	Environmental exposure and cardiometabolic disease	Education Core Director	Srivastava	09/01/17-03/31/22	$9,245,617
PhytoSciences LLC	Research agreement	PI	Arteel	03/17/17-07/31/17	$18,382

Beier, Juliane

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIDDK/ K01 DK096042-01	Enhancement of NAFLD risk by vinyl chloride: interaction of gut-liver-adipose axis	PI	Beier	04/13-03/18	$447,967
NIDDK/ R03 DK107912	Vinyl chloride-NAFLD interaction	PI	Beier	01/16-12/17	$130,000
P20 GM113226	Hepatobiology and Toxicology COBRE	Project PI	McClain	12/16-11/21	$7,500,000
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Arteel	04/16-03/21	$2,183,597
P42 ES023716	Environmental exposure and cardiometabolic	Co-I	Srivastava	04/17-03/22	$9,245,617
R35 ES028373 (RIVER)	Environmental Liver Disease	Co-I	Cave	07/17-06/25	$4,407,008

Ceresa, Brian

Agency/Number	Title	Role	PI	Project Period	Budget Award
NEI EY027032	Chemical Optimization of cCbl Antagonists to promote corneal wound healing	PI (25%)	Ceresa	8/1/2016 – 7/31/18	$192,500
Sustain Biotechnology OIEB171331	Collagen Mimetic Peptides as mediators of Corneal wound Healing	PI (10%)	Ceresa	11/13/7-7/13/18	$75,000
NEI EY026509	Summer Vision Sciences Training Program	PI (5%)	Ceresa	7/1/2017 – 5/31/22	$37,859
NIH/NCI R01 CA193220	Ubiquilin1 regulates EMT and metastasis of human lung adenocarcinoma	Co-I (1%)	Beverly	8/1/15 - 7/31/20	$352,275

Chen, Shao-yu

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIAAA/**RO1** AA021434	Role of microRNA in ethanol-induced apoptosis and teratogenesis	PI	Shao-yu Chen	07/2013 – 06/2018	$1,125,000 (direct cost)
NIAAA/**RO1**	Role of Siah1 in ethanol-	PI	Shao-yu	07/2012 –	$1,125,000

AA020265	induced apoptosis and teratogenesis		Chen	06/2018	(direct cost) (NCE)
NIAMS/**RO1** AR063630	Coordinated cytoskeletal dynamics in skin somatic stem cells	Subcontract PI	Xiaoyang Wu	09/2013 – 08/2018	$1,125,000 (direct cost) $125,000 direct cost for subcontract
NIAAA/**P50** Alcohol Center grant	The role of nutrition in the development/progression of alcohol-induced organ injury. Project 3: Sulforaphane-mediated epigenetic modulation of ethanol-induced apoptosis and teratogenesis	Project 3 PI	Craig McClain	05/2016 – 04/2021	$8,000,000.000 (Total Budget) Project 3 budget: $750,000.00 (Direct cost)
NIEHS/**T32**	UofL environmental health sciences training program	Faculty mentor	Gavin Arteel	07/2016 – 06/2021	$2,311,000.00
NIEHS/**T35**	Summer Environmental Health Sciences Training Program	Faculty mentor	Prough	04/2016 03/2021	$190,000.00
NCI/**R25**	Cancer Education Program for Professional and Undergraduate	Faculty mentor	David Hein/ Creis	04/2017 – 03/2022	$1,620.000

Clark, Geoffrey

Agency/Number	Title	Role	PI	Project Period	Budget Award
NCI/R01 CA133171-01A2	The Role of the Ras effector Nore1a in tumor suppression	PI	Clark	2010-2017	900K
NIH Eureka Award/ 1R01CA153132-01	Oncopigs as a better model for human cancer	PI	Clark	2010-2017	800K
NIH Excite Award	A first –in-class RalGEF inhibitor as an anti-Ras drug.	PI	Clark	2016-2018	200K
Jewish Hospital Fund for Excellence	The development of a novel small molecule inhibitor of lung cancer	PI	Clark	2015-2017	250K

KLCRP	Novel small molecule inhibitors of the Ras Oncoprotein for Lung cancer	PI	Clark	2016-2018	150K

Freedman, Jonathan

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIEHS R01ES028102	The Role of Autophagy in Cadmium Induced Prostate Carcinogenesis	PI	Freedman	12/01/2017 – 11/30/20	1,934,000 (total)
UofL SoM	Metals and Carcinogenesis	PI	Freedman/ Damodar	06/2016 -	$66,761
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 Sciences Training Program	Member	Prough	04/2016 -	$190,00 ($175,000 direct)
NCI/R25 CA134283	University of Louisville Cancer Education Program	Member	Hein	09/2015 - 08/2016	$293,984

Fuqua, Joshua

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIH/NIAID U19AI113182	Griffithsin-based rectal microbicides for Prevention of Viral Entry (PREVENT)	Program Manager	Palmer	07/01/2014 – 06/30/2019	$14,703,126

Gupta, Ramesh

Agency/Number	Title	Role	PI	Project Period	Budget Award

Dept. of Defense	Prevention & Treatment of Breast Cancer by Blueberry	PI	Gupta	09/14-08/18	$1,033,053 (Total)
NCI SBIR Phase II	Exosomal Drug Delivery	Multi-PI	Spencer Gupta	09/17-09/19	$1,700,000 (Total)
Helmsley Grant – Project Award	Plant-based Cancer Therapeutics	PI	Gupta	06/17-06/18	$100,000 (Directs)

Hein, David

Agency/ Number	Title	Role	PI	Project Period	Award
NCI R25- CA134283	University of Louisville Cancer Education Program	PI	Hein	09/14/11-08/31/17	$1,543,610
NCI R25- CA134283	University of Louisville Cancer Education Program	Contact PI	Hein & Kidd	04/01/17-03/31/22	$1,593,000
NIEHS T35- ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	05/15/16 – 03/31/21	$186,540
NIH (P20- GM113226)	Hepatobiology and Toxicology COBRE	Director for faculty career development; project lead renovation & alternations	McClain	06/10/16 – 03/31/21	$11,530,145
NIEHS T32 ES011564	UofL Environmental Health Sciences Training Program	Co-I and mentor	Arteel	07/01/16 – 06/31/21	$2,314,825
NIH R15 HD087911	The interaction between NAT2 acetylator status and exposure to tobacco smoke on ovarian reserve and in vitro fertilization outcomes	Co-I	Taylor	07/08/16 - 06/30/19	$460,018

NIH (U19- AI103458)	Griffithsin-based rectal microbicides for PREvention of Viral Entry (PREVENT)	Co-mentor for faculty diversity supplement	Palmer	07/01/16-06/30/17	$127,974
NIEHS (P42-ES023716)	Environmental Exposure and Cardiometabolic Disease	Co-Leader, Training Core	Srivastava	09/01/17 – 03/31/22	$6,700,000

Hood, Joshua

Agency/Number	Title	Role	PI	Project	Budget Award
NIH Molecular Targets Phase III COBRE, 5P30GM106396-05 (D. Miller)	Activating Macrophages with Melittin Loaded Exosomes to treat Melanoma	PI	Hood	7/1/17 - 6/30/18	$75,000
2 R25 CA134283-06A1	University of Louisville Cancer Education Program	Faculty	Hein, Kidd	4/1/17 - 3/31/22	pending
NIH NIGMS R21 GM107894-03	Continuous Separation of Melanoma Exosomes using Field-Flow Fractionation	MPI	Hood (U of L), Gale (U of U)	1/1/15 - 7/31/17	$54,480 (Direct)
NIH SBIR Contract Phase 1, HHSN261201600054C	Continuous exosome and oncosome separations using a modified SPLITT system	MPI	Hood (U of L), Gale, Petersen, (Espira	9/27/16 - 9/18/17	$50,001
NIH NCI R21 CA198249-01	A Novel Vaccination Stratagem for Lung Cancer	Collaborator	Yaddanapudi	7/1/15 - 6/30/17	N/A

Kidd, LaCreis

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIH, NIEHS T32-ES011564	UofL Environmental Health Science Training Program	Mentor	Arteel	04/1/16-3/31/21	$2,310,776

R25-CA134283-06	University of Louisville Cancer Education Program	Co-I, Cancer Education Coordinator, Mentor	Hein/ Kidd	9/1/17-08/31/21	$1,620,000

Kouokam, Calvin

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIAID/3U19AI113182-03S1	Safety and efficacy of plant produced Griffithsin in the context of colorectal pathologies.	Co-I	Kenneth E. Palmer	July 2017-June 2018	NCE
CPM/BRU	Laboratory start up	PI	J. Calvin Kouokam	July 2017-June 2020	$645,425

Lukashevich, Igor

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIH/NIAID 1R01 AI093450-06	Development of New Bivalent Cross-Protective Arenaviral Vaccines	Contact PI	MPI	04/01/2011-03/31/2018 (NCE)	$3,964,538
NIH/2R44AI094863-03A1	Novel DNA-launched Attenuated Vaccine for VEE Virus, SBIR Phase II	PI, sub	Pushko	02/01/2016-01/31/2019 (NCE)	$615,000

Matoba, Nobuyuki

Agency/Number	Title	Role	PI	Project Period	Budget Award

UofL ExCITE Product Development Grant Cycle 2 (NIH U01 HL127518 ExCITE Program)	Oral Solid Dosage Formulation of Cholera Toxin B Subunit	Co-PI	Hamorsky/ Matoba	2/1/16 – 1/31/18	$200,000 (total direct costs)
UofL ExCITE Product Development Grant Cycle 4 (NIH U01 HL127518 ExCITE Program)	Avaren-Fc lectibody for liver graft protection against hepatitis C virus infection	Contact PI	Matoba/ Hamorsky	3/1/17 – 2/28/19	$200,000 (total direct costs)
UofL ExCITE Product Development Grant Cycle 5 (NIH U01 HL127518 ExCITE Program)	CTBp for oral mucositis treatment	Contact PI	Matoba/ Hamorsky	7/1/17 – 6/30/18	$100,000 (total direct costs)
Brown Cancer Center Helmsley Charitable Trust Program	Plant-made *N*- mannosylated cholera toxin B subunit as a novel vaccine scaffold	PI	Matoba	11/1/15 –6/30/18	$225,000 (total direct costs)
NIH NIAID/ U19 AI113182 Core C	Griffithsin-based Rectal Microbicides for PREvention of Viral ENTry (PREVENT) Core C: Pharmacokinetics and Pharmacodynamics Core	PI	Matoba	7/01/14 – 6/30/19	$471,593 (FY total cost)
Molecular Targets Phase IV CoBRE Pilot Project (NIH NIGMS/ P30GM106396)	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI	Matoba	7/01/16 – 6/30/17	$75,000 (total direct costs)

Palmer, Kenneth

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIH/NIAID U19AI113382	Griffithsin-based rectal microbicides for Prevention of Viral Entry (PREVENT)	PI & PD		07/01/2014 – 06/30/2019	$14,703,126
NIH/NIAID 3U19AI113382-01	Griffithsin-based rectal microbicides for Prevention of Viral Entry (PREVENT) URM Faculty Supplement	PI	Kouokam (URM mentee)	07/01/2016 – 06/30/2017	$127,494

NIH/NIHLB U01HL127518	The EXCITE Program: Expediting Commercialization, Innovation, Translation and Entrepreneurship	Co-I	Bates, Miller, Krentsel	04/01/2015 – 03/31/2018	$3,000,000
Leona M and Harry B Helmsley Charitable Trust	Broad spectrum antivirals	PI of sub	Miller	07/01/2016 – 06/30/2018	$260,000
Jewish Heritage Fund for Excellence	Griffithsin based nanocarriers for prevention of viral infections	Co-I	Steinbach-Rankins	08/01/2016 – 07/31/2018	$300,000

Siskind, Leah

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIH/NIDDK	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 DC)
Kentucky Lung Cancer Program	Whole genome CRISPR/Cas9 screens to identify novel vulnerabilities of human lung cancer cells	**PI**	Siskind Beverly Clark	01/01/2016 – 6/01/18	$65,000 (Annual DC)
Kentucky Lung Caner Program	Developing pigs as models of lung cancer progression and therapeutics	**PI**	Siskind Beverly Clark	04/01/2016 – 3/31/18	$200,000 total DC
Jewish Heritage Fund for Excellence Research Enhancement Grant	Identifying physiologically relevant RAS synthetic lethal components	**PI**	Siskind	12/1/2016 – 11/30/2017	$50,000 total DC
The Research Foundation for SUNY	Validation of neutral ceramidase (NCD) as a novel target for therapy of ischemia and reperfusion-induced acute kidney injury	**PI**	Siskind	2/2017 – 7/2018	$350, 207 ($233,471 direct costs and $116,736 indirect costs)

Song, Zhao-Hui (Joe)

Agency/Number	Title	Role	PI	Project Period	Budget Award
R25CA134283-06	University of Louisville Cancer Education Program	Faculty Mentor	David W. Hein and La Creis R. Kidd	9/1/2016 - 8/31/2021	$1,620,000
R01DA003934	Molecular Determinants of Cannabinoid Activity	PI, U of L subcontract	P Reggio	4/1/2015 - 3/31/2020	$ 375,000

States, Christopher

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIEHS/ 1R01ES027778-01A1	MECHANISM FOR ARSENIC INDUCED CARCINOGENESIS	PI	States	8/1/2017 – 7/31/2022	$2,056,394
NIEHS/5R21ES023627-02	DIFFERENTIAL MIRNA EXPRESSION & PROGRESSION OF ARSENIC INDUCED SKIN CANCERS	PI	States	7/1/2015 – 6/30/2018	$422,000 (in NCE)
KLCRP/ na	Targeting the anaphase promoting complex as lung cancer chemotherapy	PI	States	5/1/2015 – 4/30/2018	$150,000 (in NCE)
NIGMS/ 1P20GM113226-01	Hepatobiology and Toxicology COBRE	Faculty Mentor	McClain	06/10/2016 –	$11,000,000

				03/31/2021	

Wise, John

Agency/Number	Title	Role	PI	Project Period	Budget Award
NIEHS/R01 ES016893	Particulate Cr(VI) Toxicology in Human Lung Epithelial Cells and Fibroblasts	PI	Wise	07/01/08 - 12/31/18	$3,090,764
JHFE Research Enhancement Grant	Mechanisms of Particulate Hexavalent Chromium-Induced Centrosome Abnormalities in Human Lung Cells	PI	Wise	05/01/16-04/30/17	$50,000
NIEHS/T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Arteel	04/01/16-03/31/21	$2,183,597
NCI/R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/01/16-08/31/21	$1,500,000
NIGMS/P20GM113226	Hepatobiology & Toxicology COBRE	Mentor	McClain	06/10/16-03/31/21	$11,250,000
NIEHS/T35ES014559	Summer Environmental Health Sciences Training Program	Mentor	Prough	04/01/06 – 04/30/21	$516,565

Wise, Sandra

Agency/Number	Title	Role	PI	Project Period	Budget Award
NCI/R25CA134283	University of Louisville Cancer Education Program	Mentor	Hein and Kidd	09/01/16-08/31/21	$1,500,000
NIEHS/1RO1ES02778-01A1	Mechanism for arsenic induced carcinogenesis	Co-PI	States	07/01/17-06/30/22	$2,488,085

RESEARCH GRANTS SUBMITTED

Arteel, Gavin

Agency/Number	Title	Role	PI	Project Period (requested)	Award F&A
R01 HL133798	Age-dependent matrisome changes predispose to injury-induced fibrosis	MPI	Roman, Arteel, Siskind, Beverly	07/01/2018-06/30/2022	$747,202
NIAAA F31	ECM proteins as novel drug targets and biomarkers for alcohol-induced organ injury	Mentor	Dolin	07/01/2018-06/30/2020	$7,385

Beier, Juliane

Agency/Number	Title	Role	PI	Project Period	Budget Request
F31 ES028080	Vinyl chloride-diet interactions: potential roles of autophagy and energy management	Mentor	Lang	7/16-6/20	$130,728

Ceresa, Brian

Agency/Number	Title	Role	PI	Project Period	Budget Request
NEI	Chemical Opitmization of c-Cbl Antogonists for Corneal Would Healing	PI (30%)	Ceresa	4/1/2018 - 3/30/23	$1,534,097
Dept of Defense	Chemical Opitmization of c-Cbl Antogonists for Corneal Would Healing	PI (30%)	Ceresa	7/1/2018 - 6/30/21	$1,925,000

Clark, Geoff

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIH/R01	Novel Small molecule inhibitors of the RAS oncoprotein for pancreatic cancer.	PI	Clark	2018-2023	1.25 Million Direct

NIH/R01	A clinically relevant model of small cell lung carcinoma and therapeutic response	Co-PI	Beverley	2018-2023	2.5 Million Direst
NIH/R01	The Ras/RALGEF pathway as a therapeutic Target in Pancreatic cancer	PI	Clark	2018-2023	1,25 million Direct
NIH/R01	Novel Inhibitors of NF1 disease	PI	Clark	2018-2022	1.824 Million Direct
NIH/R21	Novel Pan-RALGEF inhibitors to block Pancreatic cancer	PI	Clark	2018-2020	275K Direct
CDMRP	RASSF1A as a collateral lethal for AS1411 in kidney cancer	PI	Clark	2018-2019	75K direct
NIH/R01	Novel Small Molecule Inhibitors of the RAS Oncoprotein	PI	Clark	2018-2023	1.25 Million Direct
NIH/U01	Extrinsic selective pressures dictate intrinsic cancer biology phenotypes	Co-PI	Beverly		3.9 million
NIH/R01	Using physiological conditions to uncover RAS synthetic lethal targets	Co-PI	Siskind		3.4 million
NIH/R21	Developing a porcine model of lung cancer	Co-PI	Beverly	2018-2020	275K Direct
CDMRP Ovarian Cancer	Novel inhibitors of the Ral pathway for ovarian cancer	PI	Clark	2018-2020	384K Direct
CDMRP Lung	That Sinking Feeling	PI	Clark	2019-2019	100K Direct
Kidney cancer Cure	The RalGEF pathway as a novel target for kidney	PI	Clark	2017-2019	100K Direct
NIH ExCite program	Generation of best in Class RAS inhibitors	PI	Clark	2018-2019	100K Direct
CDMRP Neurofibromatosis	Novel Inhibitors of NF1 disease	PI	Clark	2018-2021	469K

Freedman, Jonathan

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIEHS/R01 ES026628-01A1	Contribution of Environmental Toxicants in the Development of Metabolic Disease	PI	Freedman, Cai	8/01/2018 – 7/31/2023	$1,913,000 Submitted
Simon's Foundation SFARI Pilot Project	Identification of Novel Genetic Loci Linking Zinc Deficiency to ASD;	PI	Freedman/ Barne	8/01/2018 – 7/31/2020	$330,000 Submitted
NIH/F31 NHLBI	ECM proteins as novel drug targets and biomarkers for alcohol induced organ injury	Mentor	Dolin		Submitted
Simons Foundation Autism Research Initiative 2017 RFA	Multi-system investigation of environ-mental factors contributing to ASD	PI	Freedman		$1,252,251
NIH/1 R01 HD094005-01	Impact of Obesity and Zinc Deficiency on Autism Spectrum Disorder	PI	Freedman/ Barnes/	09/01/2017 - 08/31/202	$1,252,251
American Diabetes Association	Brain white matter deficits and myelin plasticity in high-fat diet induced obesity	Co-PI	Cai	01/01/2018 - 13/31/202	$345,000

Fuqua, Joshua

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIH/NIAID R-01 AI 131974	Engineering, Design, and Optimization of Griffithsin as a Systemic HIV Therapy	MPI	Griswold Bailey-Kellogg Fuqua Palmer	04/01/2018 – 03/31/2023	$3,931,589 Scored, pending Council Review
NIH/NIAID R25 AI 140450	University of Louisville Emerging and Re-emerging Infectious Diseases Research Education Program	Key Personnel/ Mentor *	Lawrenz Palmer Hopp	07/01/2018 – 06/30/2023	$1,333,938 Pending IRG review

Gupta, Ramesh

Agency/Number	Title	Role	PI/MPIs	Project Period	Budget Request
NCI SBIR Phase II	Exosomal Drug Delivery	Multi-PI	Gupta Spencer	10/17- 9/19	$1,999,000
NCI SBIR Phase II	Sustained Target Delivery for Prevention and treatment of Cervical Pathologies	Multi-PI	Gupta; Spencer	4/18- 03/20	$1,998,000
NCI R01	Novel Adjuvent Therapy for Breast Cancer	PI	Gupta	7/18-6/23	$1,925,000
NCI R01	Nano-Anthos for Prevention and Treatment of Breast cancer	PI	Gupta	04/18-03/23	$1,925,000
DoD	Smart Exosomes for oral delivery of paclitaxel: An effective approach for efficient management of breast cancer.	Mentor	Agrawal	04/18-11/21	$299,750

Hein, David

Agency/ Number	Title	Role	PI	Project Period (requested)	Budget Request
NIH R61/R33	Assessment of Griffithsin-containing nanoparticles and electrospun fibers as multipurpose formulations for the prevention of sexually transmitted infections and unplanned pregnancies.	Mentor	Kouokam	01/01/2018 – 12/31/2022	$2,204,104
NIGMS/ 1 U54 GM128728-01	University of Louisville's Clinical and Translational Sciences Institute	Co-Leader Faculty Development Core	Klein	07/01/2018 – 06/30/2023	$20,000,000

NIH R25 GM123933	Bridge to Undergraduate Success (BUS)	Internal Advisory Committee	Kakar & Joshua	07/01/17-06/30/22	$ 1,486,242.00
NIH T32 (received priority score of 17)	Current Trends in Stem Cell Therapeutics	Internal Advisory Committee	Ratajczak & Kakar	07/01/17-06/30/22	$1,486,242
MHMRC APP1142256	The genetic and epigenetic regulation of the drug metabolising enzyme arylamine N-acetyltransferase in breast cancer	Chief Investigator	Minchin (University of Queensland)	01/01/2018 to 12/31/2022	One million AUD
MHMRC APP1144318	The drug metabolising enzyme arylamine N-acetyltransferase 1 regulates protein acetylation in vitro and in vivo: a novel pathway in cancer cell survival	Chief Investigator	Butcher (University of Queensland)	01/01/2018 to 12/31/2021	One million AUD

Hood, Joshua

Agency/Number	Title	Role	PI	Project	Budget Request
JGBCC Molecular Targets CoBRE Phase V Pilot	Activating Macrophages with Melittin Loaded Exosomes to treat Melanoma	PI	Hood	7/1/17 - 6/30/18	$75,000 (Direct)
DOD: CA160529	Targeting phenotype switching via tumor- derived exosomes to inhibit melanoma progression	Co-I	McMasters	10/1/17-9/30/19	4% effort
U of L Basic Grant Program	Evaluating the Ability of Melanoma-Derived Exosomes to Induce Pro-Tumor Macrophages	PI	Hood	8/1/17-7/31/18	$25,000
U of L EVPRI internal grant program	Enhancing the Translational Potential of Adenoviral Oncolysis via Liposome Encapsulation	MPI	Hood (lead, U of L, Pharm/Tox), Gomez-Gutierr	Pending program reinstatement	$10,000

Elsa U. Pardee Foundation	Pioneering melittin adjuvant modified melanoma exosomes to induce anti-tumor macrophages: A therapeutic strategy for melanoma	PI	Hood	10/1/17 - 9/30/19	$300,000 (Direct)
The Jewish Heritage Fund for Excellence	Development of exosomal nanocarriers to induce anti-melanoma macrophages in lymph node microenvironments	PI	Hood	pre-proposal selected, but advised to withdraw	$250,000 (Direct)
NIH R01, FOA: PAR-16-276 (Program to Assess the Rigor and Reproducibility of Exosome- Derived Analytes for Cancer Detection)	Reproducible Isolation of Melanoma Oncosomes, Exosomes and Exosome Subtypes	MPI	Hood (project lead, U of L) Gale, Peterse n, Sant (U of U and Espira Inc.)	4/1/18 - 3/31/23	$3,102,708 (Direct)
DOD Lung Cancer, Concept Award: W81XWH-17- LCRP-CA	Stealth encapsulation of an oncolytic adenovirus to enable virotherapy in orthotopic lung cancer	PI (Hood), Co-I (Gomez - Gutierre z (U of	Hood	5/1/18 - 4/30/19	$100,000 (Direct)
Lung Cancer Research Foundation	Development of "stealth" formulated oncolytic adenovirus to enable virotherapy in orthotopic lung cancer models.	PI (Hood), Co-I (Gomez - Gutierre z (U of	Hood	11/1/17- 10/31/19	$150,000 (Direct)
Kentucky Lung Cancer Research Fund, Cycle 17	Stealth encapsulation of an oncolytic adenovirus to enable orthotopic lung cancer virotherapy	MPI	Gome z- Gutierr ez (conta	6/1/18 – 5/31/20	$136,354 (Direct)
Kentucky Lung Cancer Research Fund, Cycle 17	Melittinized exosome- based macrophage immunotherapy for non-small cell lung cancer	MPI	Hood (contact), Gomez- Gutierre	6/1/18 – 5/31/20	$136,354 (Direct)

NIH, NCI SBIR Contract Phase 2, BAA N44CO89001-49	Continuous exosome and oncosome separations using a modified SPLITT system	MPI	Hood (U of L), Gale, Peters	9/18/18 – 9/17/20	$2,000,000

Kouokam, Calvin

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIH-NIAID/ 1 R61 AI136003-01	Assessment of Griffithsin containing nanoparticles and electrospun fibers as multipurpose formulations for the prevention of sexually transmitted infections and unplanned pregnancies.	Co-I	Kouokam/ Steinbach-Rankins	January 2018-December 2022	$2,204,104 Reviewed, not funded

Lukashevich, Igor

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIH/NIAID 1RO1 AI135770-A1	Reverse Genetics To Forward The Pan-Lassa Fever Vaccine Lead Candidate ML29	MPI	Paessler	07/01/2018 - 06/30/2023	$1,283,330
NIH/NIAID	Development of Cross-protective Vaccine for Lassa Fever	MPI	Pushko	1/1/2019-12/31/2023	$1, 350,000

Matoba, Nobuyuki

Agency/Number	Title	Role	PI	Project Period	Budget Request
Jewish Heritage Funds	Investigation of CTBp as an oral therapy preventing colitis-associated colon cancer.	PI	Matoba	2 years	$300,000 (total direct costs) *Not Funded*
Coalition for Epidemic Preparedness	Rationally Designed Universal Lassa Fever (RULAF) Vaccine	Co-I	Lukashevic h	1/1/18 – 12/31/23	*Not Funded*
NIH/NCI 1R21CA216447-01A1	Investigation of a lectibody targeting tumor-associated oligomannose glycans	PI	Matoba	4/1/18 – 3/31/20	$275,000 (total direct costs) *Impact Score: 10* *Percentile: 1*
UofL ExCITE Product Development Grant Cycle 5 (NIH U01 HL127518	CTBp for oral mucositis treatment	Contact PI	Matoba/ Hamorsky	7/1/17 – 6/30/18	$100,000 *Funded*

NIH NIAID/ 1 R01 AI138650-01	Avaren-Fc as an anti- HIV therapeutic	PI	Matoba	4/1/18 – 3/31/23	$2,447,071 (total direct costs) *Impact Score: 46 Percentile: 41*
NIH NIDDK/1 R01 DK114003-01A1	A recombinant cholera toxin B subunit variant for mucosal healing in ulcerative colitis	PI	Matoba	7/1/18 – 6/30/23	$1,982,041 (total direct costs) *To be reviewed in February 2017*

Palmer, Kenneth

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIH/NIAID R-01 AI 131974	Engineering, Design, and Optimization of Griffithsin as a Systemic HIV Therapy	MPI	Griswold Bailey-Kellogg Fuqua Palmer	04/01/2018 – 03/31/2023	$3,931,589 Scored, pending Council Review
NIH/NIAID R25 AI 140450	University of Louisville Emerging and Re-emerging Infectious Diseases Research Education Program	MPI	Lawrenz Palmer Hopp	07/01/2018 – 06/30/2023	$1,333,938 Pending IRG review

Siskind, Leah

Agency/Number	Title	PI	Project Period	Budget Request
1R21CA226456-01	EGFR in cisplatin-induced kidney injury and progression to CKD	Siskind and Beverly	04/01/2018-03/31/2020	$423,500
1R21CA226101-01	Developing a porcine model of lung cancer	Siskind, Beverly, Clark	04/01/2018-03/31/2020	$423,500
1U01CA217612-01	Extrinsic selective pressures dictate intrinsic cancer biology phenotypes	Beverly, Siskind, Clark	07/01/2017-06/30/2022	$5,898,138
1R01CA221275-01	Using physiological conditions to uncover RAS synthetic lethal targets	Siskind Beverly, Clark	07/01/2017-06/30/2022	$3,363,119
1U01CA213288-01	A clinically relevant model of small cell lung carcinoma and therapeutic response	Beverly Siskind, Clark	12/01/2016-11/30/2021	$3,465,000
1R01HL133798-01A1	Age-dependent matrisome changes predispose to injuryinduced fibrosis	Roman Siskind, Arteel, and Beverly	07/01/2017-06/30/2021	$2,146,938

1R01CA211884-01	Comparing clinical and therapeutic relevance of onco-pigs and onco-mice	Beverly, Siskind, Clark	01/01/2017 - 12/31/2019	$2,079,000
1R21DK113475-01	Suramin as a nephroprotectant in cisplatin-induced kidney injury	Siskind, Beverly	04/01/2017 - 03/31/2019	$423,500
1R01CA205601-01	(PQ9) Cisplatin induces accelerated renal aging and chronic kidney disease	Siskind and Beverly	03/01/2016-02/28/2021	$2,969,717

Song, Joe

Agency/Number	Title	Role	PI	Project Period	Budget Request
R21AG059062-01	Optimization of Biased Inverse Agonists for the Class A GPCR, GPR3	Multi-PI	P Reggio ZH Song	04/01/2018-03/31/2020	$ 409,392

States, Christopher

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIGMS/ 1 U54 GM128728-01	University of Louisville's Clinical and Translational Sciences Institute	Pilot Porject Core Dir	Klein	07/01/2018 – 06/30/2023	$20,000,000
JHFE / na	Pilot Grant Program in Environmental Health Research	PI	States	11/1/2017 – 10/31/2018	$250,000
NCI/1R03CA223613-01	Differential RNA splicing in arsenic-induced skin cancer	PI	States	7/1/17 – 6/30/19	$154,000
NIEHS/1 R01 ES028284-01A1	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	Co-I	Wise	04/01/18-03/31/23	$1,933,920
NIEHS/R01ES029604-01	The Toxicology of Hexavalent Chromium in Zero Gravity	Co-I	Wise	07/01/18-06/30/23	$3,185,452

CDMRP/ LC170303	Particulate Hexavalent Chromium-Induced Exosome Release in Human Lung Cells	Co-I	Wise	04/01/18-03/31/20	$539,000
CDMRP/ PR171786	The Toxicology of Metals in Zero Gravity	Co-I	Wise	04/01/18-03/31/19	$308,000

Wise, John

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIEHS/1 R01 ES028284-01A1	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	PI	Wise	04/01/18-03/31/23	$1,933,920
NIEHS/R01ES0296 04-01	The Toxicology of Hexavalent Chromium in Zero Gravity	PI	Wise	07/01/18-06/30/23	$3,185,452
CDMRP/ PR171696	The Toxicology of Mixtures of Depleted Uranium, Cobalt, Nickel and Tungsten in Human Lung Cells	PI	Wise	04/01/18-03/31/21	$1,810,147
CDMRP/ LC170303	Particulate Hexavalent Chromium- Induced Exosome Release in Human Lung Cells	PI	Wise	04/01/18-03/31/20	$539,000
CDMRP/ PR171786	The Toxicology of Metals in Zero Gravity	PI	Wise	04/01/18-03/31/19	308,000
CDMRP/LC170534	Hexavalent Chromium-Induced Human Lung Cell Reprogramming	PI	Wise	04/01/18-03/31/19	154,000
Kentucky Science and Engineering Foundation	Isomotive Dielectrophoresis for Dielectric Spectroscopy of Biological Cells	Co-PI	Willia ms	07/01/17 - 06/30/22	$50,000

Wise, Sandra

Agency/Number	Title	Role	PI	Project Period	Budget Request
NIEHS/1 R01 ES028284-01A1	Mechanisms of Particulate Hexavalent Chromium-Induced Lung Carcinogenesis	Co-PI	Wise,J	04/01/18-03/31/23	$1,933,920
CDMRP/PR172112	Survival Pathways in Metal-Induced Carcinogenesis	PI	Wise,S	04/01/18-10/31/19	$308,000

CDMRP/ PR171696	The Toxicology of Mixtures of Depleted Uranium, Cobalt, Nickel and Tungsten in Human Lung Cells	Co-PI	Wise,J	04/01/18-03/31/21	$1,810,147

INVITED SCIENTIFIC PRESENTATIONS
Faculty with Primary Appointments

Antimisiaris, Demetra

1. UCLA 34th Annual Geriatrics Board Review: BCGP (Board Certified Geriatric Pharmacist) Board Review. Sept. 2017.
2. UCLA 34th Annual Geriatrics Board Review: "Geriatric Pharmacotherapy Pearls" Sept. 2017
3. ULCA 34th Annual Geriatrics Board Review: "Case Studies in Geriatric Pharmacotherapy" Sept 2017
4. Audiology 2017- American Speech Language Heating Association Web Conference Seminar: Cutting-Edge Perspectives in Service Delivery for Older Adults."Pharmacology and Synergistic Effects". October 18, 2017.
5. 2017 Optimal Aging Conference, Louisville, KY. Asthma in Older Adults. (June 2017- Gault House Hotel)
6. 2017-State of Kentucky Mental Health and Aging Coalition Summit. Plenary Session- "Pharmacological Interventions and Mental Health in Older Adults".
7. Am. Society of Consultant Pharmacist Annual Meeting 2017. "The Downside of Analgesia" [Christopher Alderman PhD, University of South Autstralia & Demetra Antimisiaris, PharmD U of Louisville]. Orlando, Florida (Nov 2017)
8. 2017 KY School of Addiction and Substance Abuse. Workshop- Psychoactive medications and their role in additions and substance abuse. 6 hour workshop. (July 8-12, 2017; Crown Plaza Hotel Louisville; sponsored by KY.Gov. Dept. of Behavioral Health)

Arteel, Gavin

1. Seminar, 05/17, "Transitional changes to the "matrisome" in the development of inflammatory injury," Hepatobiology and Toxicology Program, University of Louisville.
2. Research seminar, 09/17 "Transitional changes to the "matrisome" and inflammatory organ injury," Loyola University, Biochemistry and Molecular Biology Program, Chicago, IL.
3. Research seminar, 10/17, "Transitional changes to the "matrisome" and inflammatory organ injury," University of Pittsburgh Liver Center, Pittsburgh, PA.

Beier, Juliane

1. Research seminar, 04/05/17. Environment/diet interaction in fatty liver diseases: In depth investigation of this two-hit hypothesis. Department of Bioengeneering, University of Louisville, Louisville, KY.
2. Research seminar, 06/17. "Vinyl chloride inhalation enhances experimental fatty liver disease in mice" EPA CSS Task1.1d; Steatosis AOP webinar/seminar series.
3. Research seminar, 11/17. Environment/diet interaction in fatty liver diseases. Department of Medicine. University of Pittsburgh Medical Center, Pittsburgh, PA.

Ceresa, Brian

1. Jan 20, 2017 – University of Louisville, Department of Biology "(Off)-Targeting the EGFR to Promote Wound Healing "
2. Sept 27, 2017 – James Brown Cancer Center " The Eyes Have it! Using Ocular Models to Study EGFR Function and Signaling"
3. Nov 11, 2017 – University of Alberta, Edmondton, Canada "Modulating EGFR Endocytic Trafficking to Promote Corneal Epithelial Wound Healing "

Chen, Shao-yu

1. Role of microRNAs in ethanol-induced apoptosis and embryotoxicity. The 7th Annual World Congress of Molecular & Cell Biology, Xi'an, China, April 25, 2017

Clark, Geoffrey

1. *Novel Small molecule inhibitors of the RAS oncoprotein* 2nd RAS symposium, NCI, Frederick Maryland. December 8th 2017
2. Invited speaker: KY Science center: Scientific Proofs seminar series: Developing New Drugs for Cancer.

Freedman, Jonathan

1. Pediatrics Work in Progress Seminar, University of Louisville, School of Medicine
2. Meeting presentations or other activities related to research (not included in abstracts)
3. PAT workshop; University of Louisville, School of Medicine

Fuqua, Joshua

1. Presented "Timelines and Path to IND" at the PREVENT U19 Annual Meeting. Louisville, KY

Gupta, Ramesh

1. **Gupta RC**. Berries & cancer: A Review. Berry Health Benefits Symposium, Pismo Beach, CA, March 2017.
2. **Gupta RC**, Aqil F, Jeyabalan J, Agrawal A, Kyakulaga AH, Mudd AM & Munagala R. Milk Exosomes - a Platform Nano Carrier in Drug Delivery. NanoSciTech 2017 Conference, November 9-10, Chandigarh, India
3. Aqil F, Jeyabalan J, Munagala R, Agrawal AK, Parker L & **Gupta, RC**. Exosomal Delivery of Small Molecules for the Management of Ovarian Cancer. Annual Conference of International Society of Extracellular Vesicles (ISEV-2017), May 18-21, 2017, Toronto, Canada.
4. **Gupta RC**, Jeyabalan J, *****Mudd A, Agrawal AK, *****Kyakulaga AH, Spencer W, Vadhanam MV, Aqil F & Munagala R. Milk exosomes enhance anti-proliferative and anti-cancer activities of berry anthocyanidins against multiple human cancers. Annual Conference of International Society of Extracellular Vesicles (ISEV-2017), May 18-21, 2017, Toronto, Canada.
5. Agrawal AK, Aqil F, Jeyabalan J, Kushwah V, Spencer W, Beck J, Gachuki B, Alhakeem S, Oben K, Munagala R, Bondada S & **Gupta RC**. Paclitaxel-loaded milk exosomes overcome immunotoxicity following oral administration. Annual Conference of International Society of Extracellular Vesicles (ISEV-2017), May 18-21, 2017, Toronto, Canada.
6. *****Mudd AM, Gu T, Jeyabalan J, Munagala R, Egilmez, NK, **Gupta RC**. Prevention and Treatment of Colorectal Cancer by Bilberry Derived Anthocyanidin s (Anthos) and Nano-Anthos. Abstract submitted for poster session at Berry Health Benefits Symposium, Pismo Beach, CA, 2017.
7. **Gupta RC**, Aqil F, Jeyabalan J, Agrawal A, *****Kyakulaga AH, Mudd AM & Munagala R. Milk Exosomes - a Platform Nano Carrier in Drug Delivery. NanoSciTech 2017 Conference, November 9-10, Chandigarh, India.

Hein, David

1. Applications from the Laboratory That Inform Molecular Epidemiology: The Example of Genetic Acetylation Polymorphism and Cancer Risk. Division of Pharmacology, The Ohio State University, Columbus, Ohio, April 2017.
2. Interaction of N-acetyltransferase Genetic Polymorphism and Smoking on Individual Risk for Urinary Bladder and Breast Cancers. ISPTID Round Table, ENSP International Conference on Tobacco Control 2017, Athens, Greece, May 2017.
3. Pharmacogenomic Applications Improving Drug Therapy in the United States of America: Past, Present, and Future. Democritus University of Thrace, Alexandroupolis, Greece, May 2017.

4. Laboratory Findings Enhance Assessments of Cancer Risk from Arylamine Carcinogen Exposures. Democritus University of Thrace, Alexandroupolis, Greece, June 2017.
5. Bridging Experimental Laboratory Research Towards Population-Based Cancer Risk Assessments. University of Louisville, Louisville, Kentucky, July 2017.
6. Genetic Heterogeneity Among Slow Acetylator N-acetyltransferase 2 Phenotypes. Keynote Forum, Tenth Global Summit on Toxicology and Applied Pharmacology. Chicago, Illinois, July 2017.
7. Translation of Laboratory Research Findings Towards Risk Assessments from Environmental Chemicals. Environmental Health Sciences Seminar Series, University of Louisville, Louisville, Kentucky, September 2017.

Hood, Joshua

1. ***Hood JL**. Department of Pharmacology & Toxicology, and JGBCC, University of Louisville, Louisville Kentucky, April 10, 2017, "*Advancing Translational Melanoma Exosome Research*"
2. ***Hood JL**. Invited Speaker for the American Society of Exosomes and Microvesicles Conference (ASEMV), Asilomar Conference Center, in Pacific Beach California, USA, October 9, 2017, "*Cyclical Electrical Field-Flow Fractionation of Melanoma Exosomes*"
3. ***Hood JL**. Session A, Poster Presentation for the American Society of Exosomes and Microvesicles Conference (ASEMV), Asilomar Conference Center, in Pacific Beach California, USA, October 9, 2017, "*Cyclical Electrical Field-Flow Fractionation of Melanoma Exosomes*"

Kidd, LaCreis

1. Kidd, L.R., Huntington-Moskos, Luz, Hein, D.W. *EMOTE: Learn How to Connect with Your Audience.* International Cancer Education Conference: Solving Cancer Education Challenges through Innovative, Interdisciplinary, Community and Global Collaboration, September 13-15, 2017, Cleveland, OH.

Kouokam, Calvin

1. **Kouokam JC.** Invited Speaker for the Department of Bioengineering Seminar Series, University of Louisville, Louisville Kentucky. August 31, 2017: **"Plant lectins as multifaceted drugs: the case of Griffithsin"**.

Lukashevich, Igor

1. Invited Guest Speaker, Seminar: "Reverse Genetics to Forward Pan-Lassa Fever Vaccines for Preventive and Post-challenge Applications". *Texas Biomed Res Institute, San Antonio, TX, Feb 3, 2017*

2. Presentation: "New DNA-Launched Live Attenuated Vaccines for Venezuelan Equine Encephalitis Virus (VEEV). I. Tretyakova, B. Nickols, J. Jokinen, **I. Lukashevich**, P Pushko. *ASM BioThreats Meeting, Washington, DC, Feb 6-8, 2017*

Matoba, Nobuyuki

1. "Plant-made biopharmaceuticals" Department of Bioengineering, University of Louisville, March 11, 2017.
2. "The colon epithelial healing activity of epicertin, a cholera toxin B subunit variant" Price Institute for Surgical Research, Department of Surgery, University of Louisville School of Medicine, November 9, 2017.

Palmer, Kenneth E.

1. **Kenneth E. Palmer**, Daniel Tuse and PREVENT U19 Team (2017) Progress on Griffithsin development for a first-in-humans clinical trial. *Plant Based Vaccines, Antibodies and Biologics Albufeira, Portugal, June 2017.*
2. **Kenneth E. Palmer** (2017) Griffithsin-based rectal microbicide. *Webinar* presented by invitation by the IRMA Rectal Microbicides Advocacy Community and AIDS Vaccine Advocacy Coalition, Chicago.
3. **Kenneth E. Palmer** (2017) Invited presentation: Progress on Griffithsin development for a first-in-humans clinical trial. Johns Hopkins University, Division of Clinical Pharmacology, Baltimore MD. October 2017.

Siskind, Leah

1. Invited Seminar Speaker, Mitobridge, Talk title: Role of sphingolipids in acute kidney injury, June 2017, Boston, MA
2. Invited Speaker, Vanderbilt University Department of Nephrology, Talk title: Repeated low dose cisplatin dosing induces renal fibrosis and CKD. April 2017, Nashville, TN
3. Invited Speaker, Gordon Research Conference: Glycolipids and Sphingolipids, Galveston, TX, February 11-16, 2018

States, J. Christopher

1. "Role of Mitotic Disruption in Arsenic Carcinogenesis", Jilin University, Jilin, People's Republic of China, April 11, 2017
2. "Role of Mitotic Disruption in Arsenic Carcinogenesis", Wenzhou Medical University, Wenzhou, People's Republic of China, April 14, 2017
3. "miRNAs and Aneuploidy in Arsenic-induced Skin Carcinogenesis", Department of Epidemiology & Population Health, University of Louisville, Louisville, KY, October 12, 2017
4. States, JC. "Arsenic in Cancer Chemotherapy: A Historical Perspective", Society of Toxicology, Baltimore, MD, March 12-16, 2017.

Wise, John

1. Invited Speaker – selected by Texas Tech University Graduate Student Association: “Whales and Turtles and Gators- Oh My! A Case Study of One Environmental Health and Chromium Pollution”. Texas Tech University, Lubbock, Texas.
2. Invited Speaker: “Of Whales and Men: Using a One Health Perspective to Understanding Chromium Pollution in Great Whales.” Presented at the annual meeting of the Society of Environmental Toxicology and Chemistry (SETAC), Minneapolis, Minnesota.
3. Honorary Biomedical Sciences & Health Information Lecturer: “A Whale of a Tale: Lessons from Moby Dick's Descendants about Global Chromium Pollution”. Presented at the 14th International Symposium on Recent Advances in Environmental Health Research, Jackson, Mississippi.
4. Invited Speaker: “Insights into the Threat of Chromium on Whale Health: As a One Environmental Health Approach”. Presented at the 56th Annual Meeting of the International Association of Aquatic Animal Medicine. Cancun, Mexico.
5. Invited Speaker: “Homologous Recombination Repair in Chemical Carcinogenesis: Hexavalent Chromium Induces DNA Strand Breaks while Targeting Rad51 to Inhibit Their Repair”. Presented at the 19th Annual Midwest DNA Repair Symposium, Dayton, Ohio.
6. Invited Speaker – continuing education course: “One Health: Integrated Metal Toxicity from Ecology, Environment and Animal to Human Health”. Presented at the Annual Meeting of the Society of Toxicology, Baltimore, Maryland.
7. Invited Speaker – selected by North Carolina State University Toxicology Graduate Student Association: “Whales and Turtles and Gators- Oh My! A Case Study of One Environmental Health and Chromium Pollution”. Presented at North Carolina State University, Raleigh, North Carolina.
8. Invited Speaker: "A Comparison of the Cytotoxicity and Genotoxicity of Particulate and Soluble Hexavalent Chromium in Human and Leatherback Sea Turtle (Dermochelys coriacea) Lung Cells", 8th Aquatic Animal Models of Human Disease Conference, Birmingham, Alabama. Presentation finally given by my student Rachel Speer as I was unable to attend at the last minute.

Wise, Sandra

1. Invited Speaker: “Chronic exposure to particulate chromate induces altered growth parameters and chromosome instability in human lung cells”. Presented at the annual meeting of the Environmental Mutagenesis and Genomics Society, Raleigh, North Carolina, September, 2017.

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

Antimisiaris, Dee

- Care Mentor, LLC: two patient care technologies, licensed filed in OTT

Clark, Geoff

- ULRF 17036-01; ALG Ref. 35783.04086 (P1); U.S. Appl. No. 62/575,858
  Patent Application filed: Novel inhibitors of the RAS oncoprotein

Fuqua, Joshua

- Griffithsin oxidation resistant mutants. **PCT/US15/550,323**. Inventors: O'Keefe BR, Palmer KE, **Fuqua JL**, Rohan LC. Assignee: University of Louisville, National Cancer Institute/Public Health Service, University of Pittsburgh.

Gupta, Ramesh

- University of Louisville Research Foundation filed the following patent applications to protect the valuable technology described in ULRF Research Disclosure, titled "Milk Derived Microvesicle Compositions and Related Methods": Provisional filed Feb 2013; PCT filed Feb 2014; U.S. patent filed August 2015. Inventors – R.C. Gupta, R. Munagala, F. Aqil and J. Jeyabalan. Office actions were pursued for this pending patent application in 2017; this patient is expected to be issued.
- Three additional continuation patent applications were filed by UofL on the milk exosome technology as U.S. patents in 2017.

Lukashevich, Igor

- Pushko P, Tretyakova I, **Lukashevich I**. Infectious DNA Vaccines against Chikungunya Virus. United States Patent, No.: 9,694,065 B2, July 4, 2017

Palmer, Kenneth

- US Patent Application **PCT/US15/550,323**. Griffithsin mutants. Inventors: O'Keefe BR, **Palmer KE**, Fuqua J, Rohan LC. Assignee: University of Louisville, National Cancer Institute/Public Health Service, University of Pittsburgh.
- US Patent Application **PCT/US15/180,916.** Microbicidal compositions and methods for treatment of viral infections. Inventors: Steinbach-Rankins JM, **Palmer KE**. Assignee: University of Louisville Research Foundation.

Siskind, Leah

- United States Provisional Patent Application Serial no. 62/516,399
  An Animal Model of Autoimmune Kidney Disease and Methods of Making and Using
  Filed June 7, 2017
  Inventors: Siskind, L., and Dupre, T.
  ULRF ref. #17059-01.

- U.S. Patent Provisional Application Serial No. 62/538,382
  Methods for Cell Expansion

  Filed: July 28, 2017

  Inventors: Beverly, Siskind, Clark, Saforo
  Ref: UN024/072817

DEPARTMENTAL COURSES

Pharmacology instruction in the medical school curriculum was provided in an integrated Disease and Therapeutics course. Dr. Brian Ceresa served as thread director.

Pharmacology and Dental Therapeutics course to dental students. Drs. David Hein and Demetra Antimisiaris served as course directors.

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

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

- Pharmacology I (Drs. Brian Ceresa and. Leah Siskind)
- Pharmacology II (Drs. Brian Ceresa and Joe Song)
- Seminar (Dr. Geoff Clark)
- Molecular Toxicology (Dr. Gavin Arteel)
- Scientific Writing (Dr. Gavin Arteel)
- Data Analysis (Dr. La Creis Kidd)
- Risk Assessment (Dr. John Lipscomb)
- Toxicology I and II (Drs. John Wise and Jon Freedman)

STANDING COMMITTEES

Office of the Chair

David Hein, Department Chair
Blair Cade, Department Manager
J. Christopher States, Vice Chair for Graduate Education
Gavin Arteel, Vice Chair for Research

Graduate Student Affairs and Curriculum Committee

Dr. Chris States (Chair)
Dr. Leah Siskind (ex officio)
Dr. Geoff Clark (2017)
Dr. Gavin Arteel (2018)
Dr. Brian Ceresa (2019)
Student Rep: Samantha Carlisle
Student Rep: Lauren Poole Hardy

Graduate Student Admissions and Recruitment Committee

Dr. Leah Siskind (Chair)
Dr. Chris States (ex officio)
Dr. Shao-yu Chen (2017)
Dr. John Wise Sr. (2018)
Dr. Juliane Beier (2019)

SIBUP/Grievance Committee

Nobuyuki Matoba (Chair)
Dr. Ramesh Gupta (2017)
Dr. Joe Song (2018)
Dr. Michael Merchant (2019)

Teaching Evaluation Committee

Dr. John Wise Sr. (Chair)
Dr. Joshua Hood (2017)
Dr. Leah Siskind (2018)
Dr. Gavin Arteel (2019)

Seminar Committee

Dr. Geoff Clark (Chair)
Dr. Igor Lukashevich (2017)
Dr. Calvin Kouokam (2018)
Dr. Levi Beverly (2019)

Events Committee

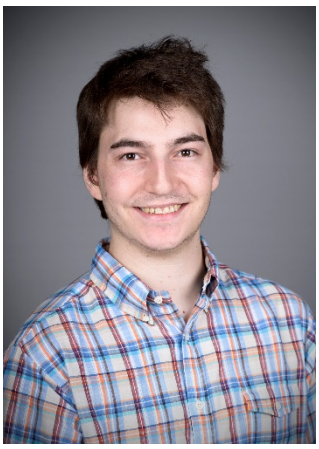
Dr. LaCreis Kidd (Chair)
Blair Cade
Kelly Holland
Aaron Howell
Dr. Juliane Beier (2017)
Dr. Sandra Wise (2018)
Dr. Irina Kirpich (2019)
Student rep: Marcus Stepp

NCI CANCER RESEARCH PROGRAM
Undergraduate Students

Meridith Balbach
Notre Dame University

Research Project: Improving thoracic malignancy re-irradiation outcomes: preventing radiation-induced toxicity using stereotactic body radiotherapy with radioprotector agents

Faculty Mentor: Neal E. Dunlap, M.D.



William Berry
University of Kentucky

Research Project: Can machine learning identify patients at risk for adverse drug events using a specific medication?

Faculty Mentor: Demetra Antimisiaris, Pharm.D.

Manuela Botaka

University of Louisville

Research Project: Regulation of protein acetylation by the RASSF1A tumor suppressor

Faculty Mentor: Geoffrey J. Clark, Ph.D.

Noela Botaka
University Louisville

Research Project: Exploring concordance between sputum eosinophil analysis and fractional exhaled nitric oxide in older adults with asthma

Faculty Mentor: Barbara Polivka, Ph.D., RN

Kevin Brown
Denison University

Research Project: The effect of various classes of cannabinoids on GPR12

Faculty Mentor: Zhao-Hui (Joe) Song, Ph.D.

Brenda Dzaringa
Vassar College

Research Project: Effects of nasal deciliation on flavor preference: a model for chemotherapy-related chemosensory deficits

Faculty Mentor: Chad Samuelsen, Ph.D.

Roxana Gonzalez-Ramos
Bellarmine University

Research Project: Enhancement of triple negative breast cancer virotherapy via alylatins agent-induced autophagy

Faculty Mentor: Jorge Gomez-Gutierrez, Ph.D.

Meranda Hinds
Hanover College

Research Project: The effect of PFKFB4 inhibition on the cell cycle progression of medulloblastoma cells

Faculty Mentor: Sucheta Telang, M.B.B.S.

Josh Julian
University of Louisville

Research Project: Effect of expression of constitutive active retinoblastoma protein (Rb) on glucose metabolism; An exercise in experimental troubleshooting

Faculty Mentor: Brian Clem, Ph.D.

Austin Krueger
University of Louisville

Research Project: Mechanisms by which rapamycin protects from liver damage caused by VC metabolites in mice

Faculty Mentor: Juliane Beier, Ph.D.

Sarah McQuaide
University of Louisville

Research Project: Genotypic analysis of mammary carcinoma susceptibility 3 nominated gene expression levels in rat mammary glands

Faculty Mentor: David Samuelson, Ph.D.

Brandon Nguyen-Ho
University of Louisville

Research Project: Analysis of organ and cell-specific gene manipulation with nanoparticles

Faculty Mentor: Gavin Arteel, Ph.D.

Gabrielle Oropilla
University of Louisville

Research Project: Strain Differences in Susceptibility to Cisplatin-Induced Renal Fibrosis

Faculty Mentor: Leah Siskind, Ph.D.

Sindhu Parupalli
University of Louisville

Research Project: Quantification and correlation of surface-modified polymer nanoparticle binding and internalization to nanoparticle efficacy and 3D spheroid distribution

Faculty Mentor: Jill Steinbach-Rankins, Ph.D.

Ajay Patel
University of Louisville

Research Project: AS411 enhance the sensitivity of radiation in lung cancer cells by down regulation of microRNA-21

Faculty Mentor: Rich Lamont, Ph.D.

Ankur Patel
University of Louisville

Research Project: Regulation of ZEB2 and long non-coding RNA in oral squamous cell carcinoma

Faculty Mentor: Tariq Malik, Ph.D. MSPH

Dhruv Patel
University of Louisville

Research Project: Determine the role of A-FaBP in the Metabolic Changes of Mammary Tumor Cell

Faculty Mentor: Bing Li, Ph.D.

Megan Peterson
Morehead State University

Research Project: Evaluating the potential of two copper-containing compounds to selectively target cancer cells

Faculty Mentor: Paula Bates, Ph.D.

Savannah Vowels
Western Kentucky University

Research Project: Risk Factors for Breast Cancer Specific and All-Cause Morality

Faculty Mentor: Richard Baumgartner, Ph.D.

Breanna Walker
University of Louisville

Research Project: Lifestyle and diabetes increase non-cancer mortality in women with invasive breast cancer

Faculty Mentor: Hiram Polk, M.D.

University of Louisville Medical School Students

Cecily Allen

Research Project: Understanding the role of hydralazine as an epigenetic cancer therapy in relation to *N*-acetyltransferase acetylator phenotype

Faculty Mentor: David Hein, Ph.D.

Monzolesso Bagah-Kognagba

Research Project: The anaphase promoting complex: A novel target in cancer therapy

Faculty Mentor: J. Christopher States, Ph.D.

Ryan Bailer

Research Project: Understanding diagnostic radiology education during undergraduate medical education

Faculty Mentor: Robert C.G. Martin, II, M.D., Ph.D

Logan Carney

Research Project: Identifying Exosomal microRNAs as Diagnostic Tools in Melanoma Patients

Faculty Mentor: Kelly M. McMasters, M.D., Ph.D

Rain Dunaway

Research Project: UBQLN1 regulates expression of wild-type EGFR but not mutated EGFR in lung adenocarcinoma cells

Faculty Mentor: Levi Beverly, Ph.D.

Jonathan Gardner

Research Project: Identification of the endogenous role of arylamine N-acetyltransferase 1 in cancer related cellular processes through proteomic analysis

Faculty Mentor: David Hein, Ph.D.

Matthew Kelecy

Research Project: Clinical effect of enoxaparin on the international normalized ratio following hepatobiliary and gastroesophageal resection

Faculty Mentor: Robert C.G. Martin, II, M.D., Ph.D

Emily Martin

Research Project: Laser-irradiated "binary bomb" nanoparticles with encapsulated gold nanorods and chemotherapeutics selectively mediate hepatocellular carcinoma apoptosis

Faculty Mentor: Robert C.G. Martin, II, M.D., Ph.D

Elizabeth Martinez Hernandez

Research Project: Line-1 ORF1 protein concentration in healthy woman populations and endometrial cancer patients

Faculty Mentor: Mary Stauble, M.D.

Devin McBride

Research Project: A one health case study: Comparison of DNA damage response to hexavalent chromium in alligator and human lung fibroblasts

Faculty Mentor: John Wise, Ph.D.

Taylor Nguyen

Research Project: Development of novel diagnostic metholologies for diagnosis and monitoring in melanoma

Faculty Mentor: Nichola C. Garbett, Ph.D.

Sean O'Leary

Research Project: Oncolytic ability of mutated adenoviruses

Faculty Mentor: Heshan Sam Zhou, Ph.D.

Vince Stephen

Research Project: Changes in MiR-200 family and RASSF2 expression in colorectal cancer and normal adjacent epithelium

Faculty Mentor: Susan Galandiuk, M.D.