UNIVERSITY OF LOUISVILLE®

SCHOOL OF MEDICINE

Department of Pharmacology & Toxicology

2014 Annual Report

UNIVERSITY OF LOUISVILLE®

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Department of Pharmacology and Toxicology-2014

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

2014 was a very transformative year for the Department of Pharmacology and Toxicology. We mourned the death of **Dr. William Waddell** who led the Department of Pharmacology and Toxicology as Professor and Chair with distinction from 1977 to 1997. He recruited an outstanding faculty and staff and the department experienced significant growth. He received both his A.B (chemistry) and his MD from the University of North Carolina. He held faculty appointments at the University of North Carolina and the University of Kentucky prior to his recruitment to the University of Louisville as Professor and Chair. Soon after his arrival, he initiated the change in Department name to Pharmacology and Toxicology. He served as President of the Association of Medical School Pharmacology Chairs, and the Ohio Valley Society of Toxicology. He led the Department

of Pharmacology and Toxicology's hosting of the first joint meeting between the Society of Toxicology and the American Society for Pharmacology and Experimental Therapeutics held in Louisville. He was appointed professor and chair emeritus in 1997 and continued to be active in Department of Pharmacology and Toxicology activities to his death on March 2, 2014.

The Department also underwent a major transition in personnel. We began 2014 with new administrative staff (Tracey Pender and Florence Su) who replaced two long-time administrative staff (Sharon Carpenter and Heddy Rubin-Teitel) who retired in 2013. During the 2014 year, we also bid farewell to our long-time unit business manager (Edie Greca) who was replaced by Blair Cade. Following the retirements of two long-time faculty members in 2013 (Professors Theresa Chen and Mike Williams) we added retirements of our additional long-time faculty members in 2014 (Professors Fred Benz, Harrell Hurst, Donald Nerland, and Peter Rowell). Each was appointed professor emeritus (Donald Nerland's appointment was effective January 1, 2015 and will be highlighted in next year's report). Faculty searches led to the recruitment Drs. Shao-yu Chen, Jonathan Freedman, and Joshua Hood (the latter two appointments were effective January 1, 2015 and will be highlighted in the 2015 annual report). Significant changes in Department Administration included the appointment of Dr. Brian Ceresa and Director of Graduate Admissions and Recruitment, Dr. Steven Myers are Associate Chair for Professional Education, and Dr. J. Christopher States as Vice Chair of Graduate Education and Director of the Graduate Program.

Kenneth Palmer, Ph.D., professor of pharmacology and toxicology and director of the Owensboro Cancer Research Program is leading a team of researchers from the University of Pittsburgh, the Magee-Women's Research Institute in Pittsburgh, the Centers for Disease Control and Prevention, Karolinska Institutet in Stockholm, Sweden, the University of Manitoba in Winnipeg, Canada, the University of Maryland, Baltimore and Kentucky Bioprocessing Inc. and Intrucept Biomedicine LLC in Owensboro. The research team which also includes Dr. Nobi Matoba was awarded a five-year, $14.7 million grant from the National Institutes of Health to lead an international effort to utilize tobacco plants to develop a gel containing a specific protein that will prevent the transmission of HIV.

The team is working with the carbohydrate combining protein Griffithsin (GRFT), which is found in red algae. To develop the microbicide, Palmer's team takes a synthetic copy of the protein and injects it into a tobacco mosaic virus, which carries the protein into the tobacco leaves. After 12 days, the researchers harvest the leaves and extract the mass-produced protein for development into the vaccine. The goal of the project is to optimize the delivery system of the protective agent, which in this case is a gel, and determine its safety and estimates of its efficacy, leading to a first-in-humans clinical trial.

As documented in data from the Blue Ridge Institute for Medical Research (see below), for FY2014, the Department of Pharmacology and Toxicology rose to 27th in the country among all Universities in the United States.

From the BLUE RIDGE INSTITUTE for MEDICAL RESEARCH (FY2014)		BRIMR.ORG
Rank	**Name**	**Pharmacology**
1	UNIVERSITY OF PENNSYLVANIA	$30,407,124
2	UNIVERSITY OF CALIFORNIA SAN DIEGO	$21,723,678
3	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	$18,908,396
4	UNIV OF NORTH CAROLINA CHAPEL HILL	$17,565,724
5	VANDERBILT UNIVERSITY	$15,633,201
6	DUKE UNIVERSITY	$14,408,337
7	UNIVERSITY OF CALIFORNIA, SAN FRANCISCO	$14,128,580
8	UNIVERSITY OF PITTSBURGH AT PITTSBURGH	$13,256,172
9	UNIVERSITY OF ILLINOIS AT CHICAGO	$12,910,580
10	VIRGINIA COMMONWEALTH UNIVERSITY	$11,786,419
11	UNIVERSITY OF NEBRASKA MEDICAL CENTER	$11,647,369
12	UNIVERSITY OF TEXAS HLTH SCIENCE CENTER	$10,432,714
13	UT SOUTHWESTERN MEDICAL CENTER	$9,927,229
14	UNIVERSITY OF KENTUCKY	$9,411,980
15	CASE WESTERN RESERVE UNIVERSITY	$9,076,130
16	YALE UNIVERSITY	$9,022,791
17	UNIVERSITY OF COLORADO DENVER	$8,362,217
18	TEMPLE UNIV OF THE COMMONWEALTH	$8,292,755
19	UNIVERSITY OF CALIFORNIA LOS ANGELES	$8,059,777
20	JOHNS HOPKINS UNIVERSITY	$7,775,253
21	EMORY UNIVERSITY	$7,750,546
22	UNIVERSITY OF WASHINGTON	$7,653,512
23	WEILL MEDICAL COLL OF CORNELL UNIV	$7,556,557
24	UNIVERSITY OF TEXAS MEDICAL BR GALVESTON	$7,164,438
25	UNIVERSITY OF CALIFORNIA AT DAVIS	$6,932,561
26	UNIVERSITY OF ROCHESTER	$6,865,472
27	UNIVERSITY OF LOUISVILLE	$6,292,179
28	ALBERT EINSTEIN COLLEGE OF MEDICINE	$6,110,800
29	NORTHWESTERN UNIVERSITY AT CHICAGO	$5,980,694
30	UNIVERSITY OF IOWA	$5,193,226
31	UNIVERSITY OF MISSOURI-COLUMBIA	$5,073,730
32	UNIVERSITY OF MINNESOTA	$4,983,541
33	UNIVERSITY OF NORTH DAKOTA	$4,682,179
34	UNIVERSITY OF MICHIGAN	$4,564,330
35	UNIVERSITY OF VIRGINIA	$4,461,606
36	UNIVERSITY OF ARIZONA	$4,416,113
37	UNIVERSITY OF KANSAS MEDICAL CENTER	$4,247,145
38	MEDICAL UNIVERSITY OF SOUTH CAROLINA	$4,029,884
39	BOSTON UNIVERSITY MEDICAL CAMPUS	$4,014,122
40	STATE UNIVERSITY NEW YORK STONY BROOK	$3,967,142
41	MARSHALL UNIVERSITY	$3,790,279
42	UNIVERSITY OF MARYLAND BALTIMORE	$3,723,758
43	NEW YORK UNIVERSITY SCHOOL OF MEDICINE	$3,604,587
44	PENNSYLVANIA STATE UNIV HERSHEY MED CTR	$3,554,339
45	UNIVERSITY OF VERMONT & ST AGRIC COLLEGE	$3,438,605
46	MEDICAL COLLEGE OF WISCONSIN	$3,140,037

47	RBHS-NEW JERSEY MEDICAL SCHOOL	$3,085,292
48	DARTMOUTH COLLEGE	$2,777,730
49	WAYNE STATE UNIVERSITY	$2,748,575
50	SAINT LOUIS UNIVERSITY	$2,734,165
51	UNIVERSITY OF PUERTO RICO MED SCIENCES	$2,673,203
52	UNIVERSITY OF MIAMI SCHOOL OF MEDICINE	$2,661,950
53	NEW YORK MEDICAL COLLEGE	$2,601,722
54	STATE UNIVERSITY OF NEW YORK AT BUFFALO	$2,582,322
55	UNIVERSITY OF SOUTH ALABAMA	$2,525,601
56	UNIVERSITY OF TENNESSEE HEALTH SCI CTR	$2,513,863
57	DREXEL UNIVERSITY	$2,285,298
58	INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	$2,113,420
59	LSU HEALTH SCIENCES CENTER	$2,080,449
60	UNIVERSITY OF MISSISSIPPI MED CTR	$2,073,801
61	GEORGE WASHINGTON UNIVERSITY	$1,890,465
62	UNIVERSITY OF WISCONSIN-MADISON	$1,852,691
63	OHIO STATE UNIVERSITY	$1,778,721
64	BAYLOR COLLEGE OF MEDICINE	$1,714,097
65	UNIVERSITY OF CINCINNATI	$1,662,811
66	GEORGIA REGENTS UNIVERSITY	$1,597,576
67	UNIVERSITY OF CALIFORNIA-IRVINE	$1,582,358
68	BROWN UNIVERSITY	$1,488,653
69	RBHS-ROBERT WOOD JOHNSON MEDICAL SCHOOL	$1,431,876
70	CREIGHTON UNIVERSITY	$1,355,037
71	UNIVERSITY OF FLORIDA	$1,343,043
72	LOYOLA UNIVERSITY CHICAGO	$1,207,908
73	UNIV OF ARKANSAS FOR MED SCIS	$1,164,932
74	THOMAS JEFFERSON UNIVERSITY	$1,096,319
75	TEXAS TECH UNIVERSITY HEALTH SCIS CENTER	$1,076,445
76	MICHIGAN STATE UNIVERSITY	$1,032,586
77	ROSALIND FRANKLIN UNIV OF MEDICINE & SCI	$978,284
78	UNIVERSITY OF NEVADA RENO	$951,057
79	UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA	$859,489
80	GEORGETOWN UNIVERSITY	$843,310
81	EAST CAROLINA UNIVERSITY	$811,244
82	RUSH UNIVERSITY MEDICAL CENTER	$806,171
83	COLUMBIA UNIVERSITY HEALTH SCIENCES	$733,332
84	MOREHOUSE SCHOOL OF MEDICINE	$703,733
85	SOUTHERN ILLINOIS UNIVERSITY SCH OF MED	$634,969
86	ALBANY MEDICAL COLLEGE	$632,416
87	LOUISIANA STATE UNIV HSC SHREVEPORT	$527,543
88	WRIGHT STATE UNIVERSITY	$401,810
89	UNIVERSITY OF ALABAMA AT BIRMINGHAM	$328,492
90	UPSTATE MEDICAL UNIVERSITY	$311,403
91	HOWARD UNIVERSITY	$298,341
92	TEXAS A&M UNIVERSITY HEALTH SCIENCE CTR	$287,426
93	TULANE UNIVERSITY OF LOUISIANA	$232,047
94	PONCE SCHOOL OF MEDICINE	$139,552
	GRAND TOTAL	$465,141,336
	MEAN	$4,948,312
	MEDIAN	$2,931,511

NEW FACULTY APPOINTMENTS (Primary appointments)

Shao-yu Chen, PhD most recently at the Department of Cancer Biology and Pharmacology at the University of Illinois College of Medicine at Peoria joined UofL's Department of Pharmacology and Toxicology with appointments as tenured professor and university scholar effective October 15, 2014. His research program, funded by multiple R01 grant awards from the National Institutes of Health, focuses on elucidation of cellular and molecular mechanisms of alcohol-induced birth defects utilizing a combination of experimental approaches including RNA interference, microRNA technology, and ultrasound-guided *in utero* microinjection in cellular, whole embryo and *in vivo* mouse models.

UNIVERSITY ADMINISTRATIVE APPOINTMENTS

Kenneth E. Palmer, PhD, Professor of Pharmacology & Toxicology was appointed Executive Director, Owensboro Cancer Research Program, a unit of the James Graham Brown Cancer Center and Helmsley Chair in Plant-based Pharmaceutical Research. Dr. Palmer also was appointed Interim Co-Director of the Center for Predictive Medicine.

Igor S. Lukashevich, MD, PhD, DSci, Professor of Pharmacology & Toxicology was appointed Distinguished University Scholar and Interim Co-Director of the Center for Predictive Medicine.

Craig McClain, MD was appointed Associate Vice President for Health Affairs/Research

DEPARTMENT ADMINISTRATIVE APPOINTMENTS

Brian P. Ceresa, PhD, Associate Professor of Pharmacology & Toxicology was appointed Director of Graduate Admissions and Recruitment.

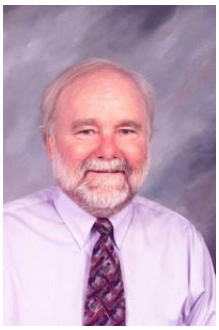
Steven R. Myers, PhD, Associate Professor of Pharmacology & Toxicology was appointed Associate Chair for Professional Education.

J. Christopher States, PhD, Professor of Pharmacology & Toxicology was appointed Vice Chair for Graduate Education and Director of the Graduate Program.

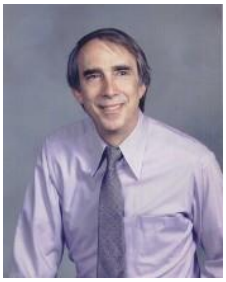
FACULTY EMERITUS APPOINTMENTS

George Aronoff, MD, retired and was appointed Professor Emeritus of Medicine effective July 1, 2014.

Frederick W. Benz, PhD retired and was appointed Professor Emeritus of Pharmacology & Toxicology effective July 1, 2014.



Harrell E. Hurst, PhD retired and was appointed Professor Emeritus of Pharmacology & Toxicology effective July 1, 2014.



Peter P. Rowell, PhD retired and was appointed Professor Emeritus of Pharmacology & Toxicology effective July 1, 2014.

NEW FACULTY APPOINTMENTS (Secondary appointments)

Chendil Damodaran, PhD, Associate Professor of Urology received a secondary faculty appointment in the Department of Pharmacology & Toxicology.

Leila Gobejishvili, PhD, Assistant Professor of Medicine received a secondary faculty appointment in the Department of Pharmacology & Toxicology.

Irina Kirpich. PhD, MPH, Assistant Professor of Medicine received a secondary faculty appointment in the Department of Pharmacology & Toxicology.

NEW FACULTY ADJUNCT APPOINTMENTS

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

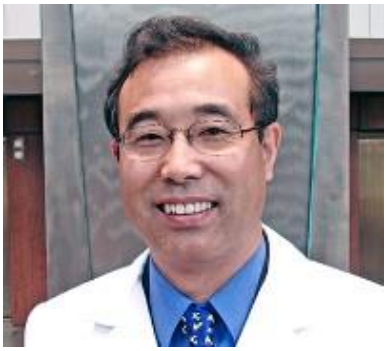
Arnold J. Schecter
Adjunct Professor of Pharmacology and Toxicology
MD, Howard University Medical School (1962)
MPH, Columbia University (1975)

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

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

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

FACULTY PROMOTIONS



Wenke Feng, PhD was promoted to Associate Professor of Medicine

Michal Hetman, MD, PhD was promoted to Professor of Neurological Surgery.

David A. Scott. PhD was promoted to Professor of Oral Immunology & Infectious Diseases.

FACULTY RESIGNATIONS

Keith R. Davis, PhD, resigned his position as Professor of Pharmacology and Toxicology and Director of the Owensboro Cancer Research Program to take a position as Director of the Johnson Entrepreneur Center for Biotechnology at Indiana University and a Professor in the Biotechnology Program.

Colleen B. Jonsson, PhD resigned her position as Professor of Microbiology and Immunology with secondary appointment in the Department of Pharmacology & Toxicology to take position as Professor and Director of the National Institute for Mathematical and Biological Synthesis at the University of Tennessee.

Uma Sankar, PhD, resigned her position as Associate Professor of Pharmacology and Toxicology, to accept a position as Associate Professor of Anatomy and Cell Biology at Indiana University Purdue University of Indianapolis

STAFF APPOINTMENTS AND RETIREMENTS

Edit Greca retired effective March 1, 2014 following an outstanding 35-year tenure as Unit Business Manager for the Department of Pharmacology and Toxicology. She is deeply missed.

Blair Cade was appointed Unit Business Manager February 17, 2014 and later promoted to Program Manager. Blair was selected to participate in the Provost Leadership Academy.

Tracey Pender was appointed Administrative Assistant effective January 6, 2014 and later promoted to Program Coordinator, Sr.

FACULTY WITH PRIMARY APPOINTMENTS

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

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

Juliane I. Arteel, PhD (Juliane Beier in professional publications)
Assistant Professor
Ph.D., Biochemistry and Molecular Biology, Heinrich-Heine-Universität (2005)

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

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

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

Brian P. Ceresa, PhD
Associate Professor and Graduate Director: Recruitment and Admissions
PhD, Pharmacology, Vanderbilt University (1995)

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

Shao-yu Chen, PhD
Professor
Ph.D., Biochemistry, Fujian Agricultural and Forest University, China (1991)

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

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

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

Keith R. Davis, PhD
Professor
Ph.D., Molecular, Cellular and Developmental Biology, University of Colorado (1985)

Research Interests: Development of plant-made pharmaceuticals; activation of gene expression by oxidative stress; and the role of innate immunity in cancer initiation and progression.

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

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

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

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

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

Research Interests: Analytical toxicology and kinetics with emphasis on qualitative and quantitative techniques, including gas chromatography, high pressure liquid chromatography and GC/mass spectrometry

Y. James Kang, PhD

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

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

La Creis R. Kidd, PhD, MPH

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

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

Igor S. Lukashevich, MD, PhD, DSci

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

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

Nobuyuki Matoba, PhD

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

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

Steven R. Myers, PhD

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

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

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

Research Interests: Biochemical toxicology; metabolism of drugs and environmental pollutants

Kenneth E. Palmer, PhD
Professor and Hemsley Chair in Plant-Based Pharmaceutical Research
Ph.D., Microbiology, University of Cape Town (1997)

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

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

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

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

Research Interests: Neuropharmacology; effect of drugs on brain neurotransmitters and receptors

Uma Sankar, PhD
Associate Professor
Ph.D., Molecular, Cellular, and Developmental Biology, Ohio State University (2003).

Research Interests: Role of calcium/calmodulin-dependent protein kinase signaling in hematopoetic stem cell biology and cancer

Leah J. Siskind, PhD
Associate Professor
Ph.D., Biology, University of Maryland (2003)

Research Interests: Role of sphingolipids in regulating cellular processes such as apoptosis, necrosis, proliferation, and inflammation in the context of disease states; Design of drugs to re-balance sphingolipid metabolism and improve disease outcomes

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

Research Interests: Molecular pharmacology; cloning and functional characterization of novel G protein-coupled receptors; molecular mechanisms of action and structure-function relationships of cannabinoid (marijuana) receptors

J. Christopher States, PhD
Professor and Vice Chair for Graduate Education
Ph.D., Molecular Biology and Pathology, Albany Medical College/Union University (1980).

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

FACULTY WITH SECONDARY APPOINTMENTS

George R. Aronoff, MD
Professor of Medicine
M.D., Indiana University (1975)

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

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

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

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

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

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

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

Haribabu Bodduluri, PhD
Professor of Microbiology & Immunology
Ph.D., Biochemistry, Indian Institute of Science (1983)

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

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

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

Guy N. Brock, PhD
Associate Professor of Bioinformatics and Biostatistics
PhD. Statistics, University of New Mexico (2003)

Research Interests: Methodological research in statistical bioinformatics and statistical genetics, with emphasis on cluster validation, missing value imputation, and classification for high-throughput data. Main areas of clinical and collaborative research include transplantation, liver disease, community acquired pneumonia, genetic variants related to breast and prostate cancer, and the molecular determinants of developmental defects during the neural tube and secondary palate formation.

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

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

Lu Cai, MD, PhD
Professor of Pediatrics and Radiation Oncology
M.D., Norman Bethune University of Medical Sciences (1983)
Ph.D., Radiation Biology/Oncology, Norman Bethune University of Medical Sciences (1987)

Research Interests: Diabetic cardiomyopathy and nephropathy

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

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

Jason A. Chesney, MD, PhD
Professor of Medicine
Ph.D., Biomedical Sciences/Immunology, University of Minnesota (1997)
M.D., University of Minnesota (1998)

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

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

Research Interests: Environmental cardiology; cardiovascular toxicology

Albert R. Cunningham, PhD
Associate Professor of Medicine
Ph.D., Environmental and Occupational Health, University of Pittsburgh (1998)

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

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

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

John W. Eaton, PhD
James Graham Brown Professor of Medicine
Ph.D., Biological Anthropology and Human Genetics, University of Michigan (1969)

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

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

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

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

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

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

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

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

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

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

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

Yiru Guo, MD
Associate Professor of Medicine
M.D., Xinjiang Medical University (1982)

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

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

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

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

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

Steven P. Jones, PhD
Associate Professor of Medicine
Ph.D., Physiology, Louisiana State University Health Sciences Center, Shreveport (2002)

Research Interests: Metabolic signaling in the cardiovascular system

Colleen B. Jonsson, PhD
Professor of Microbiology and Immunology
Ph.D., Biochemistry, Purdue University (1990)

Research Interests: Molecular virology of emerging negative-strand RNA viruses; natural history, ecology, evolution and treatment.

Swati Joshi-Barve, PhD
Assistant Professor of Medicine
Ph.D., Biochemistry, University of Kentucky (1992)

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

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

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

Irina Kirpich. PhD, MPH
Assistant Professor of Medicine
Ph.D., Biology and Physiology, Pomor State University (1997)
MPH, University of Louisville (2014)

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

Chi Li, PhD
Assistant Professor of Medicine
Ph.D, Molecular Biology, Columbia University (1998)

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

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

Research Interests: Genetic predisposition to cancer

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

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

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

Research Interests: Adenoviral vector cancer gene therapy; Development of vectors that selectively replicate in cancer cells; Mechanisms of E2F-1-induced apoptosis.

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

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

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

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

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

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

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

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

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

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

M. Michele Pisano, PhD
Professor of Molecular, Cellular and Craniofacial Biology
Ph.D., Anatomy, Thomas Jefferson University (1985)

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

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

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

George C. Rodgers, MD, PhD
Professor of Pediatrics; Humana Chair of International Pediatrics
Ph.D., Organic Chemistry, Yale University (1964)
M.D., State University of New York (1975).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Research Interests: Immunotherapy and **v**accines for treatment of cancer and infectious diseases

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

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

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

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

Wolfgang Zacharias, PhD
Professor of Medicine
Ph.D., Biochemistry, Philipps-University, Marburg, Germany (1980)

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

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

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

FACULTY WITH EMERITUS APPOINTMENTS

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

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

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

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

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

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

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

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

Waite, Leonard C., Professor Emeritus, Ph.D., University of Missouri (1969).

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

FACULTY WITH ADJUNCT APPOINTMENTS

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

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

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

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

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

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

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

- **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	Unit Business Manager/Program Manager
Edie Greca	Unit Business Manager
Tracey Pender	Administrative Assistant/Program Coordinator Sr.
Florence Su	Administrative Assistant
Marion McClain	Research Facilitator (Primary appointment in Department of Medicine; Part time in Department of Pharmacology and Toxicology)
Shiloh Tatum	Unit Business Manager (Primary appointment in Department of Medicine; Part time in Pharmacology and Toxicology)

2014 New Graduate Student Class

Kyakulaga Al Hassan
Bachelor of Biomedical Laboratory Technology, Makerere University
MSc., Pharmacology, Makerere University

Aditya S. Barve
B.S., Biology, University of Louisville

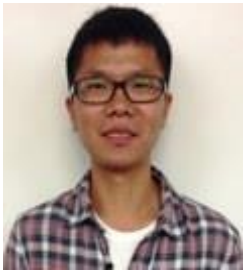
Marc M. Dwenger
B.A., Biology, Simpson College

Julie A. Gosney
B.A., Biology, Psychology, Anderson University

J. Mason Hoffman
B.S., Biochemistry, The University of the South

Anna L. Lang
B.S., Biology, Northern Kentucky University

Ashley M. Mudd
B.S., Chemistry, Wilson College
M.S., Chemistry, Brown University



Tuo Shao
B.S., Pharmacy, Wuhan Bioengineering Institute
M.S., Neuropharmacology, Wenzhou Medical University

Cierra N. Sharp
B.S., Biology, Transylvania University

Hongxue Shi
Bachelor of Pharmaceutical Engineering, Huaiyin Institute of Technology
M.S., Chinese Pharmacology, Wenzhou Medical University

Kevin M. Tyo
B.S., Biochemistry, Virginia Polytechnic Institute and State University

Graduate Students

Adcock, Scott
Al-Maqtari, Tareq
Aloway, April
Avila, Diana
Baldauf, Keegan
Barton, Chris
Barve, Aditya S.
Carlisle, Samantha
Chen, Wei Yang (Jeremy)
Dupre, Tess
Donde, Hridgandh
Dwenger, Marc M.
England, Christopher
Finch, Jordan
Gosney, Julie A.
Greenwell, Caleb
Grewal, Jaspreet
Hallgren, Justin
Hoffman, J. Mason
Holz, Gretchen
Hudson, Shanice
Jackson, Nicole

Jones, Dominique
Kumar, Pritesh
Kurlawala, Zimple
Lang, Anna L.
Lasnik, Amanda
Massey, Veronica
McAllister, Ryan
Mudd, Ashley M.
Neely, Aaron
Pandit, Harshulkumar
Poole, Lauren
Pritchard, Zachary
Shao, Tuo
Sharp, Cierra N.
Shi, Hongxue
Shidal, Christopher
Skibba, Melissa
Stathem, Morgan
Stepp, Marcus
Tyo, Kevin M.
Vicary, Glenn
Wahlang, Banrida
Wechman, Stephen

Graduates

Veronica L. Massey	Ph.D.	Gavin E. Arteel, Ph.D.	Extracellular matrix proteins and the liver-lung axis in disease
Christopher G. England	Ph.D.	Hermann B. Frieboes, Ph.D.	Study of novel nanoparticle transport and drug release for cancer treatment
Banrida Wahlang	Ph.D.	Matthew C. Cave, M.D.	Evaluating the effects of polychlorinated biphenyls in non-alcoholic fatty liver disease
Christopher P. Shidal	M.S.	Keith R. Davis, Ph.D.	Lunasin reduces the melanoma stem cell population in-vitro and inhibits tumor proliferation in-vivo
Dominique Z. Jones	M.S.	La Creis R. Kidd, Ph.D.	The role of inflammatory and immune response-related sequence variants and miR-186 in prostate cancer
Diana V. Avila	M.S.	Shirish Barve, Ph.D. & Leila Gobejishvilli, Ph.D.	Pathogenic role of PDE4 in the development of alcohol induced hepatic steatosis
Wei Yan (Jeremy) Chen	M.S.	Craig J. McClain, M.D.	The pathogenic role of acrolein in alcoholic liver disease
Marcus W. Stepp	M.S.	David W. Hein, Ph.D.	Inducible tumor difference between rapid and slow rat Nat2 congenic Fischer 344 rats administered methyl-nitrosourea
Morgan L. Stathem	M.S.	Levi J. Beverly, Ph.D. & Leah J. Siskind, Ph.D.	Building a metabolic bridge between glycolysis and sphingolipid biosynthesis: Implications for cancer
Christopher L. Barton	Ph.D.	Kenneth E. Palmer, Ph.D.	Evaluation of the safety and pharmacokinetic profile of the broad spectrum antiviral lectin griffithsin

Ryan C. McAllister	M.S.	Colleen B. Jonsson, Ph.D.	Development of models for the study of the molecular mechanisms of host restriction and adaptation of hantaviruses
Zachary J. Pritchard	M.S.	Uma Sankar, Ph.D.	Bone strength and architecture: pharmacological targeting of CaMKK2 as a method for enhancing bone quality
Laila Al-Eryani	M.S.	Matthew C. Cave, M.D.	The role of pesticides in non-alcoholic fatty liver disease (NAFLD)
Melissa E. Skibba	M.S.	Lu Cai, M.D., Ph.D.	Preventive effect of non-mitogenic acidic fibroblast growth factor on diabetes-induced testicular cell death
Justin L. Hallgren	M.S.	Michal Hetman, M.D., Ph.D.	The role of the nucleolus in neurodegeneration

FACULTY HONORS

Arteel, Gavin:

- Senior author on poster selected for presidential posters of distinction at the AASLD annual meeting in Boston, MA
- Coauthor on poster selected for presidential posters of distinction at the AASLD annual meeting in Boston, MA

Arteel, Juliane:

- Abstract selected for oral presentation; Digestive Disease Week 2014; Chicago IL
- Young Investigation Award, oral presentation; 22nd International Congress on Fibrinolysis & Proteolysis; Marseille, France
- Basic Science Research Faculty Award at Research!Louisville; Louisville, KY
- President's Choice Award at the AASLD 65th annual meeting; Boston, MA

Chen, Shao-yo:

- Invited to participate in NIH Special Emphasis Review Panel ZAA1Dd
- Review Panel, Italian Ministry of Health; Italy

Hein, David:

- Peter K. Knoefel Endowed Chair of Pharmacology and Toxicology; University of Louisville
- Distinguished University Scholar; University of Louisville
- President's Distinguished Faculty Award for Oustanding Scholarship, Research and Creative Activity in Career of Service.

Dean Toni Ganzel, Professor David Hein, and President James Ramsey

Kidd, LaCreis:

- 2004-present: "Our Highest Potential" Endowed Chair in Cancer Research, James Brown Cancer Center, University of Louisville, School of Medicine
- 2014 Celebration of Faculty of Excellence for Patents and Licenses

Lukashevich, Igor:

- Distinguished University Scholar Award

Matoba, Nobuyuki:

- Julep Ball Scientist of the Year; James Brown Cancer Center; University of Louisville

Palmer, Kenneth:

- Kentucky Derby Mint Julep Ball Scientist of the Year Award; May 2014
- Appointed to an endowed chair in the School of Medicine as the Helmsley Chair in Plant-made Pharmaceuticals Research; October 2014

Chendil Damodaran, Associate Professor of Urology and **Xiang Zhang,** Professor of Chemistry were appointed as University Scholars.

Craig McClain delivered the 19th annual Mark Keller Honorary Lecture at the National Institutes of Health.

STUDENT HONORS

Dominique Jones received the Alice Eaves Barns Award, which recognizes a student who has displayed tenacity in the face of adversity, while attaining excellence in the both the classroom and outside endeavors. Dominique also was selected to carry the School of Medicine's banner and lead its graduates into UofL's winter 2014 commencement ceremony. She received her MS in pharmacology and toxicology under the direction of Dr. La Creis Kidd and is continuing towards completion of her PhD dissertation.

Nicole Jackson received a Southern Regional Education Board (SREB) Doctoral Scholars Fellowship for Underrepresented Minorities. She is pursuing her PhD in pharmacology & toxicology under the direction of Dr. Brian Ceresa.

Banrida Wahlang received the 2013 KC Huang Outstanding Graduate Student Award**.** Her dissertation entitled **"**Evaluating the effects of polychlorinated biphenyls in non-alcoholic fatty liver disease" was completed under the direction of Dr. Matthew Cave**.**

D**ominque Jones, Veronica Massey, Banrida Wahlang, Diana Avila and Marcus Stepp** received Dean's citations at the December commencement ceremony.

Student Awards Presented at Research!Louisville

Master's Basic Science Graduate Student Award

1st place **Zimple Kurlawala**
2nd place **Stephen Wechman**
3rd place **Diana Avila**

NCI Cancer Education Program Norbert J. Burzynski Award Professional Student Category

1st place Dillon Pender (Lacey McNalley)
2nd place Eric Riedinger (Jorge Gomez-Gutierrez)
3rd place Deepa Patel (Kelly McMasters)

NCI Cancer Education Program Norbert J. Burzynski Award Undergraduate Student Category

1st place Lee Sims (Jill Steinbach)
2nd place TIE: Tejas Sangoi (Brian Ceresa)
2nd place TIE: Harold Ghooray (Shirish Barve)
3rd place TIE: Kendall Huddleston (Ramesh Gupta & Rhada Munagala)
3rd place TIE: Adrienne Voelker (Brian Ceresa)

PHARMACOLOGY & TOXICOLOGY PUBLICATIONS
Faculty with Primary Appointments and Students

1. Al-Eryani L, Wahlang B, Falkner KC, Guardiola JJ, Clair HB, Prough RA, Cave MC. Identification of environmental chemicals associated with the development of toxicant associated fatty liver disease in rodents. Toxicol Pathol. pii: 0192623314549960. 2014.

2. Aqil F, Jeyabalan J, Vadhanam MV, Lehmler H, Robertson LW, Gupta RC. DNA adducts and effects on cellular markers by sustained release of PCB126 and PCB153 by polymeric implants. *Toxicology Reports*, 1, 820-833, 2014

3. Aqil F, Munagala R, Jeyabalan J., Joshi T, Singh IP, Gupta R. The Indian Blackberry ('Jamun'), antioxidant capacity and cancer protection. *In* Preedy, V.R. (Eds); Oxidative stress and dietary antioxidants. Kings college, London, pp 101-113. 2014

4. Aqil F, Shen H, Jeyabalan J, Xin X, Lehmler HJ, Ludewig G, Robertson LW, Gupta RC. Sustained expression of CYPs and DNA adduct accumulation with continuous exposure to PCB126 and PCB153 through a new delivery method: Plymeric implants. Toxicol Rep 1:820-33. Doi 10.1016/j.toxrep.2014.09.010. 2014.

5. Aqil, F, Vadhanam, M, Jeyabalan J, Cai J. Singh, IP, Gupta RC. A sensitive method for the detection of anthocyanins/anthocyanidins in animal tissues. *J. Agri. Food Chem,* 62, 3912-3918, 2014.

6. Arnette C, Efimova N, Zhu X, Clark GJ, Kaverina I. Microtubule segment stabilization by RASSF1A is required for proper microtubule dynamics and Golgi integrity. Mol Biol. Cell, Mar; 25(6):800-10, 2014

7. Bansal SS, Kausar H, Vadhanam MV, Ravoori S, Rai SN, Gupta RC. Curcumin Implants, not Curcumin Diet Inhibits Estrogen-Induced Mammary Carcinogenesis in ACI Rats. *Cancer Prevention Res*, 7, 456-465, 2014

8. Barton C, Kouokam JC, Lasnik AB, Foreman O, Cambon A, Brock G, Montefiori DC, Vojdani F, McCormick AA, O'Keefe BR, Palmer KE. Activity of and effect of subcutaneous treatment with the broad-spectrum antiviral lectin griffithsin in two laboratory rodent models. *Antimicrob Agents Chemother*.;58(1):120-7.

9. Cai J, Sun X, Han PF, Xiao Y, Fan X, Shang Y, Kang YJ. The effect of myocardial infarct size on cardiac reserve in Rhesus monkeys. Cardiovas Toxicol, 14: 309-315. 2014.

10. Cao P, Aqil F, Ravoori S, Gupta RC, Vadhanam MV. Polymeric implants for systemic delivery of green tea polyphenols. *J. Pharm. Sci*, 103, 945-951, 2014

11. Ceresa, BP,Peterson, JL. Cell and Molecular Biology of the Epidermal Growth Factor Receptor, *International Review of Cell and Molecular Biology*;313:145-78, 2014.

12. Ding X, Beier JI, Baldauf KJ, Jokinen JD, Zhong H, Arteel GE. Acute ethanol preexposure promotes liver regeneration after partial hepatectomy in mice by activating ALDH2. American Journal of Physiology-GI and Liver Physiology, 306:G37-47. 2014.

13. Dong DY, Xu XH, Yin W, and Kang YJ. Changes in copper concentrations affect the protein levels but not the mRNA levels of copper chaperones of human umbilical vein endothelial cells. Metallomics, 6(3):554-559, 2014.

14. Donninger H, Clark JA, Monaghan MK, Schmidt ML, Vos M, Clark GJ. Cell cycle restriction is more important than apoptosis induction for RASSF1A tumor suppression. J. Biol Chem. Nov 7;289(45):31287-95, 2014.

15. Fujiuchi N, Matsuda R, Matoba N, Fujiwara K. Effect of nitrate concentration in nutrient solution on hemagglutinin content of Nicotiana benthamiana leaves in a viral vector-mediated transient gene expression system. *Plant Biotechnol* 31(3): 207-211, 2014.

16. Harrison BJ, Flight RM, Gomes C, Venkat G, Ellis, SR, Sankar U, Twiss JL, Rouchka, EC, Petruska JC. IB4-binding sensory neurons in the adult rat express a novel 3' UTR-extended isoform of CaMK4 that is associated with its localization to axons. *J Comp Neurol* 2014 Feb 1, 522(2):308-36, doi: 10.1002/cne.23398, 2014.

17. Hong K.U, Guo Y, Li Q, Cao P, Al-Maqtari T, Vajravelu B, Du J, Book M, Zhu X, Nong Y, Bhatnagar A, Bolli R. c-kit+ Cardiac Stem Cells Alleviate Post-Myocardial Infarction Left

Ventricular Dysfunction Despite Poor Engraftment and Negligible Retention in the Recipient Heart. PLoS One. 9:e96725, 2014.

18. Hudson SV, Huang JS, Yin W, Albeituni S, Rush JS, Yan J, Ceresa BP, Khanal A, Frieboes HB, McNally LR. Non-invasive Identification of Orthotopic Pancreatic Cancer through Targeting EGFR using Multispectral Optoacoustic Tomography, *Cancer Res* Nov 1;74(21):6271-9,2014. doi: 10.1158/0008-5472.CAN-14-1656. Epub 2014 Sep 12.

19. Husk A, Hamorsky K, Matoba N. Monoclonal Antibody Purification (*Nicotiana benthamiana* Plants). *Bio-protocol* 4(2): e1034, 2014.

20. Illario M, Di Somma C, Iaccarino G, Campiglia P, Sankar U, Montuori N. Novel therapeutic targets in metabolic disorders: from bench to bedside. *Scientific World Journal* 2014:e365974. doi: 10.1155/2014/365974. Epub 2014 May 13.

21. Inaba J, McConnell EJ, Davis KR. Lunasin sensitivity in non-small cell lung cancer cells is linked to suppression of integrin signaling and changes in histone acetylation. Int J Mol Sci. Dec 18;15(12):23705-24, 2014. doi: 10.3390/ijms151223705

22. Jeyabalan J, Aqil F, Munagala R, Annamalai L, Vadhanam MV, Gupta RC. Chemoprotective and Therapeutic Activity of Deitary Blueberry against Estrogen-Mediated Breast Cancer. J Agric Food Chem 62(18):3963-71, 2014. Doi 10.1021/jf4037434j

23. Jiang X, Dalebout TJ, Lukashevich IS, Bredenbeek PJ, Franco D. Molecular and immunological characterization of a DNA-launched yellow fever virus 17D infectious clone. J Gen Virol doi: 10.1099/jgv.0.000026, 2014.

24. Kaiser JP, Guo L, Beier JI, Zhang J, Lesgards JF, Hoetker JD, Monia BP, Bhatnagar A, Arteel GE. PKCε contributes to chronic ethanol-induced steatosis in mice but not inflammation and necrosis. *Alcoholism: Clinical and Experimental Research*, 38:801-9, 2014.

25. Kumar P, Kumar A, Song ZH. Structure-activity relationships of fatty acid amide ligands in activating and desensitizing G protein-coupled receptor 119. Eur J Pharmacol. Jan 15;723:465-72, 2014.
26. Kumar P, Carrasquer CA, Carter A, Song ZH, Cunningham AR. A categorical structure-activity relationship analysis of GPR119 ligands. SAR QSAR Environ Res. 25(11):891-903, 2014.

27. Kumar P, Song ZH. CB2 cannabinoid receptor is a novel target for third-generation selective estrogen receptor modulators bazedoxifene and lasofoxifene. Biochem Biophys Res Commun. Jan 3;443(1):144-9, 2014.

28. Lee H, Cherni I, Yu H, Fromme R, Doran JD, Grotjohann I, Basu S, Dorner K, Aquila A, Barty A, Boutet S, Chapman HN, Doak RB, Hogue BG, Hunter MS, James DR, Kirian RA, Kupitz C, Lawrence RM, Liu H, Nass K, Schlichting I, Schmidt KE, Seibert MM, Shoeman RL, Spence J, Stellato F, Weierstall U, Williams GJ, Yoon C, Wang D, Zatsepin NA, Matoba N,

Fromme P, Mor TS. Expression, purification and crystallization of CTB-MPR, a candidate mucosal vaccine component against HIV-1. *IUCrJ* 1, 305-317, 2014.

29. Liu Jm, Han P, Xiao Y, Liu Jn, Kang YJ. A novel knot method for individually measurable aortic constriction in rats. Am J Physiol: Heart Circ Physiol, 307: H987-H995,2014

30. Lukashevich IS, Shirwan H, Editors. Book: Novel Technologies for Vaccine Development. Springer, Wien, New York, 2014, 386 pages, ISBN 978-3-7091-1818-4.

31. Lukashevich, IS . Arenaviral Vaccines. International Innovation, January Issue, p. 94-96, 2014.

32. Matoba N, Matsuda R. Rapid production of monoclonal antibody therapeutics and vaccines in *Nicotiana benthamiana* "plant factories". *Bioscience & Industry* 72(2) 102-108, 2014.

33. McAllister RC, Jonsson CB. Hantaviruses: past, present and future. *Future Virology* 9(1), 87–99,2014. 10.2217/FVL.13.113

34. McConnell EJ, Devapatla B, Yaddanapudi K, Davis KR. The soybean-derived peptide lunasin inhibits non-small cell lung cancer cell proliferation by suppressing phosphorylation of the retinoblastoma protein. Oncotarget. 2014 Dec 31.

35. McDonagh EM, Boukouvala S, Aklillu E, Hein DW, Altman RB, Klein TE. PharmGKB Very important pharmacogene (VIP) for N-acetyltransferase 2. *Pharmacogenetics and Genomics* 24: 409-425, 2014. (Epub June 2).

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PHARMACOLOGY & TOXICOLOGY ABSTRACTS
Faculty with Primary Appointments and Students

Arteel, Gavin:

National/International

1. Kirpich I, Mohammad M, Falkner KC, Arteel GE, Barnett R, States JC, Prough RA, Cave M (2014) Initial Characterization of Metal Exposures in Community Residents Living Adjacent to the Black Leaf Pesticide Manufacturing Complex. The Toxicologist 138:587

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4. Massey VL, Schmidt RH, Tan M, Watson WH, Arteel GE (2014) The Prebiotic Oligofructose Protects against Enhanced Liver Injury Caused by Arsenic in a Model of NASH. The Toxicologist 138:352.

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8. Arteel GE, Beier JI, Jokinen J, Whang PS, Martin AM, Warner ML, Lukashevich IS (2014) New insight into the role of liver in viral hemorrhagic fever. Hepatology 60:720A

Local/Regional

9. Holz GE, Jokinen JD, Arteel GE, and Lukashevich IS (2014) Interaction of hemorrhagic fever viruses with HepG2 cells. Research!Louisville annual meeting.

10. Poole L, Massey V, Dolin C, Merchant M, Beier J, Roman J, and Arteel G (2014) Ethanol-induced changes in the hepatic ECM directly enhance the pro-inflammatory response. Research!Louisville annual meeting.

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13. Barve A, Stepp M, Doll M, Zhang J, Arteel G, Barve S and Hein D (2014) Hepatocarcinogenic Effects of 4,4 methylenedianaline (MDA) and Obesogenic Dietary Components. Research!Louisville annual meeting.

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15. Beier JI, Ander LC, Bushau AM, Douglas AN, Lang AL, Falkner KC, Arteel GE, Cave MC and McClain CJ (2014). Research!Louisville annual meeting.

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Arteel, Juliane:

National/International

1. Anders LC, Douglas AN, Guardiola J, Massey VL, Kirpich IA, Mohammad MK, Falkner KC, Cave M, McClain CJ and Beier JI (2014) An Environmental 2nd Hit: Effect of Vinyl Chloride Exposure on Liver Injury in Experimental Hepatotoxicity and in Humans. *The Toxicologist. Supplement to Toxicological Sciences* 138:494.

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4. Anders LC, Douglas AN, Bushau AM, Falkner KC, Arteel GE, Cave M, McClain CJ and Beier JI (2014) Exposure to Vinyl Chloride Metabolites Exacerbates Liver Injury Caused by High Fat Diet in Mice. Hepatology 60(1):719A. (Presidential Poster of Distinction).

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1. Bushau AM, Anders LC, Douglas AN, Joshi-Barve S, Poole LG, Massey VM, Falkner KC, Cave M, McClain CJ and Beier JI (2014) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury. University of Louisville NCI R25 Cancer Education Program, Louisville, KY.

2. Bushau AM, Anders LC, Douglas AN, Poole LG, Massey VL, Lang AL, Falkner KC, Cave M, McClain CJ and Beier JI (2014) Mechanistic Insight Into Vinyl Chloride-Induced Liver Injury. Research! Louisville annual meeting, Louisville, KY.

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Ceresa, Brian:

National/International

1. Dec 2014: American Society for Cell Biology, Wiechmann A.F., Ceresa B.P., and Howard E.W. Diurnal variations in matrix metalloproteinase expression and tight junction integrity in *Xenopus laevis* corneal epithelium (Poster)

2. July 2014: FASEB Summer Research Conference: Protein Kinases, Cellular Plasticity and Signal Rewiring. Ceresa, B.P. and Parks, E.E. Cell Surface Epidermal Growth Factor Receptors Increase Src and c-Cbl Activity and Receptor Ubiquitylation (Poster)

3. June 2014: Gordon Research Conference: Lysosomes & Endocytosis, Bankston, A. and Ceresa, B.P. Regulation of EGFR tyrosine phosphorylation by the endocytic pathway (Poster)

Chen, Shao-yu:

1. Chen XP, Liu J, Chen S-Y. Up-regulation of miR-200a suppresses ethanol-induced apoptosis in neural crest cells by down-regulation of p38 MAPK signaling. *Alcohol Clin Exp Res*. 38: 29A, 2014.

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4. Dou, X, Chen, XP, Chen S-Y, Charness ME. SRC family kinase phosphorylation of Y1176 in the L1 cytoplasmic domain is required for ethanol inhibition of L1 adhesion. *Alcohol Clin Exp Res.* 38: 357A, 2014.

Clark, Geoffrey:

1. Howard Donninger, Diego Calvisi, Thibaut Barnoud, M. Lee Schmidt and Geoffrey J. Clark. NORE1A is a double-barreled Ras senescence effector linking Ras to p53 and Rb. AACR Ras conference Orlando FL, February 2014.

2. M. Lee Schmidt, Howard Donninger, Katherine Hobson, Laurie Rund, Eric Watson, Larry Schook and Geoffrey J. Clark. Towards a swine model for breast cancer. International meeting for Swine in Biomedical Research. Raleigh NC, 2014.

3. Thibaut Barnoud, Howard Donninger, and Geoffrey J Clark Ras Regulates Rb-Mediated Senescence via NORE1A. *Proceedings of the 13th Annual James Graham Brown Cancer Center Retreat.* Louisville KY October 2014

4. Nicholas C. Nelson and Geoffrey J. Clark. Elucidating the Role of the Nore1a/BRCA1 Tumor Suppressor Complex in Human Cancer. *Proceedings of the 13th Annual James Graham Brown Cancer Center Retreat.* Louisville KY, October 2014.

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7. Mattingly, S. J.; Hobbing, K. R.; Clark, G. J.; Nantz, M. H. *Lipid-coated Nanoparticles for Drug Delivery*. Poster 542; presented at the 66th Southeastern Regional Meeting of the American Chemical Society, Nashville, TN; October 18, 2014.

Gupta, Ramesh:

1. Gupta RC, Munagala R, Aqil F, Jeyabalan J. Novel milk-derived exosomes for drug delivery. International Conference on Nanotechnology in the Service of Health, Environment and Society, NanoSciTech 2014, 13-15 February, 2014.

2. Aqil F, Munagala R, Jeyabalan J, Gupta RC. Biodistribution of milk-derived exosomes and exosomal-curcumin. ISEV (Internatl. Soc. of Extracellular Vesicles), April 2014.

3. Gupta RC, Aqil F, Jeyabalan J, Munagala R. Milk-derived exosomes as a drug carrier. ISEV (Internatl. Soc. of Extracellular Vesicles), April 2014.

4. Munagala R, Aqil F, Gupta RC. Exosomal biomarkers for primary and recurrent lung cancer. ISEV (Internatl. Soc. of Extracellular Vesicles), April 2014.

5. Munagala R, Jeyabalan J, Aqil F, Gupta RC. Large-scale isolation and characterization of bovine milk- and colostrum-derived exosomes. ISEV (Internatl. Soc. of Extracellular Vesicles), April 2014.

6. Munagala R, Gupta RC. Exosomal biomarkers for primary and recurrent lung cancer. ISEV (Internatl. Soc. of Extracellular Vesicles), April 2014.

7. Munagala R, Gupta RC. Role of Tumor-Derived Exosomes in Growth and Metastasis of Breast Cancer. *Proc. Am. Cancer Res.* 54, 4957, 2014.

8. Aqil F, Munagala R, Jeyabalan J, Gupta RC. Milk derived exosomes: Scalable Source of biologically active drug delivery nanoparticles. *Proc. Am. Cancer Res.* 54, 5407, 2014.

9. Munagala R, Campbell, Gupta RC. Role of Tumor Growth and Metastasis of Lung Cancer. *Proc. Am. Cancer Res.* 54, 1054, 2014

Hein, David:

1. Carlisle, S.M., Doll, M.A., Stepp, M.W., States, J. S., and Hein, D.W.: DDADE is an effective inhibitor of arylamine N-acetylation but not folate-dependent direct hydrolysis of acetyl-coenzyme A by human arylamine *N*-acetyltransferase 1 (NAT1). Great Lakes Drug Metabolism and Disposition Group Meeting 2014, Indianapolis, Indiana, May 2014.

2. Stepp, M.W., Doll, M.A., States, J.S., and Hein, D.W.: Incidence of N-methylnitrosourea–induced breast tumors differ between rapid and slow acetylator congenic rat strains. Great Lakes Drug Metabolism and Disposition Group Meeting 2014, Indianapolis, Indiana, May 2014.

3. Barve, A.S., Stepp, M., Doll, M., Zhang, J., Arteel, G., Barve, S., and Hein, D.W.: Hepatocarcinogenic effects of 4-methylenedianiline (MDA) and obesogenic dietary components. Ohio Valley Society of Toxicology summer student meeting, Louisville, Kentucky, July 2014.

4. Carlisle, S.M., Trainor, P.J., Zhang, X., Yin, X., Doll, M.A., States, J.C., and Hein, D.W.: Metabolomics of transformed MDA-MBA-231 cells expressing different levels of human N-acetyltransferase 1 (NAT1). Proceedings of Research!Louisville Abstract GRM-8, Louisville, Kentucky, September 2014.

5. Stepp, M., Doll, M., States, J.C., and Hein, D.W.: Methylnitrosourea tumorigenesis differences between rapid and slow rat Nat2 congenic Fischer 344 rats exposed at 8 weeks of age. Proceedings of Research!Louisville Abstract GRD-71, Louisville, Kentucky, September 2014.

6. Mamaliga, G., Stepp, M., Doll, M., and Hein, D.: Folate-dependent acetyl CoA hydrolysis by human and rodent N-acetyltransferases. Proceedings of Research!Louisville Abstract MED-51, Louisville, Kentucky, September 2014.

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8. Huang, W., Radde, B., Doll, M.A., Hein, D.W., and Klinge, C.M.: Dehydroepiandrosterone stimulate miR-20 transcription in primary human hepatocytes. Proceedings of Research!Louisville Abstract HSS-81, Louisville, Kentucky, September 2014.

9. Kidd, L., Packer, T. and Hein, D.: Results of 3rd year cohort of R25 Cancer Education Program. Proceedings of Research!Louisville Abstract F-13, Louisville, Kentucky, September 2014.

10. Carlisle, S.M., Trainor, P.J., Zhang, X., Yin, X., Doll, M.A., States, J.C., and Hein, D.W.: Metabolomics of transformed MDA-MBA-231 cells expressing different levels of human N-

acetyltransferase 1 (NAT1). Proceedings of annual meeting of the Ohio Valley Society of Toxicology, Dayton, Ohio, September 2014.

11. Carlisle, S.M., Trainor, P.J., Zhang, X., Yin, X., Doll, M.A., States, J.C., and Hein, D.W.: Metabolomics of transformed MDA-MBA-231 cells expressing different levels of human N-acetyltransferase 1 (NAT1). Proceedings of the 14th annual James Graham Brown Cancer Center Retreat, #24, Louisville, Kentucky, October 2014.

12. Kidd, L.R, Packer, T. and Hein, D.W.: Results of 3rd year cohort of R25 Cancer Education Program. Proceedings of the 14th annual James Graham Brown Cancer Center Retreat, #60, Louisville, Kentucky, October 2014.

13. Mamaliga, G., Stepp, M.W., Doll, M.A., and Hein, D.W.: Folate-dependent acetyl CoA hydrolysis by human and rodent N-acetyltransferases. Proceedings of the 14th annual James Graham Brown Cancer Center Retreat, #65, Louisville, Kentucky, October 2014.

14. Huang, W., Radde, B.N., Doll, M.A., Hein, D.W., and Klinge, C.M.: Dehydroepiandrosterone stimulate miR-20 transcription in primary human hepatocytes. Proceedings of the 14th annual James Graham Brown Cancer Center Retreat, #71, Louisville, Kentucky, October 2014.

15. Stepp, M., Doll, M., States, J.C., and Hein, D.W.: Methylnitrosourea tumorigenesis differences between rapid and slow rat Nat2 congenic Fischer 344 rats exposed at 8 weeks of age. Proceedings of the 14th annual James Graham Brown Cancer Center Retreat, #91, Louisville, Kentucky, October 2014.

Kidd, LaCreis:

National/International

1. Jones D.Z., Linder J., Avila D.V., Gobejishvili L., Barker D., Schmidt L., Hobbing K., Clark G., and Kidd L.R. micro-RNA 885-5p and its role in the TGF-β pathway using prostate cancer cell lines derived from European- and African-American men. AACR Annual Meeting, San Diego, CA, April, 2014.

2. Jones D.Z., Hobbing K., Schmidt L., , Clark G., and Kidd L.R. miR-186 Inhibition Alters Cell Proliferation and Colony Formation in Prostate Cancer. American Society of Pharmacology & Experimental Therapeutics, Boston, MA November 6, 2014. (INVITED TO COMPETE IN THE ASPET GRADUATE STUDENT BEST ABSTRACT AWARD)

3. Jones D.Z., Hobbing K., Schmidt L., , Clark G., and Kidd L.R. miR-186 Inhibition Alters Cell Proliferation and Colony Formation in Prostate Cancer. American Society of Investigative Pathology, Boston, MA November 6, 2014. (INVITED TO GIVE AN ORAL PRESENTATION)

4. Jones D.Z., Hobbing K., Schmidt L., , Clark G., and Kidd L.R. miR-186 Inhibition Alters Cell Proliferation and Colony Formation in Prostate Cancer. St. Jude National Graduate

Student Symposium, Memphis, TN, December 15, 2014. (INVITED TO GIVE AN ORAL PRESENTATION)

Local/Regional

1. Kidd L.R., Packer T. and Hein, D.W. Results of 3rd Year Cohort of the NCI R25 Cancer Education Program. Research Louisville!, Louisville, Kentucky, August 28, 2014.

2. Jones D.Z., Hobbing K., Schmidt L., , Clark G., and Kidd L.R. The Effect of miR-186 Inhibition on Cell Proliferation and Colony Formation in Prostate Cancer. Research Louisville!, Louisville, Kentucky, August 28, 2014.

3. Ronke-Hervey A., Jones D.Z., Kidd L.R. Impact of Quercetin on two miRNAs (miR-25, -106b) and Cell Proliferation and Migration of Metastatic and Non-Metastatic Prostate Cancer Cell lines. Research Louisville!, Louisville, Kentucky, August 28, 2014.

4. Ronke-Hervey A., Jones D.Z., Kidd L.R. Impact of Quercetin on two miRNAs (miR-25, -106b) and Cell Proliferation and Migration of Metastatic and Non-Metastatic Prostate Cancer Cell lines. R25 Cancer Education & Summer Research Scholar Program Poster Session, Louisville, Kentucky, July 31, 2014.

5. Kidd L.R., Packer T. and Hein, D.W. Results of 3rd Year Cohort of the NCI R25 Cancer Education Program. Brown Cancer Center Retreat, Louisville, Kentucky, September 24 2014.

6. Jones D.Z., Hobbing K., Schmidt L., , Clark G., and Kidd L.R. The Effect of miR-186 Inhibition on Cell Proliferation and Colony Formation in Prostate Cancer. Brown Cancer Center Retreat, Louisville, Kentucky, September 24 2014.

7. Ronke-Hervey A., Jones D.Z., Kidd L.R. Impact of Quercetin on two miRNAs (miR-25, -106b) and Cell Proliferation and Migration of Metastatic and Non-Metastatic Prostate Cancer Cell lines Brown Cancer Center Retreat, Louisville, Kentucky, September 24 2014.

Lukashevich, Igor S:

1. Igor S. Lukashevich, Peter Predenbeek, Peter Pushko (2014) Advanced Vaccine Platforms to control Arenaviral Hemorrhagic Fevers. 3rd Biotechnology World Congress, Festival City, Crown Plaza, Dubai, UAE, February 10-13, 2014.

2. Irina Tretyakova, Brian Nickols, Igor Lukashevich, Eryu Wang, Scott Weaver, and Peter Pushko (2014). DNA-Launched Live Attenuated Vaccines for Alphaviruses. American Society for Virology 2014 Annual Meeting, 21-25 June, Fort Collins.

3. Igor Lukashevich, Peter Bredenbeek, Peter Pushko. DNA-launched vaccines against flavi- and alphaviruses. The XVIth International Congress of Virology, Montreal, Canada, July 27 – Aug 1, 2014.

4. Irina Tretyakova, Eryu Wang, Igor Lukashevich, Scott Weaver, Peter Pushko. DNA-Launched Live Attenuated Vaccines for Alphaviruses. The XVIth International Congress of Virology, Montreal, Canada, July 27 – Aug 1, 2014.

5. Min Wang, Jenny Jokinen, Irina Tretyakova, Peter Pushko, Igor S. Lukashevich. Design of vaccines with rational trafficking of Lassa virus membrane glycoproteins to stimulate adaptive CD8 T cell responses. The 2014 Midwest Membrane Trafficking and Signaling Symposium. University of Louisville, October 3, 2014.

Matoba, Nobuyuki:

1. Hamorsky KT*, Husk A, Morris MK, Hanson C, Hume S, Grooms-Williams T, Vausselin T, Dubuisson J, Matoba N. "Engineering, characterization and anti-HIV/HCV activity of Avaren-Fc, an oligomannose-specific lectin-human IgG1 Fc chimera" *Next Generation Protein Therapeutics Summit*, San Francisco CA, June 2014.

2. Hamorsky KT, Husk A, Kouokam J, Morris MK, Hanson C, Hume S, Grooms-Williams T, Vausselin T, Dubuisson J, Matoba N*. "AvFc, an oligomannose-specific lectin-human IgG1 Fc chimera, is a candidate antiviral biotherapeutic agent exhibiting broad anti-HIV/HCV activity" *ICAAC 2014*, Washington, DC, September 5 – 9, 2014

3. Royal JM*, Nelson BA, Baldauf KJ, Kouokam JC, Matoba N. Plant-Made Cholera Toxin B Subunit, an Orally Active Anti-inflammatory Protein, in an Acute Colitis Mouse Model: Investigation of Effective Dose and Time of Administration" *Research!Louisville*, Louisville, KY, September 2014.

4. Baldauf KJ*, Kouokam JC, Jala VR, Bodduluri H, Matoba N. "Oral Administration of Cholera Toxin B Subunit Modulates Gastrointestinal Profile and Protects Against DSS-Induced Acute Colitis in Mice" *Research!Louisville*, Louisville, KY, September 2014.

5. Grooms-Williams T*, Kouokam JC, Jenson AB, Matoba N. "Toxicological Analysis of Avaren-Fc: A potential HIV microbicide" *Research!Louisville*, Louisville, KY, September 2014.

6. Royal JM*, Husk AS, Hamorsky KT, Bennett LJ, Matoba N. "Plant-Made Anti-TNFα Monoclonal Antibody; an Infliximab Biosimilar against Intestinal Inflammation and Colon Cancer." *Brown Cancer Center Retreat*, Louisville, KY, October 2014.

7. Baldauf KJ*, Kouokam JC, Jala VR, Bodduluri H, Matoba N. "Oral Administration of Cholera Toxin B Subunit Modulates Gastrointestinal Profile and Protects Against DSS-Induced Acute Colitis in Mice" *Brown Cancer Center Retreat*, Louisville, KY, October 2014.

8. Kouokam JC*, Royal L, Cary R, Freel A, Husk A, Hamorsky K, Matoba N. "Evaluation of the HIV-1 antiviral Avaren-Fc as a potential cancer immunotherapeutic drug." *Brown Cancer Center Retreat*, Louisville, KY, October 2014.

9. Seber L*, Husk A, Hamorsky K, Matoba N. "Plant-based production and characterization of a novel bispecific HIV microbicide" *Brown Cancer Center Retreat*, Louisville, KY, October 2014.

10. Grooms-Williams T*, Kouokam JC, Jenson AB, Matoba N. "Toxicological Analysis of Avaren-Fc: A potential HIV microbicide" *Brown Cancer Center Retreat*, Louisville, KY, October 2014.

11. Grooms-Williams T*, Kouokam JC, Jenson AB, Matoba N. "Toxicological Analysis of Avaren-Fc: A potential HIV microbicide" *HIVR4P*, Cape Town, South Africa, 28 – 31, October 2014.

12. Hamorsky K, Husk A, Matoba N*. "Engineering and Characterization of a Bispecific Entry Inhibitor for the Non-Vaccine Biomedical Prevention of HIV-1 Infection" *HIVR4P*, Cape Town, South Africa, 28 – 31, October 2014.

13. Royal CL*, Husk A, Hamorsky K, Matoba N. "Investigation of the cancer immunotherapeutic potential of Avaren-Fc" *Kentucky Academy of Science 100th Annual Meeting*, Lexington, KY, November 14 – 16, 2014. *Mr. Royal, summer intern student, won 1st place in the Health Science category.*

Myers, Stephen:

1. Kim BM, Fuqua JL, Palmer KE. Plant Lectin, Griffithsin localized in the apoplast induces SA-dependent cell death in *Nicotiana benthamiana.* Plant Signaling: Dynamic Properties. Breckenridge, Colorado, February 2014.

2. Kim BM, Fuqua JL, Palmer KE. Plant Lectin, Griffithsin localized in the apoplast induces SA-dependent cell death in *Nicotiana benthamiana.* James Graham Brown Cancer Center Retreat, October 2014.

3. Fuqua J, Denton S, Lasnik AB, Walker J, Hamorsky K, Matoba N, Palmer KE. Mucosal delivery of a L2-based fusion vaccine provides cross-neutralizing protection against multiple HPV types. James Graham Brown Cancer Center Retreat, October 2014. ** This presentation won first prize in the Postdoctoral Trainee category.*

4. Lasnik AB, Fuqua JC, Palmer KE. Effect of route of administration of the anti-viral lectin GRFT on antibody titers and concentration in organs. Research!Louisville, September 2014.
5. Steyn S, Lasnik AB, Fuqua J, Palmer KE. Immune response to CTB-L2 human papillomavirus vaccination in mice and guinea pigs; insight into eliciting prophylactic pan-HPV protection. Research!Louisville. September 2014.

6. Yang H, Li J, Dezzutti CS, Palmer KE, Rohan LC. Design of biodegradable nanoparticles for vaginal delivery of the anti-HIV protein griffithsin. *AIDS Research and Human Retroviruses*. October 2014, 30(S1): A142-A142. doi:10.1089/aid.2014.5287.abstract.

Siskind, Leah:

National/International

1. Dupre TV, Mather AR, and Siskind LJ. (2014) Inhibitors of Ceramide Synthesis Protect mice from cisplatin-induced acute kidney injury. 53rd Annual Meeting of the Society of Toxicology, March 23-27, Phoenix, AZ.

2. Dupre TV, Mather AR, Schnellmann R, and Siskind LJ. (2014) Role of sphingolipids in cisplatin-induced acute kidney injury. 49th Annual South Eastern Regional Lipid Conference. November 2014.

Local/Regional

1. Cameron Comway, Michael Scherzer, Morgan Stathem, Leah J Siskind, and Levi J Beverly. Development of novel tools for unbiased and high throughput screening of all proteins involved in sphingolipid metabolism. March 1, 2014 Speed School of Engineering Exposition.

2. Michael Scherzer, Morgan Stathem, Leah J Siskind, Levi J Beverly. The role for sphingosine kinase 2 in leukemogenesis. March 1, 2014 Speed School of Engineering Exposition.

3. Samantha Manning, Kumaran Sundaram, and Leah J Siskind. The role of neutral ceramidase in cellular proliferation. . March 1, 2014 Speed School of Engineering Exposition.

4. Conway C, Patwardhan G, Saforo D, Beverly LJ, and Siskind LJ. (2014) Development of a shRNA library for high-throughput screening of the role of sphingolipids in tumorigenesis. Research Louisville.

5. Dupre TV, Mather AR, Schepp Berglind J, Funk J, Schnellmann RG, and Siskind LJ (2014) Inhibitors of ceramide synthesis protect from cisplatin-induced acute kidney injury. Research Louisville

6. Sundaram K, Mather AR, Marimuthu S, and Siskind LJ (2014) Loss of neutral ceramidase protects from necroptosis by activating autophagic flux. Research Lousiville

7. Marimuthu S, Korrapati M, Schnellmann RG, and Siskind LJ. (2014) Glycosphingolipids mediate hyperglycemia-induced mesangial cell hypertrophy. Research Louisville.

8. Saforo D, Sundaram K, Patwardhan G, and Siskind LJ. (2014) Sphingolipids as potential targets for the treatment of acute kidney injury. Research Louisville.

States, J. Christopher:

1. States, JC, Saforo, DJ, Klimchak, NA, Trent, JO. Non-tubulin mitotic disruptors induce apoptosis in cancer cells. Abstract 304. The Toxicologist CD—An official journal of the Society of Toxicology, Volume 138, Issue 1, March 2014.

2. Kirpich I, Mohammad M, Falkner KC, Arteel GE, Barnett R, States JC, Prough RA, Cave M. Initial Characterization of Metal Exposures in Community Residents Living Adjacent to

the Black Leaf Pesticide Manufacturing Complex. Abstract 2221. The Toxicologist CD—An official journal of the Society of Toxicology, Volume 38, Issue 1, March 2014.

3. Al-Eryani L, Wahlang B, Falkner KC, Clair H, Prough RA, States JC, Cave M. Identification of Environmental Chemicals Which Could Contribute to Nonalcoholic Fatty Liver Disease by Nuclear Receptor Activation. Abstract 1159. The Toxicologist CD—An official journal of the Society of Toxicology, Volume 38, Issue 1, March 2014.

4. Singh SK, States JC, Kakar SS. Withaferin A in combination with cisplatin targets CD44 and Oct4 positive cancer stem cells in ovarian cancer. Abstract 212. Proceedings of the 105th Annual Meeting of the American Association for Cancer Research (2014) Apr 5-9; San Diego, CA. Philadelphia (PA)

Regional:

1. Stepp M, Doll M, States JC, Hein D.. Methylnitrosourea tumorigenesis differences between rapid and slow rat Nat2 congenic Fischer 344 rats exposed at 8 weeks of age. Poster presentation. James Graham Brown Cancer Center Annual Retreat 2014, Louisville, KY

2. Stepp M, Doll M, States JC, Hein D.. Methylnitrosourea tumorigenesis differences between rapid and slow rat Nat2 congenic Fischer 344 rats exposed at 8 weeks of age. Poster presentation. Research! Louisville 2014, Louisville, KY

3. Stepp M, Doll M, States JC, Hein D... Incidence of N-methylnitrosourea–induced breast tumors differ between rapid and slow acetylator congenic rat strains. Poster presentation. Great Lakes Drug Metabolism and Disposition Group 2014 Meeting, Indianapolis, IN (2014)

4. Stewart J, Doll M,1 States JC, Recombinant Expression of Codon-Optimized ANAPC2 and ANAPC11, Research!Louisville, Louisville, KY (2014)

5. Stewart J, Doll M,1 States JC, Recombinant Expression of Codon-Optimized ANAPC2 and ANAPC11, JG Brown Cancer Center Retreat, Louisville, KY (2014)

6. Carlisle M, Trainor J, Zhang X, Yin X, Doll MA, States JC,Hein DW. Metabolomics of Transformed MDA-MB-231 Cell Lines Expressing Different Levels of Human Arylamine N-Acetyltransferase 1 (NAT1). Research!Louisville, University of Louisville, Louisville, KY (2014)

ACTIVE GRANTS/CONTRACTS

Faculty with Primary Appointments

Agency/ Number	Title	Role	PI	Project Period	Budget Award
Gavin Arteel:					
T32 ES011564	UofL Environmental Health Sciences Training Program	Mentor	Hein	07/01/09-06/30/14	$407,549
U01 AA021901	Novel therapies in alcoholic hepatitis University of Louisville	Co-I	McClain	10/01/12-09/31/17	$310,966
R21 ES021311	Effect of dietary fat on the hepatotoxicity of environmental arsenic	Co-I	Watson	05/25/12–04/30/14	$224.875
R01 AA021978	Role of ECM and inflammatory remodeling in alcohol-induced liver and lung damage	PI	Arteel	02/01/14-01/31/19	$337,500
R13 ES024661	Environmental Chemicals and Liver Disease (R13 mechanism)	Co-I	Cave	2014	$15,430
Juliane Beier:					
NIDDK/1K01DK096042-01 A1	Enhancement of NAFLD risk by vinyl chloride: interaction of gut-liver-adipose axis	PI	Beier	04/01/13-03/31/18	$89,593
NIAID/7R01AI093450-02	Development of new bivalent cross-protective arenaviral vaccines	Co-I	Lukashevich	09/01/11-3/31/16	$495,534
NCI/R25-CA134283	University of Louisville Cancer Education Program	Mentor	Hein	09/01/13-08/31/14	$66,344
NIEHS/R13	Environmental Chemicals and Liver Disease	Co-I	Cave	07/01/14-06/30/15	$15,430
Brian P. Ceresa:					
NIH/NIGMS R01GM092874	Endocytic Regulation of EGFR Signaling	PI	Ceresa	09/01/10-08/31/14 (NCE)	$200,000
NIH/NEI R01EY021497	Modulation of EGFR Signaling to Promote Corneal Wound Healing	PI	Ceresa	01/01/12 – 12/31/14 (NCE)	$375,000
PanOptica, LLC	The Effect of PAN-90806 on EGFR-mediated Corneal Epithelial Homeostasis	PI	Ceresa	7/15/14-3/14/15	$105,000
Shao-yu Chen:					
NIAAA/RO1 AA021434	Role of microRNA in ethanol-induced apoptosis and teratogenesis	PI	Shao-yu Chen	07/2013 – 06/2018	$225,000 (direct cost)
NIAAA/RO1 AA020265	Role of Siah1 in ethanol-induced apoptosis and teratogenesis	PI	Shao-yu Chen	07/2012 – 06/2017	$225,000 (direct cost)
NIAAA/RO1 AA017446	Role of Nrf2 signaling in modulating ethanol-induced teratogenesis	PI	Shao-yu Chen	07/2008 – 06/2014	$200,000 (direct cost)
NIAMS/RO1 AR063630	Coordinated cytoskeletal dynamics in skin somatic stem cells	Subcontract PI	Xiaoyang Wu	09/2013 – 08/2018	$225,000 (direct cost)

					$25,000 direct cost for subcontract
Geoffrey J. Clark:					
NCI/R01 CA133171-01A2	The Role of the Ras effector Nore1a in tumor suppression	PI		2010-2015	$180,000
NIH Eureka Award/ 1R01CA153 132-01	Oncopigs as a better model for human cancer	PI		2010-2014	$200,000
NIH COBRE Pilot Award	The development of Novel Ras antagonists to inhibit cancer	PI		2013-2015	$75,000
Ramesh Gupta:					
NCI CA-125152	Breast Cancer Chemoprevention Potential of Common Spices	PI	Gupta	07/07–05/14	$201,000
R43-CA-162417	Sustained, Target Delivery for Treatment of Cervical Pathologies	Multi-PIs	Gupta Spencer	07/12–12/15	$100,000
U.S. Highbush Blueberry Council	Therapeutic Activity of Blueberry Against Lung Cancer	PI	Gupta	08/13–07/15	$37,165 (Directs)
KY Matching	This grant is a supplement to the SBIR Phase I grant listed above	PI	Gupta	01/13-12/15	$75,000 (Directs)
Coulter Foundation	Treatment of Cervical Pathologies by Curcumin Delivered Locally by a Polymeric Device – Phase I (Year 1)	Multi-PIs	Gupta Parker O'Toole	7/13 – 6/15	$138,714 (Total)
Helmsley Trust Fund	Plant-based cancer therapeutics	PI	Gupta	1/14-12/14	$110,238 (Direct)
Coulter Foundation	Treatment of Cervical Pathologies by Curcumin Delivered Locally by a Polymeric Device – Phase I (Year 2)	Multi-PIs	Gupta Parker O'Toole	7/14-6/15	$138,714 (Total)
Dept of Defense	Prevention & Treatment of Breast Cancer by Blueberry	PI	Gupta	9/14-8/17	$1,033,053 (Total)
STTR Phase I	Exosomal Drug Formulation	PI	Gupta	9/14-8/15	$225,000 (Total)
David W. Hein:					
NIH/NIEHS (T32-ES011564)	UofL Environmental Health Sciences Training Program	PI	Hein	7/1/09-6/30/15	$2,084,094 (total)
NIH/NCI (R25-CA134283)	University of Louisville Cancer Education Program	PI	Hein	9/14/11-8/31/16	$1,543,610 (total)
NIEHS (T35-ES014559)	Summer Environmental Health Sciences Training Program	Mentor	Prough, McClain, Srivastava	4/1/11-3/31/16	$175,814 (total)
LaCreis Renee Kidd:					
NIH, NIEHS	UofL Environmental Health Science Training Program	Mentor	Hein	07/1/09-06/30/14	$399,910

T32-ES011564					
R25-CA134283-01A1	University of Louisville Cancer Education Program	Co-I, Ca Educ Coord, Mentor	Hein	9/14/12-08/31/16	$312,198
Igor S. Lukashevich:					
NIH/R01 AI093450	Development of New Bivalent Cross-Protective Arenaviral Vaccines	PI		04/01/2011-03/31/2016	$792,908
NIH/R43 AI094863 (SBIR)	Novel DNA-launched Attenuated Vaccine for VEE Virus	PI on sub	Pushko	03/01/2012-05/31/2014	$85,925
NIH/R03 AI094159	A Novel DNA-launched Live Attenuated Chikungunya Vaccine	PI on sub	Pushko	03/01/2012 - 08/31/2014	$18,625
Nobuyuki Matoba:					
NIH NIAID Microbicide Innovation Program V /R21/R33 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	PI	Matoba	6/10/10 – 6/30/15	$235,000 (total direct costs)
DoD/USAMRMC/W81XWH-10-2-0082- CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	Sub-project PI	Wilkerson	9/30/11 – 10/29/15	$437,000 (total direct costs)
Brown Cancer Center Helmsley Trust Program /G2142	Subproject Title: Immunotherapeutic potential of plant-made CTB against colitis and colon cancer	Sub-project PI	Miller	7/18/11 – 12/31/15	$42,500 (total subproject direct costs)
NIH NIAID/ U19 AI 103458-01	Griffithsin-based Rectal Microbicides for PREvention of Viral ENTry (PREVENT)	Core C Leader	Palmer	7/01/14 – 6/30/19	$3,100,078 (total direct costs)
Kenneth E. Palmer:					
NIH/NIAID U19 AI 113182-01	Griffithsin-based rectal microbicides for prevention of viral entry (PREVENT)	PD/PI	Palmer	07/01/2014 – 06/30/2019	$2,968,626 **
NIH/NIAID U19 AI 113182-661	PREVENT Program Administrative Core	PI	Palmer	07/01/2014 – 06/30/2019	** see parent award above
NIH/NIAID U19 AI 113182-666	Project 2: PREVENT program preclinical studies	PI	Palmer	07/01/2014 – 06/30/2019	** see parent award above
Leona M and Harry B Helmsley	Advancing the discovery and development of plant-made pharmaceuticals	Sub-proj. PI	Miller	01/01/2014 – 12/31/2017	$1,833,333

Charitable Trust 2014-PG-MED001					
NIH/NIAID R33 AI088585	Plant-produced Actinohivin as a Candidate HIV Microbicide	Co-I	Matoba	06/01/2012-5/31/2015	$450,000
DoD/USAMRMC W81XWH-10-2-0082-CLIN 1	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI of sub-award to UofL	Wilkerson & Palmer	08/23/2010-08/22/2015	$350,200
DoD/USAMRMC W81XWH-10-2-0082-CLIN 2	Plant-Based Expression Systems for New Vaccines and Therapeutics	PI of sub-award to UofL	Wilkerson & Palmer	9/30/2011-10/29/2016	$349,600
Leah J. Siskind:					
R01DK093462	Targeting Ceramide-induced Kidney Cell Apoptosis and Necrosis for the Treatment of Acute Kidney Injury	PI	Siskind	09/17/12-03/31/17	$319,819
Zhao-Hui (Joe) Song:					
T32ES11564	UofL Environmental Health Sciences Training Program	Faculty Mentor	Hein	7/1/09 – 6/30/14	$ 407,549
8 P30GM103507 Pilot Grant	The Potential Therapeutic Effects of Cannabidiol on Spinal Cord Injury	Pilot PI	Whittmore	8/1/2014 -7/30/2015	$ 22,500
J. Christopher States:					
ULSoM-Basic Grant	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	01/01/12 – 02/28/15	$15,000 (in NCE)
ULEVPRI-Competitive Enhancement Grant	Differential miRNA expression & progression of arsenic induced skin cancers	PI	States	09/01/13 – 02/28/15	$15,000 (in NCE)
NIH-NIEHS R01ES017260-04	Atherogenic Mechanisms Of Arsenic	Co-I	Srivastava	6/15/09 – 3/31/14	$328,584

RESEARCH GRANTS SUBMITTED

Faculty with Primary Appointments

Arteel, Gavin:					
Agency/ Number	**Title**	**Role**	**PI**	**Project Period (requested)**	**Award Total**
NIAAA	University of Louisville Alcohol Research Center	Pilot Core Director, Project Co-I; Education Co-director	McClain	12/01/15-11/30/20	$9,000,000

NIEHS	UofL Environmental Health Sciences Training Program	PI	Arteel	07/01/15-06/30/20	$3,011,196
NIGMS	Hepatobiology and Toxicology COBRE	Core Dir./mentor	McClain	12/01/14-11/30/19	$11,250,000
NIAAA	Gestational alcohol exposure: impact of bacteria community on the neonate	Co-I	Neal	07/01/14-06/30/16	$412,500
NICHD	CSE: gut microbiome modulation of hepatic gluconeogenesis	Co-I	Neal	07/01/14-06/30/16	$412,500
NIAAA	FAS: Impact of gut microbiome on hepatic lipid function	Co-I	Neal	07/01/14-06/30/19	$1,875,000
NIDDK	Therapeutics development for hepatic fibrosis	Subcontract PI	Maitra	09/01/14-08/31/19	$1,875,000 ($504,656 sub)
Arteel, Juliane:					
COBRE	Hepatobiology and Toxicology COBRE	Pilot	McClain	12/01/15-11/30/20	$11,550,000
Ceresa, Brian:					
NIH/NIGMS R01GM092874	Modulating EGFR Activity via the Endocytic Pathway	PI	Ceresa	4/1/15 -3/31/20	$1,862,500
NIH/NEI R01EY021497	Regulation of Corneal Epithelial Homeostasis by the EGFR	PI	Ceresa	7/1/15 – 6/30/20	$1,862,500
DoD	Neural mechanisms of, and development of topical treatments for, chronic non-dry corneal pain (corneal euralgia) arising from repeated corneal injury	Co-I	Petruska	7/1/14 -6/30/16	$375,000
NIH/NCI	Autophagic Cell Death in Pancreatic Cancer	Co-I	McNally	4/1/15 -3/31/20	$1,862,500
NIH/NCI	Ubiquilin1 regulates EMT and metastasis of human lung adenocarcinoma	Co-I	Beverly	4/1/15 -3/31/20	$1,862,500
DoD	Enhancement of corneal wound healing through a novel EGFR-mediated nanotherapy	Mentor	Neves	7/1/14-6/30/17	$523,763
JDRF	Enhancement of corneal wound healing through a novel EGFR-mediated nanotherapy	Mentor	Neves	1/1/15-12/30/17	$152,856
Chen, Shao-yu:					
NIAAA/P50 Alcohol center grant	The role of nutrition in the development/progression of alcohol-induced organ injury. Project 3 title: Sulforaphane-mediaed epigenetic modulation of ethanol-induced apoptosis and teratogenesis	Project 3 PI	McClain	12/1/2015 – 11/30/2020	$9,000,000.00 Project 3 budget: $1,207,000.00 (Total budget)
Clark, Geoffrey:					
NIH R01	The Role and Relevance of RASSF1A inactivation in Ras driven cancer	PI		2015-2020	Direct:: 250K/annum

NIH R21	Novel RalGDS inhibitors to antagonize pancreatic cancer	PI		2015-2017	Direct: 125K/annum
NIH R21	Novel small molecule inhibitors of the Ras Oncoprotein	PI		2015-2017	Direct: 125K/annum
NIH U01	Identification of physiologically relevant K-Ras synthetic lethal components	PI		2015-2019	~ Av 400K/annum
KSEF	Novel Inhibitors of Ras Driven Lung Cancer	PI		2015-2016	30K/Annum
DOD	The development of RalGDS inhibitors to treat MPNST	PI		2015-2018	150K/Annum
DOD	Radiation Induced Cancer and the RASSF1A A(133)S SNP	PI		2015-2017	120K/Annum
DOD	Novel RalGDS inhibitors to antagonize breast cancer metastasis	PI		2015-2018	120K/Annum
Gupta, Ramesh:					
NCI STTR Phase I	New Technology for Isolation of Anthocyanidins and Efficacy against Human Cancers	PI	Gupta	4/15- 3/16	$300,000
NCI R33	Exosomal Drug Deliver in Cancer Therapy	PI	Gupta	2/15-1/18	$1,350,000
NCI R01	Strategies for Lung Cancer Prevention and Treatment	PI	Gupta	7/15-6/20	$2,608,582
Hein, David W.:					
NCI R25-CA134283 (non-competing renewal)	University of Louisville Cancer Education Program	PI	Hein	09/01/2014-08/31/2015	$295,337
NIEHS T32-ES011564 (NCE)	UofL Environmental Health Sciences Training Program	PI	Hein	07/01/14-06/30/15	$186,349
NIGMS P20-113226	Hepatobiology and Toxicology COBRE	Renovations Director; Faculty mentor	McClain	12/01/14-11/30/19	$11,550,000
NIGMS 1U54GM115452	University of Louisville's Clinical & Translational Sciences Institute	Professional Development Co-Leader	McClain	07/01/15-06/30/20	$20,000,000
NIEHS T32-ES011564 (renewal)	UofL Environmental Health Sciences Training Program	Co-investigator	Arteel	04/01/15-03/31/20	$3,011,196
Kang, Y. James:					
NIH-NIAAA, 1R01AA023190	Mechanisms of Probiotics in Alcoholic Liver Disease	Co-PI	Wenke Feng	07/01/14-06/30/19	$1,500,000
Lukashevich, Igor:					
NIH/NIAID 1R01 AI116712-01	Genetically Re-Designed Cross-Protective Lassa Virus Vaccine (percentile: 20)	PI		04/01/2015-03/31/2020	$2,958,331

NIH/NIAID 2R43AI094 863-01	Novel DNA-Launched Attenuated Vaccine for VEE Virus (score: 30, in re-submission)	PI on sub		04/01/2015-03/30/2017	$600,000
Matoba, Nobuyuki:					
NIH NIAID/ 1 R01 AI117742-01	Design and Development of a Virus Trap and Safety Net Approach for STI Prevention.	Co-I	Steinbach	7/01/14 – 6/30/18	$2,374,552
Kentucky Lung Cancer Foundation	Investigation of AvFc as a Candidate Lung Cancer Immunotherapeutic	PI	Matoba	3/1/15 – 2/28/17	$150,000
CONRAD	Design and Development of Multipurpose Polymeric Nanoparticles and Electrospun Fibers for Prolonged Antiretroviral (EVG and CMX157) Delivery	Collaborator	Steinbach		$100,000
Palmer, Kenneth:					
NIH/NIHLB U01 HL127518-01	The EXCITE Program: Expediting Commercialization, Innovation, Translation and Entrepreneurship	Co-PI	Bates, Miller, Krentzel	04/01/2015 – 03/31/2018	$2,998,200
Siskind, Leah:					
1R01DK101 813-01A1	The role of glycosphingolipids in diabetic nephropathy	Co-PI,	Siskind, Schnellmann	04/01/2015-03/31/2019	$2,318,225
1R21CA191 681-01	Sphingolipid metabolic regulators as drivers and therapeutic targets of AML	Co-PI,	Beverly, Siskind	12/1/2014-11/30/2016	$412,500
1R21CA191 681-01A1	Sphingolipid metabolic regulators as drivers and therapeutic targets of AML	Co-PI,	Beverly, Siskind	7/01/2015-6/30/2017	$412,500
1U01CA199 214-01	Identifying physiologically relevant RAS synthetic lethal components	Co-PI,	Clark, Beverly, Siskind	7/1/2015-6/30/2019	$2,532,119
Song, Zhao-Hui:					
R01DA0039 34	Molecular Determinants of Cannabinoid Activity	PI, U of L subcontract	P Reggio	4/1/2015-3/31/2020	$ 375,000
P30GM1035 07 Pilot Grant	The Potential Therapeutic Effects of Cannabidiol on Spinal Cord Injury	PI for Pilot Grant	S Whittemore	8/1/2014 -7/30/2015	$ 22,500
OICB15009 5 Vida Cannabis Corp	The Effects of Cannabigerol and Cannabidiol on CB2 Cannabinoid Receptor	PI	ZH Song	9/1/2014 -8/31/2015	$ 100,000
States, J. Christopher:					
NIH-NIEHS 1R01ES025 400-01	Differential miRNA expression in arsenic-induced skin carcinogenesis	PI	States	04/01/2015 - 03/31/2020	$2,681,681.
NIH-NIEHS 1R21ES023 627-01A1	Differential miRNA expression & progression of arsenic induced skin cancers	PI	States	07/01/2015 - 06/30/2017	$412,500

NIH-NCI 1R03CA198 785-01	Targeting the Anaphase Promoting Complex	PI	States	07/01/2015 - 06/30/2017	$150,000
KLCRP	Targeting the anaphase promoting complex as lung cancer chemotherapy	PI	States	01/01/2015 - 12/31/2016	$150,000
KSEF RDE-018	Novel Cancer Chemotherapeutics Targeting Mitosis	PI	States	07/01/2015 - 06/30/2016	$30,000
Marsha Rivkin Foundation for Cancer Research	Enhancing Platinum Treatment of Epithelial Ovarian Cancer	PI	States	07/01/2015 - 06/30/2016	$75,000
NIH-NIGMS 1U54GM11 5452-01	University of Louisville's Clinical and Translational Sciences Institute	Pilot Project Core Director	McClain	07/01/2015- 06/30/2020	$20,000,000
NIH-NIGMS 1P20GM113 226-01	Hepatobiology and Toxicology COBRE	Faculty Mentor	McClain	12/01/2014- 11/30/2019	$11,500,000
NIH-NIEHS 1R01 ES025189-01	Effect of environmental arsenic on HNF4a in non-alcoholic fatty liver disease	Co-Inv	Watson	04/01/15 - 03/31/20	$1,250,000
NIH-NIEHS 1R21ES025 886-01	Arsenic inhibits repair of folate-dependent DNA damage through a ribonucleotide-initiated mechanism	Collaborator	Cabelof	07/01/2015 - 06/30/2017	$418,000

INVITED SCIENTIFIC PRESENTATIONS
Faculty with Primary Appointments

Arteel, Gavin:

1. Plenary lecture, 07/14 "Fibrin ECM and the balance between (hepatic) life and death," International Society of Fibrinolysis and Proteolysis, Marseille, France.
2. Research symposium, 09/14 "Hepatic ECM homeostasis and liver disease," NIEHS Tamburro Symposium on Environmental Chemicals and Liver Disease, Louisville, KY.

3. Seminar, 10/14 "Fibrosis Overview." University of Louisville School of Medicine, GI Fellows seminar Program, Louisville, KY.

Arteel, Juliane:

1. Research seminar, 03/11/14. Apples and Oranges? Exploring the Paradigm of Inflammatory 2-Hit Liver Injury. University of Louisville, Department of Environmental & Occupational Health Sciences, University of Louisville, Louisville, KY.

2. Research seminar, 06/02/14. Vinyl Chloride and its Metabolites Predispose The Liver To Injury. University of Louisville, Liver Research Group, University of Louisville, Louisville, KY.

3. Research symposium, 09/11/14. "Vinyl Chloride and Steatohepatitis." NIEHS Tamburro Symposium on Environmental Chemicals and Liver Disease, Louisville, KY.

Ceresa, Brian:

1. December 3, 2014: Department of Ophthalmology and Vision Sciences, University of Louisville

2. November 20, 2014: Department of Cell Biology, University of Oklahoma HSC

3. April 10, 2014: Department of Anatomy and Neurobiology, University of Louisville "Modulating EGFR trafficking to promote corneal epithelial wound healing"

Chen, Shao-yu:

1. Transcriptional and epigenetic mechanisms underlying ethanol-induced birth defects. University of Illinois, College of Medicine at Rockford, Rockford, IL, September, 24, 2014

2. Epigenetic and transcriptional mechanisms in the pathogenesis of Fetal Alcohol Spectrum Disorders. University of Illinois, College of Medicine at Peoria, Peoria, IL, August, 15, 2014

3. Transcriptional and epigenetic mechanisms underlying Fetal Alcohol Spectrum Disorders. University of Louisville, Louisville, KY, July 7, 2014

Clark, Geoffrey:

1. JGBCC Cancer colloquia

2. AACR Ras meeting Invited Poster

3. Swine in Biomedical research international research conference, invited Poster

Hein, David:

1. Liver Phase 2 Drug and Xenobiotic Metabolism. NIEHS Tamburro Symposium on Environmental Chemicals and Liver Disease, University of Louisville, Louisville, Kentucky, September 2014.

Kang, Y. James:

1. Plenary Lecture, "Milestones in stem cell and tissue engineering research", at the BIT's 7th Annual World Congress of Regenerative Medicine and Stem Cell, Haikou, China, Nov 14, 2014. "Tissue injury signaling and stem cell therapy for ischemic heart disease".

2. Invited Lectures: 4 lectures on Angiogenesis and clinical implication at University Catania, Catania, Italy, Oct 28-30, 2014.
   - "Angiogenesis – Basic Understanding";
   - "Angiogenesis in Tumors"
   - "Angiogenesis and Ischemic Diseases"
   - "Copper Promotion of Angiogenesis"

3. Plenary Lecture, "BioMet 14 – XIV PharmacoBioMetallics, Pisa, Italy, October 24-25, 2014, "Copper and myocardial regeneration"

4. Invited Seminar, Hiroshima University, Hiroshima, Japan, Sept 8, 2014. "Tissue injury signals and cell therapy for ischemic heart disease".

5. Invited Speaker, GuanDong Medical College, Zhanjiang, China, Aug 12, 2014. "Tissue injury signaling and stem cell therapy for ischemic heart disease".

6. Invited Speaker, Harbin Medical University Second Hospital, Harbin, China, Jul 31, 2014. "Stem cells and myocardial regeneration".

Lukashevich, Igor:

1. The 3rd Biotechnology World Congress, Festival City, Crown Plaza, Dubai, UAE, February 10-13, 2014.

2. American Society for Virology 2014 Annual Meeting, 21-25 June, Fort Collins.

3. The XVIth International Congress of Virology, Montreal, Canada, July 27 – Aug 1, 2014.

4. The 2014 Midwest Membrane Trafficking and Signaling Symposium. University of Louisville, October 3, 2014.

Matoba, Nobuyuki:

1. "Novel Cancer Immunotherapeutic Proteins Produced in Tobacco Plants" Cancer Therapeutics Colloquia, Brown Cancer Center, Louisville, KY, July 15, 2014.

2. "An oral vaccine made in tobacco plants" UofL Microbiology & Immunology Department Seminar, Louisville KY, October 30, 2014.
3. "Molecular Farming of Protein Pharmaceuticals: History and Perspective" Workshop on plant biotechnology for health related business, Niigata, Japan, December 2, 2014.

Palmer, Kenneth:

1. Palmer KE Invited Seminar in the Department of Microbiology and Immunology, University of Louisville School of Medicine. *Targeting the Glycan Shield for HIV Prevention.* October 2nd, 2014

2. Palmer KE Invited Keynote Address at the James Graham Brown Cancer Center Annual Retreat, Louisville KY. *Plant-made Recombinant Biologics*. October 17th, 2014.

Siskind, Leah:

1. Siskind LJ (2014) Role of glycosphingolipids in kidney disease. Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel. Invitation from Chairman Dr. Anthony Futerman.

2. Siskind LJ (2014) It's a bird, it's a plane, it's a resubmission! James Graham Brown Cancer Colloquia on Cancer Biology and Therapeutics. 10/1/2014

Song, Zhao-Hui:

1. Song ZH, Carrasquer A, Kumar P. Single Nucleotide Polymorphism in *CNR2*, Osteoporosis, and Novel Mechanisms of Selective Estrogen. BIT's 5th World Gene Convention, Haikou, China, November 2014

2. Song ZH, Kumar P. Tamoxifen is an allosteric modulator of the CB2 cannabinoid receptor International Cannabinoid Research Society Conference, Baveno, Italy, June, 2014.

States, J Christopher:

1. 'Disruption of Mitotic Progression by Arsenic', Nelson Institute of Environmental Medicine, New York University, 11/21/2014

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

Gupta, Ramesh:

Patents:

- Milk-Derived Microvesicle Compositions and Related Methods. R. Gupta, R. Munagala, F. Aqil and J. Jeyabalan; PCT filed in February 2014.

- Gupta R., Vadhanam, M. and Aqil, F. International patent, Australia - National Phase Application, Methods and compositions for controlled delivery of phytochemical agents. Int'l Appl No.: PCT/US09/36663, AU Appl No.: 2009223653, Docket No.: UN024/UN106-AU, ULRF No.: 08046. Issued September 2014.

- U.S. Continuation-in-Part Patent Application, ser. no. 13/429,601; filed March 26, 2013. R. Gupta, M. Vadhanam and F. Aqil. One US patent # US 8,858,995 B2, Issued October 2014.

Lukashevich, Igor:

Patents:

- Pushko, P., Lukashevich, I.S. (2014). IDNA vaccines and methods for using the same. U.S. Patent No. 8,691, 563.

Matoba, Nobuyuki:

Patent Award:

- U.S. Patent Number: 8802822 (award date: 8/12/2014)
  Title: Polypeptides having antiviral activity and methods for use thereof

Patent Application:

- International Patent Application No. PCT/US14/15861
  Title: Methods for producing antibodies

Palmer, Kenneth:

Invention Disclosure:

- Palmer KE and Fuqua J. Novel Oxidation-Resistant Griffithsin Variants.

Patent Application:

- Inventors: Palmer KE, Fuqua J, Matoba N. International Patent Application No. PCT/US14/46893. COMPOSITIONS FOR MUCUSAL DELIVERY, USEFUL FOR TREATING PAPILLOMAVIRUS INFECTONS ULRF Ref. No. 14006

DEPARTMENTAL COURSES

- Medical Pharmacology course to second year medical students. Dr. Steve Myers served as course director.

- Pharmacology and Dental Therapeutics course to dental students. Dr. David Hein served as course director.

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

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

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

  PhTx 660 – Principles of Drug and Chemical Action (Dr. Ceresa)
  PhTx 606 – Pharmacology Seminar (Drs. Clark and Nerland)
  PhTx 661 – Molecular Toxicology (Drs. Prough and Gavin Arteel)
  PhTx 625 – Scientific Writing (Dr. Gavin Arteel)
  PhTx 655 – Neuropharmacology (Dr. Song)
  PhTx 656 – Cardiovascular and Renal Pharmacology (Dr. Kang)
  PhTx 657 – Endocrine and Metabolic Pharmacology (Dr. Gavin Arteel)
  PhTx 658 – Selective Toxicity and Chemotherapy (Drs. Nerland and Siskind)
  PhTx 672 – Research Methods in Pharmacology & Toxicology I (Drs. Song and States)
  PhTx 673 – Research Methods in Pharmacology & Toxicology II (Drs. Song and States)
  PhTx 674 – Research Methods in Pharmacology & Toxicology III (Drs. Song and States)
  PhTx 675 – Research Methods in Pharmacology & Toxicology IV (Drs. Song and States)
  PhTx 618 – Biostatistics (Dr. Kidd)

STANDING COMMITTEES

Graduate Student Affairs and Curriculum Committee

Dr. Chris States (Chair)
Dr. Brian Ceresa (ex officio)
Dr. Geoff Clark (2014)
Dr. Gavin Arteel (2015)
Dr. Leah Siskind (2016)
Student rep: Pritesh Kumar
Student rep: Veronica Massey

Graduate Student Admissions and Recruitment Committee

Dr. Brian Ceresa (Chair)
Dr. Chris States (ex officio)
Dr. La Creis Kidd (2014)
Dr. Ramesh Gupta (2015)
Dr. Steve Myers (2016)

SIBUP/Grievance Committee

Nobuyuki Matoba (Chair)
Dr. Ramesh Gupta (2014)
Dr. Joe Song (2015)
Dr. Michael Merchant (2016)

Teaching Evaluation Committee

Dr. Steve Myers (Chair)
Dr. Don Nerland (2014)
Dr. Juliane Arteel (2015)
Dr. Gavin Arteel (2016)

Seminar Committee

Dr. Don Nerland (Chair)
Dr. Igor Lukaschevich (2014)
Dr. Gavin Arteel (2015)
Dr. Geoff Clark (2014; Chair 2015)

Events Committee

Dr. La Creis Kidd (Chair)
Dr. Nobuyuki Matoba (2014)
Dr. Juliane Arteel (2015)

Dr. Swati Joshi-Barve (2016)
Student rep: Pritesh Kumar

Wenzhou Medical University Task Force

David W. Hein (Chair)
Lu Cai
James Kang
Weinke Feng
Joe Song

DEPARTMENTAL EVENTS AND RECOGNITION

A retirement reception for all retiring/departing faculty and staff members was held June 10th at at the Peterson-Dumesnil House in Louisville.

The Department new faculty and student welcome was held August 14 at Captain Quarters in Prospect.

NIEHS Tamburro Symposium on Environmental Chemicals and Liver Disease was hosted at the University of Louisville in September. The speakers included Professor Jim Swenberg from the University of North Carolina who presented the annual William Waddell Seminar.

The annual Department of Pharmacology and Toxicology holiday party was held at the Melwood Arts Center in Louisville on December 9.

Inaugural Department Halloween Party

Inaugural Department Thanksgiving Celebration (with ugly sweater contest).

The Department of Pharmacology and Toxicology received first place in the first SMART – Deck the Doors Contest

2014 University of Louisville Cancer Education Program Class

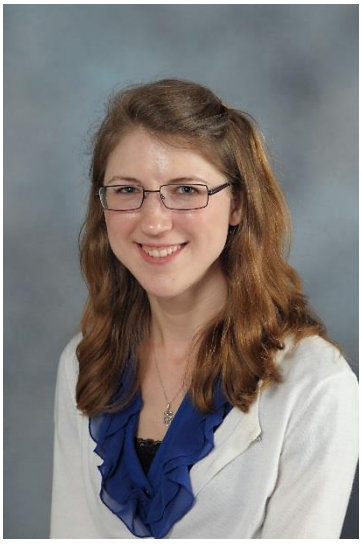
Aditya Barve
University of Louisville graduate
Faculty Mentor: David W. Hein, PhD
Research Project: Hepatocarcinogenic effects of 4,4 methylenedianiline (MDA) and obesogenic dietary components

Addison Bray
University of Louisville undergraduate
Faculty Mentor: Sham Kakar, PhD
Research Project: Combination of withaferin A and cisplatin eliminates ovarian cancer stem cells

Danielle C. Berea
University of Louisville medical student
Faculty Mentor: Carrie Lenneman, MD
Research Project: PACE: Examination of physical activity during chemotherapy

Thomas Brenzel
University of Louisville undergraduate
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: A proposed treatment algorithm for locally advanced unresectable pancreatic adenocarcinoma

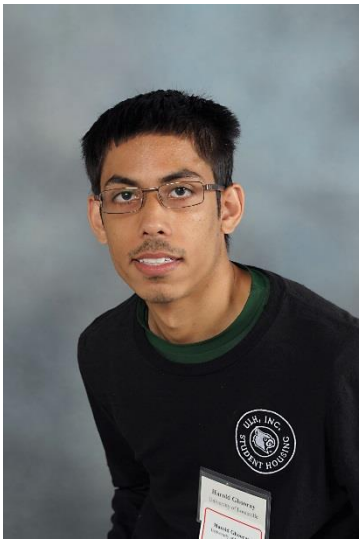
Adrienne M. Bushau
University of Louisville undergraduate
Faculty Mentor: Juliane I. Arteel, PhD
Research Project: Mechanistic insight into cinyl choloride-induced liver injury



Christine Dolin
University of Louisville undergraduate
Faculty Mentor: Gavin E. Arteel, PhD
Research Project: The hepatic "matrisome" responds dynamically to stress: Novel characterization of the ECM proteosome

Cameron S. Conway
University of Louisville undergraduate
Faculty Mentor: Leah Siskind, PhD
Research Project: Development of a shRNA library for high-throughput screening of sphingolipids in tumorigenesis

Harry Gao
University of Chicago undergraduate
Faculty Mentor: Sam Zhou, PhD
Research Project: Variability of Losartan as a combination therapy with oncolytic adenovirus



Harold B. Ghooray
University of Louisville graduate
Faculty Mentor: Shirish Barve, PhD
Research Project: Inhibition of S-adenosylhomocysteine hydrolase (SAHH) induces Fas ligand gene expression and apoptotic dean in leukemic T lymphocytes

Kendall Huddleston
University of Kentucky undergraduate
Faculty Mentor: Ramesh Gupta, PhD
Research Project: Biomarker significance of exosomes in the initiation and progression of breast cancer

Mary E. Hatch
University of Louisville medical student
Faculty Mentor: Nichola Garbett, PhD
Research Project: Calorimetry of the plasma proteome in patients with ovarian cancer

Jaison John
University of Louisville graduate
Faculty mentor: Chi Li, PhD
Research Project: The role of carcon chain and carbonyl group in AHL-induced caspace-9-dependent apoptosis

Alyssa Laun
University of Louisville graduate
Faculty Mentor: Zhao-hui Song, PhD
Research Project: Cannabigerol modulates the efficacy of cannabinoids on CB2 receptor

Sarah Mudra
Wheaton College undergraduate
Faculty Mentor: Elizabeth Riley, MD
Research Project: Breast cancer diagnosed through the mobile mammography van in Jefferson County, KY

Michael Mannen
University of Louisville undergraduate
Faculty Mentor: Geoffrey Clark, PhD
Research Project: Interaction of RIT and NORE1A in lung cancer

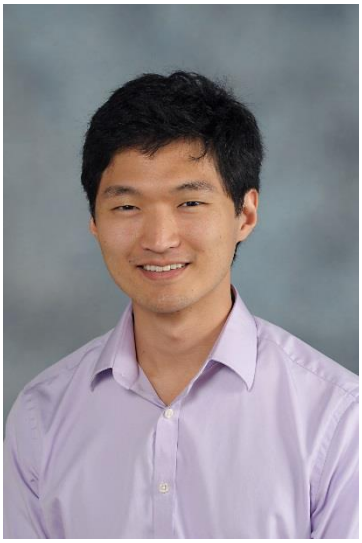
Alex Myers
University of Louisville undergraduate
Faculty Mentor: Susan Galandiuk, MD
Research Project: Identification on internal reference microRNA from the plasma of multiple cancer types

Bailey A. Nelson
Centre College graduate
Faculty mentor: Nobuyuki Matoba, PhD
Research Project: An investigation of therapeutic potential of plant-made cholera toxin B subunit, an orally active anti-inflammatory protein in a mouse model of acute cholitis

Thomas A. Packer, Jr.
University of Louisville graduate
Faculty Mentor: Sandra Sephton, PhD
Research Project: Circadian disruption: distress and sleep quality in breast cancer patients

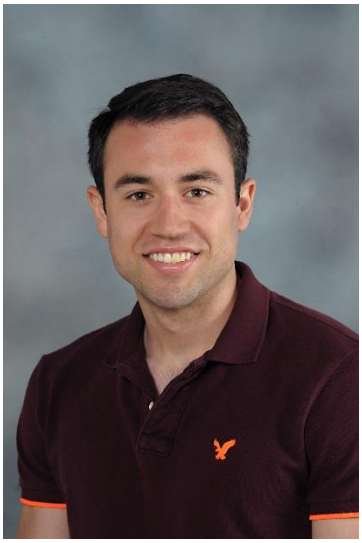
Conor O'Neill
University of Kentucky undergraduate
Faculty Mentor: Jason Chesney, MD, PhD
Research Project: Inhibition of PFKFB3 and BRAFV600E may be an effective treatment for metastatic melanoma

Deepa P. Patel
University of Louisville medical student
Faculty Mentor: Kelly McMasters, MD, PhD
Research Project: Inhibition of melanoma metastases by targeting regulator of G protein signaling 2 (RGS2)



David R. Patterson
University of Louisville medical student
Faculty Mentor: Carolyn Klinge, PhD
Research Project: Isolating miRNAs and their mRNA targets in lung adenocarcinoma tumors versus normal adjacent lung tissue

Eric C. Riedinger
University of Louisville medical student
Faculty Mentor: Jorge Gomez Gutierrez, PhD
Research Project: Developing an immunocompetent mouse lung cancer model for the evaluation of virotherapy effectiveness



Dillon S. Pender
University of Louisville medical student
Faculty Mentor: Lacey McNally, PhD
Research Project: Development of theranostic mesoporous silica nanoparticles for pancreatic cancer

Henry L. Roberts
University of Louisville undergraduate
Faculty Mentor: Susan Galandiuk, MD
Research Project: Plasma-based microRNA panel specific for colorectal neoplasia

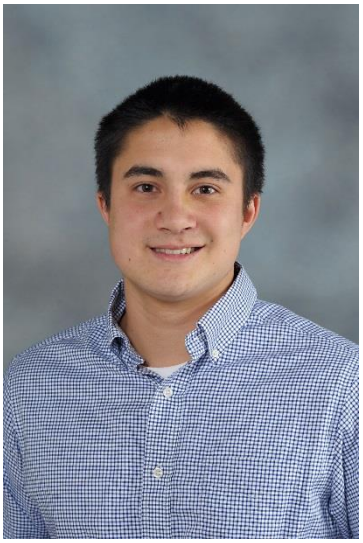
Angelica Ronke-Hervey
Indiana University undergraduate
Faculty Mentor: La Creis R. Kidd, PhD
Research Project: Impact of quercetin on miR-25 and cellular behavior in prostate cancer cell lines

Lee B. Sims
University of Louisville undergraduate
Faculty Mentor: Jill Steinbach, PhD
Research Project: Effects of nanoparticle morphology and surface modification on tumor penetration and distribution

Tejas Sangoi
Saint Louis University undergraduate
Faculty Mentor: Brian Ceresa, PhD
Research Project: Analysis of mutant epidermal growth factor receptor trafficking and signaling in lung cancer cells

Amy Song
Drexel University undergraduate
Faculty Mentor: Levi Beverly, PhD
Research Project: The role of the BH-4 domain in dictating the oncogenic potency of BCLxl.

Travis P. Spaulding
University of Louisville medical student
Faculty Mentor: Robert C.G. Martin, MD, PhD
Research Project: Predicting adverse events in patients undergoing hepatectomy – validation of preoperative nomogram and risk score



Christopher J. Ullum
University of Kentucky undergraduate
Faculty Mentor: Lacey McNally, PhD
Research Project: Evaluation of coated gold nanoparticles targeted with Syndecan-1 for detection of pancreatic adenocarcinoma

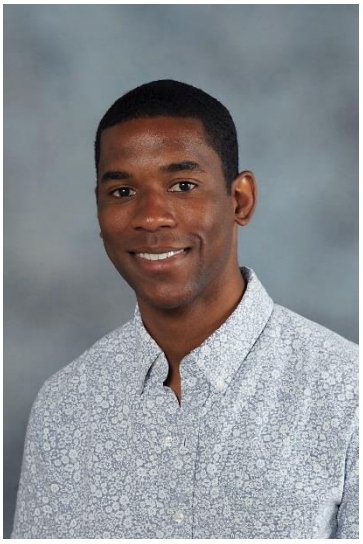
James Stewart
Western Kentucky University undergraduate
Faculty Mentor: J. Christopher States, PhD
Research Project: Recombinant expression of codon-optimized ANAPC2 and ANAPC11

Adrienne Voelker
University of Notre Dame undergraduate
Faculty Mentor: Brian Ceresa, PhD
Research Project: Modulating epidermal growth factor receptors via small targeting peptides

Govind Warrier
University of Louisville medical student
Faculty Mentor: Jason Chesney, MD, PhD
Research Project: Targeting cytosolic aspartate aminotransferase in human pancreatic and lung carcinoma using a novel inhibitor in vitro

Lindsey Wattley
Massachusetts Institute of Technology undergraduate
Faculty Mentor: Sucheta Telang, MD
Research Project: Examination of the effects of small molecular inhibition of PKFFB4 on the cell cycle

Ariel Washington
University of Louisville graduate
Faculty Mentor: Karen Kayser, PhD
Research Project: Is there a relationship between patient worry and preferences for follow-up care after curative treatment for lung cancer?



Dexter W. Weeks
University of Louisville medical student
Faculty Mentor: Levi Beverly, PhD
Research Project: Expression and analysis of GST-tagged UBAR5 protein