Table of Contents

Pg 1:
- New Members to Dept.
- New Grants

Pg 2:
- New Grants cont.

Pg 3:
- Recent Publications
- Faculty Awards

Pg 4:
- Recent Graduations
- Student Awards
- Support the DTCB Retreat

Pg 5:
- Student Awards cont.
- DTCB Student Forum Elected Members
- The Dr. Matt Devalaraja Graduate Endowments

NEWSLETTER ITEMS

Want to include something in the next newsletter? Send your stuff to Morgan Rothermel at Morgan.Rothermel@uky.edu



New Members to the Department:



Dr. Will Fong received his PhD in Biochemistry at the Hong Kong University of Science and Technology. He then moved to the United States to receive his postdoctoral training at The University of Texas MD Anderson Cancer Center and Northwestern University. In April 2021, he joined the University of Kentucky as an assistant professor.

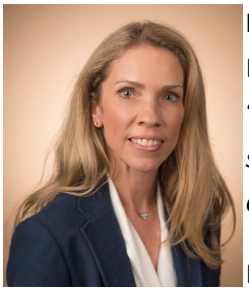
His current research program is to understand aberrant epigenetic and transcriptional regulation in prostate cancer with the use of functional genomics, proteomics and metabolomics approaches and to translate such knowledge into clinical applications.



Dr. Changhai Tian graduated from the Chinese Academy of Sciences in 2006 with a doctorate in cancer cell biology. He received his post-doctoral training in the Department of Pharmacology and Experimental Neuroscience at University of Nebraska Medical Center from 2006 to 2009, where his research was focused on the interaction between immune system and central nervous system during the pathogenesis of neurodegenerative disorders, such as HIV-associated dementia. In 2010, he was promoted to an instructor in the department of pharmacology and experimental neuroscience, and developed stem-cell based therapeutic strategies for neurodegenerative disorders, such as Parkinson's disease and Alzheimer's disease. In 2015, he joined the Department of Cellular and Integrative Physiology and started to work on the pathophysiological mechanisms of chronic heart failure. In 2019, he received his career development award from the American Heart Association, and then was promoted to assistant professor in 2020.

His research experience spans the fields of tumor cell biology, redox biology, neuroimmunology, stem cell biology and cardiovascular research. Recently, his research program was sponsored by NIH R01 grant aiming at understanding the cardiac-cerebral syndrome mediated by extracellular vesicles during the progression of chronic heart failure, and focusing on the underlying mechanisms by which damaged organs communicate with remote organs during the disease process to further identify the therapeutic targets.

New Grants (New grants are shared once the department receives PADR 1 stating the account has been created):



Kate Zaytseva:

NCI R01, "Targeting Lipid Metabolism in Colorectal Cancer". Total funding: $1,733,774 over 5 years.
"*The studies in this proposal with test if aberrant activation of lipid metabolism promotes cell survival and sustains metastatic capabilities of colorectal cancer cells and that CD36-mediated FA uptake decreases efficacy of FASN inhibitors in colorectal cancer.*"

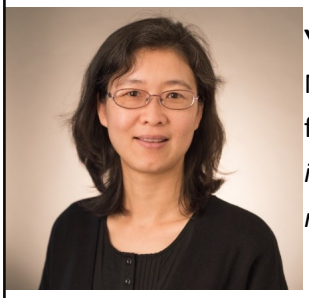
NCI R03, "Fatty Acid Synthase in Regulation of UDP-GlcNAc Synthesis in Colorectal Cancer". Total funding: $153,000 over 2 years.

New Grants continued (New grants are shared once the department receives PADR 1 stating the account has been created):



Richard Higashi:
P30 CARES Pilot, "Metabolism-linked Epigenetic Mechanism in Arsenic Carcinogenesis". Funding: $50,000 direct costs.

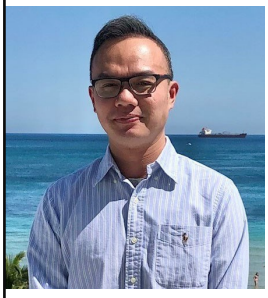
Andrew Lane:
Subcontract PI, NIAID R01, "Understanding Mechanisms and Consequences of T cell Co-receptor Regulated RNA Maturation". Total funding: $700,000 over 5 years.



Ying Liang:
NHLBI R01, "Latexin function in the maintenance and regeneration of the hematopoietic system". Total funding: $1,526,716 over 4 years. "*The studies in this proposal is to investigate pharmaceutic and genetic inhibition of hematopoietic stress regulatory gene, latexin, in radiation protection and stem cell rejuvenation.*"



Changhai Tian:
NHLBI R01 (MPI), "Nrf2 regulation of oxidative stress in heart failure and extra vesicular communication". Total funding: $2,565,154 over 4 years. "*The studies in this proposal is aiming at understanding the molecular mechanisms of Nrf2 signaling dysregulation, and investigating the inter- and intra-organ communications mediated by extracellular vesicles (EVs) in the progression of chronic heart failure to clarify the roles of EV-enriched microRNAs in the Nrf2-signaling dysregulation and test the possibility to develop EV-based therapeutic strategies for the cardiac-cerebral syndrome*."



Will Fong:
NCI R03, "E2F family transcription factors are directly regulated by TRIM28 to promote castration-resistance in prostate cancer". Total funding: $153,000 over 2 years. "*The studies in this proposal will characterize E2F as a crucial downstream target of TRIM28 and targeting TRIM28-E2F axis may suppress castration resistant prostate cancer progression*."



Luksana Chaiswing:
Markey Women Strong, "Targeting Cell Powerhouses Mitochondria to Enhance Radiation Treatment Outcomes". Total funding: $50,000 for 1 year. "*Goals: To determine if mitochondria can be used as target to improve the efficacy of radiation therapy*."

Recent Publications:

Teresa Fan, Andrew Lane, Richard Higashi:
1. Vicente-Munoz, S., P. Lin, T.W-M. Fan, A.N. Lane (2021) Chemoselection with isotopomer analysis using 15N Cholamine. Anal Chem. 93:6629-6637
2. P. Lin, L. Dai, D.R. Crooks, L. Neckers, R. M. Higashi, T. W-M Fan, A. N. Lane (2021)NMR methods of determining lipid turnover via stable isotope resolved metabolomics Metabolites 11, 202

Jin-Ming Yang:
1. Jiang T, Chen X, Ren X, Yang JM, Cheng Y. Emerging role of autophagy in anti-tumor immunity: Implications for the modulation of immunotherapy resistance. Drug Resist Updat. 2021 May;56:100752. doi: 10.1016/j.drup.2021.100752. Epub 2021 Feb 16.

Xiaoqi Liu:
1. Zhang, Z., Cheng, L., Zhang, Q., Kong, Y., He, D., Li, K., Rea, M., Wang, J., Wang, R., Liu, J., Li, Z., Yuan, C., Liu, E., Fondufe-Mittendorf, Y., Li, L., Han, T., Wang, C., and Liu, X., (2021) Co-targeting Plk1 and DNMT3a in advanced prostate cancer, Advanced Science, doi: 10.1002/advs.202101458. 8(13): e2101458. PMID: 34051063.

Faculty Awards:

Dr. Daret St. Clair:
2021 Markey Faculty Mentorship Awardee

Dr. Nathan Vanderford:
2021 UK Ken Freedman National Academic Advising Association Innovation in Advising Awardee
2021 UK Excellent Undergrad Research Mentor Awardee
2021 Markey Faculty Mentorship Awardee



Faculty Activity:

Jin-Ming Yang:
Clinical Oncology (CONC) Study Section. June 28 and 29

Tadahide Izumi:
National Cancer Institute Special Emphasis Panel. May 26 and 27

Nathan Vanderford:
1. National Institute of Allergy and Infectious Diseases R25 Research Education Program Special Emphasis Study Section. April 15
2. National Institutes of Health, Harnessing Data Science for Health Discovery and Innovation in Africa U2R Research Training Program Special Emphasis Study Section. June 22

Andrew Lane:
ZCA1 SRB-P (O1) S, June 17 and 18

Kate Zaytseva:
NIH ZRG1 OBT-Y (55), Basic Research in Cancer Health Disparities. June 29 and 30

Ying Liang:
1. National Institutes of Health, Cellular Mechanisms in Aging and Development. June 2021
2. National Institutes of Health, Special Emphasis Panel, Post-Acute Sequelae of SARS-COV-2 Infection Initiative. April 2021

Recent Graduations:





Dr. Fan Chen. Mentored by Dr. Christine Brainson. Defended April 2021.



Our first cohort of Forensic Toxicology & Analytical Genetics students!

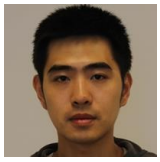
L to R: Jonathan Gallup, Isabel Snyder, Cara Allen, Moumita Dam. (Not pictured: Taylor Scannapieco)



Dr. Stephanie Rock. Mentored by Dr. Mark Evers. Defended May 2021.

Dr. Yulan Sun Memorial Outstanding Graduate Student Award:

The Yulan Sun's Memorial Outstanding Graduate Student Award recognizes graduate students for overall outstanding achievement in the graduate program. Congratulations to our co-recipients!

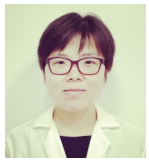


Fan Chen,
Dr. Christine Brainson lab.



James Drury,
Dr. Kate Zaytseva lab.

MCC Research Day Award:



Dr. Cuiping Zhang, postdoc in Dr. Ying Liang's lab, earned a 2nd place abstract award at the MCC Research Day.

Abstract title: "Latexin inactivation in microenvironment suppresses leukemia development through osteopontin-mediated suppression of leukemia stem cells and activation of immune surveillance"

Congratulations!

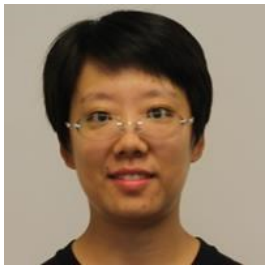
Support the DTCB Retreat:

We are pleased to announce that we will again be having our annual Department of Toxicology & Cancer Biology Retreat on August 18, 2021 at Spindletop Hall in Lexington, KY. During the retreat, there will be oral and poster sessions for both of our academic programs: MS/PhD in Toxicology & Cancer Biology and Master's of Forensic Toxicology & Analytical Genetics. The mission of this retreat is to disseminate research and to spur collaboration amongst our faculty, staff, and students.

We are seeking donations to help support the costs associated with a large departmental retreat, such as oral and poster presentation awards, refreshments, etc. Any contributions that you would be willing to donate would be greatly appreciated. In addition, your information or company's information and logo will be recognized in our DTCB Retreat Program and in our DTCB Quarterly Newsletter. **Donation Link**: **https://bit.ly/3e6C4X7**. Thank you for your consideration!

College of Medicine Trainee Poster Session Winners:

Congratulations to three of our PhD students!



Na Ding
3rd Place
"Elucidating peroxiredoxin IV secretion via unconventional protein secretory pathway"



Jenni Ho
2nd Place
"Extracellular vesicles released after cranial radiation contain protein markers of neuronal injury and induce immune activation"



Caitlin Miller
3rd Place
"Adaptation of redox state in cancer cells that survive radiation"

DTCB Student Forum Elected Members:



President, **Kendall Simpson**



Vice President, **Katelyn Jones**



DTCB PhD Graduate Student Congress Rep, **Saptadwipa Ganguly**



Forensic Toxicology & Analytical Genetics Graduate Student Congress Rep, **Kennedy Plude**

The Dr. Matt Devalaraja Graduate Endowments:

Dr. Matt Devalaraja, DTCB alum, has created, through UK's Philanthropy Office, two endowments:

1. **Graduate Student Thesis Award**: The Dr. Madhav and Dr. Radhika Devalaraja Outstanding Graduate Student Thesis Award will be used to support an annual award for a College of Medicine graduate student, entering their final year of study, whose thesis is inspiring and innovative and displays high-impact subject matter research. A committee, appointed by the Dean of the College, will determine the recipient of the award, which may be in excess of $1,000. The award will be given during the College's Annual Commencement ceremony.

2. **Graduate Student Career Support Fund**: The Dr. Matt Devalaraja Graduate Student Career Support Fund will be used to provide resources for graduate students in the Department of Toxicology and Cancer Biology to expand their knowledge of Toxicology careers, and to research, explore, and engage in career discovery opportunities. Uses of the Support Fund may include, but are not limited to, conference fees and expenses, professional society memberships, internships, and/or travel fees and expenses associated with student career research and exploration opportunities.