DEPT. OF TOXICOLOGY AND CANCER BIOLOGY NEWSLETTER

Volume 5, Issue 1

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SUPPORT THE DEPARTMENT

Gifts to the department will be directed toward emerging needs and opportunities for our students, faculty research support, and unrestricted support for the department.

Click here to learn more and donate.

Thank you for your support!

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

Dr. Luksana Chaiswing (PI in grant below):



National Institute of General Medical Sciences, "Role of RedoxEVs in Glioma/ Glioma-Treatment

Induced Cognitive Impairment." Total funding: $38,250 for 4 months. The goal of this grant is to elucidate the mechanism and metabolism by which RedoxEVs induce neuronal injury.



Dr. Teresa Fan (PI in grant below):

Research Institute at Nationwide Childrens Hospital, "Modulation of Asparagine Bioavailability and Stress Response Signaling to Enhance T Cell Robustness and Maximize Immunotherapy" Total funding: $60,435 for 1 year.



D. Eva Goellner (PI in grants below):

National Institute of General Medical Sciences, "Pilot: DNA Mismatch Repair -Dependent Metabolic Adaptation After Chemotherapy." Total funding: $50,999 for 1 year.



Dr. Xia Liu (PI in grant below):

National Cancer Institute, "University of Kentucky Markey Cancer Center—Cancer Center Support Grant Pilot: Circulating Neutrophils-Tailored Cancer Biomarker Discovery and Therapy." Total funding: $76,500 for 1 year.

Dr. Nathan Vanderford (PI in grant below):



American Cancer Society, "Summer Health Experience (SHE) in Oncology Program" Total funding: $25,000 for 1 year. The Summer Healthcare Experience (SHE) in Oncology Program aims to empower Kentucky high school student leaders who identify as female with experiences, activities and discussions that introduce them to the incredible breadth of career and leadership opportunities in the field of oncology. SHE in Oncology Program participants work with other students from 5 different collaborating institutions that are running their own SHE Programs. The other institutions include the University of Texas at Austin, the University of Chicago, the University of Michigan and the University of Pennsylvania.

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

Dr. Nathan Vanderford (PI in grant below), continued:

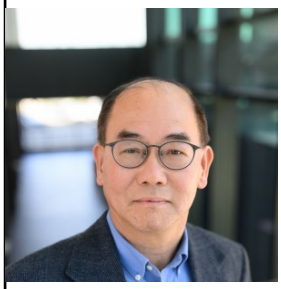
Research! America, "Building Bridges Symposium: Fostering Understanding Between Lawmakers and the Scientific Community in Kentucky." Total funding: $1,300 for 4 months. This project funds a poster session at the Kentucky State Capitol in which graduate students and postdoctoral fellows from the University of Kentucky and the University of Louisville will engage with lawmakers about the significance of basic science research, its contributions to medical advancements, and its economic impact.



Dr. Qiou Wei (PI in grant below):

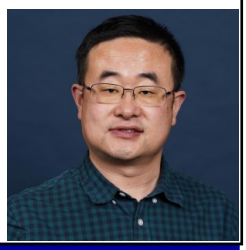
National Institute of General Medical Science, "Pilot: Understanding the Role of Sulfiredoxin in Glucose Metabolism in Non-Small Cell Lung Cancer." Total funding: $50,999 for 1 year.





Dr. Jin-Ming Yang (PI in grant below):

National Cancer Institute, "Novel Strategy to Augmenting Immunotherapy Against Melanoma." Total funding: $177,259 for 1 year. This proposal is aimed at evaluating and defining nelfinavir, an FDA-approved and commonly used antiviral agent, as an immune-sensitizer for enhancing cell-based therapy against melanoma. This study may lay groundwork and provide rapid path to enter clinical trials of nelfinavir for treatment of patients with immune poor-responsive melanoma, an aberrantly aggressive and fatal disease.



Dr. Yanquan Zhang (PI in grant below):

American Cancer Society, IRG 2-152-34, "PLK1 Phosphorylation of NEUROD1 in Prostate Cancer Lineage Plasticity." Total funding: $40,000 for 1 year.

Recently Accepted or Published Manuscripts:

Dr. Christine Brainson:

Tanner J. DuCote, Xiulong Song, Kassandra J. Naughton, Fan Chen, Daniel R. Plaugher, Avery R. Childress, Abigail R. Gellert, Erika M. Skaggs, Xufeng Qu, Jinze Liu, Jinpeng Liu, Fei Li, Kwok-Kin Wong, **Christine F. Brainson**; EZH2 Inhibition Promotes Tumor Immunogenicity in Lung Squamous Cell Carcinomas. *Cancer Research Communications* 1 February 2024; 4 (2): 388–403. https://doi.org/10.1158/2767-9764.CRC-23-0399

Dr. Andrew Lane:

1. G A. Holling, C.A. Chavel, A. P Sharda, M. M. Lieberman, C. M. James, S. M. Lightman, J.H. Tong, G. Xiao, T. R. Emmons, T. Giridharan, S. Hou, A. M Intlekofer, **R.M. Higashi, T. W-M. Fan, A. N. Lane**, K. H. Eng, B. H Segal, E. A Repasky, K. P Lee, S. H Olejniczak (2024). CD8+ T cell metabolic flexibility elicited by CD28-ARS2 axis-driven alternative splicing of PKM supports antitumor immunity *Cellular & Molecular Immunology* **21**, 260–274

2. S. Daneshmandi, C. R. MacDonald, M. Pandey, J.E. Choi, M. Goruganthu, N. Roberts , **T. W.M. Fan, R. M. Higashi, A. N. Lane,** P. Singh, J. Wang, P. L. McCarthy, E. A. Repasky, H. Mohammadpour (2024). Myeloid-derived suppressor cell mitochondrial fitness governs chemotherapeutic efficacy in hematologic malignancies. *Nat. Commun*. **accepted**

Faculty Activity:

Dr. Christine Brainson:
Dr. Brainson is currently serving grant review panels for the Department of Defense Lung Cancer Research Program and for the NIH Translational Immuno-Oncology study section.

Dr. Changhai Tian:
Dr. Tian is currently serving as an ad hoc reviewer of AHA 2024 IPA Basic Sciences 1 LOI, January 17, 2024.

Dr. Tian acted as a reviewer on the Second Century Early Faculty Independence Award (SCEFIA) Review Committee and the 2024 ORAU Ralph E Powe Junior Faculty Enhancement Awards.

In Person Workshop: Large Extracellular Vesicles at International Society for Extracellular Vesicles annual meeting March 4-5, 2024 in Columbus, OH.

Oral presentation at University of Kentucky Department of Physiology. “Heart-Brain Communication Following Myocardial Injury and Cardiogenic Dementia.” March 29, 2024

Dr. Nathan Vanderford:
Ad Hoc Member, National Institutes of Health, National Cancer Institute Subcommittee F Institutional Training & Education Study section (2024/05 NCI-F)

Dr. Yekaterina Zaytseva:

NCI/BMCD Study Section

New Faculty Member:



Dr. Eunus Ali: Dr. Eunus Ali has arrived as a tenure-track Assistant Professor in the regular title series. Welcome to the department!

Research Interests: Dr. Ali studies the complex network of signaling pathways within cells that regulate metabolism, epigenetics and it’s effects on changes in cellular metabolism, and immunometabolism. He further studies cancers and their metabolic effects, epitranscriptomics (chemical changes to RNA to regulate gene expression and protein synthesis), and metabolomics.

Lab Activity:

Dr. Luksana Chaiswing's Lab:

Nolan Marcum (Junior) is one of twelve undergraduate research students to represent the University of Kentucky for Posters at the Capitol, an annual event held to educate Kentucky state legislators of the importance of it's undergraduate research on March 7, 2024.

"I find great fulfillment in research as it seamlessly intertwines my passion for addressing the cancer crisis in Kentucky with my yearning to grow academically."

Dr. Yekaterina Zaytseva's Lab:

Chakrapani Gudlavalleti is participating in the University Research Internship/Paul Laurence Dunbar High School MSTC Program.

02/2024 1st place (Environmental Science) - 38th Annual Kentucky American Water Science Fair at Fayette County Public Schools

02/2024 2nd place (Environmental Science) - Regional Ky Science Fair

02/2024 NASA Earth System Science Award

Faculty Awards and Recognitions:

Dr. Nathan Vanderford:
University of Kentucky, Teachers Who Made a Difference Recipient.

Dr. Eva Goellner:
University of Kentucky, Teachers Who Made a Difference Recipient.

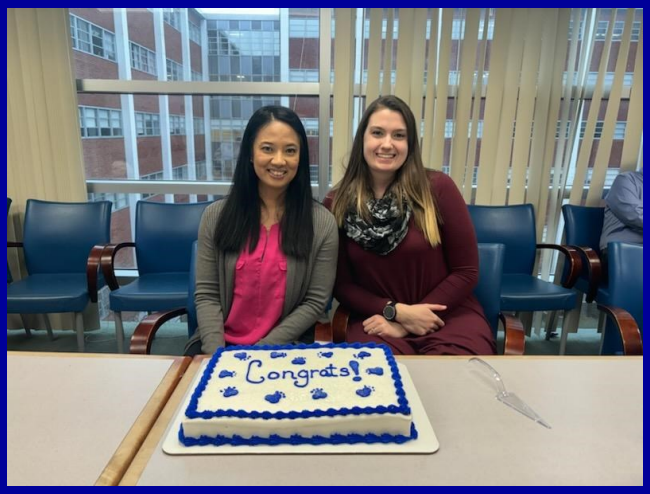


Congratulations!



Dr. Chrispus Ngule successfully defended his thesis on March 11, 2024. Dr. Jin-Ming Yang served as Ngule's mentor with additional committee members Drs. Xia Liu, Binhua Zhou, and Nathan Vanderford.

Chrispus will now go to Harvard University for his post-doctoral training!



Dr. Caitlin Miller successfully defended her thesis on January 16, 2024. Dr. Luksana Chaiswing served as Miller's mentor with additional committee members Drs. Daret St Clair, Edward Kasarskis, Qiou Wei, and Tianyan Gao.



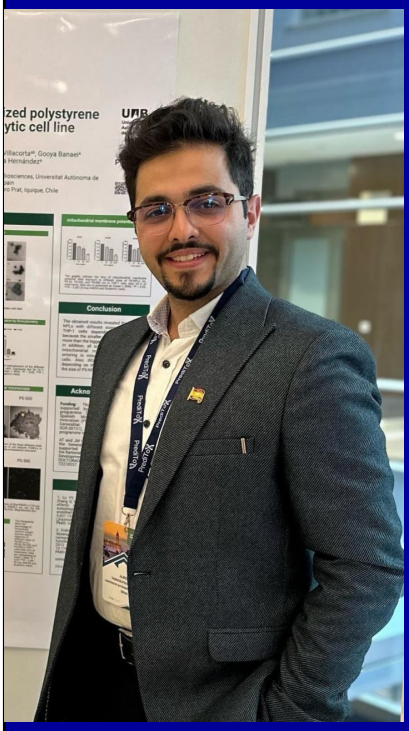
Welcome to our new students!

New PhD Students:

(L to R): Mansoureh Nouri and Qingxuan Li







DTCB Welcomes Visiting Student, Alireza Tavakolpournegari!!

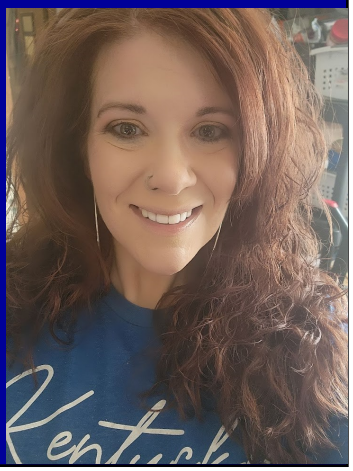
I am Alireza Tavakolpournegari, a visiting student at the Department of Toxicology and Cancer Biology, University of Kentucky. My academic background started in the field of Genetics and Cellular-Molecular Biology with my Bachelor's degree and was pursued with my Master's program in Iran, where I have been involved in cancer research since 2017. Then I continued the research through my Ph.D. program at the Autonomous University of Barcelona, Spain in 2019. This academic journey resulted in learning the basics in this field, sharing ideas, and publishing several scientific papers as the outcome of my research.

Currently, I am focused on exploring the toxic and carcinogenic effects of nanoplastics on human health as an environmental pollutant, working under the supervision of Dr. Wei at the University of Kentucky. My previous research in the academic group of mutagenesis at the Autonomous University of Barcelona has provided me with a strong foundation in understanding the alterations in molecular and cellular mechanisms of human cells in response to nanoplastics, which I now apply to investigate the carcinogenic impacts of nanoplastics.

I am passionate about advancing our understanding of the toxic and carcinogenic effects of nanoplastics and their implications for human health. Looking ahead, I aim to contribute further to this field through collaborative research and innovative solutions.

New Business Office Staff Member:

Cherish Oliver: Cherish Oliver joined the DTCB Business Office staff as Administrative Support Associate I. She received her MBA in Healthcare Management & Leadership in 2021 and has worked at UK's healthcare campus since 2023. Opportunity for professional growth and development led her to transfer from a clinical setting to this department. In her free time, Cherish spends time sewing, attending music festivals, and providing care for her six (6) animals! She currently has 1 dog (a chiweenie!) and five (5) cats in all varieties of colors. Always down for a good time, Cherish has gone skydiving, bungee jumping, and ridden a roller coaster on top of a skyscraper. She has been with her partner for 15 years and they share one 22 year old son.



DTCB Faculty presents at Serican Academy of Urology Annual Meeting in Cancun, Mexico!



Pictured (L to R): Yanquan Zhang, Hsin-Sheng Yang, Xiaoqi Liu, Qiou Wei, Zhiguo Li, Will Fong, and Jinghui Liu

DTCB faculty traveled to Cancun, Mexico to provide oral presentations at the Serican Academy of Urology Annual Meeting December 26-29, 2023!

Dr. Xiaoqi Liu: Meeting Organizer

Dr. Will Fong: "The Role of TRIM28 in Prostate Cancer"

Dr. Zhiguo Li: "Enhancing the Efficacy of Immunotherapy in Prostate Cancer"

Dr. Jinghui Liu: "CK1 in Enzalutamide Resistance of Prostate Cancer"

Dr. Qiou Wei: "Oncogenic Function of Prx4 in Prostate Tumorigenesis"

Dr. Hsin-Sheng Yang: "Targeting the Plk1/Pdcd4/mTORC2 Signaling to Treat CRPC"

Dr. Yanquan Zhang: "BRD4 Regulation in Prostate Cancer"

"I knew I wanted to do something in medicine or science because there was no cause or cure for what I had—that was my biggest reason for wanting to go to college."



Jerika Durham featured in College of Medicine Newsletter. Read more : https://medicine.uky.edu/news/first-generation-grad-student-jerika-durham-has-2024-02-29t14-04-50



DTCB PhD Students volunteer to judge the Fayette County Public Schools (FCPS) District Science Fair 02.03.2024!

Pictured (L to R): Andrew Shinkle, Felix Oyelami, Christian Gosser, Kevin Fulp, Niyi Obaleye, Jerika Durham, Kassie Naughton, Breanna Knicely, and Amos Akinyemi

Spring 2024 Semester: DTCB Monday Seminars
12:00-1:00 PM
MN 463

Jan 8 — Student Seminar: Katelyn Jones (Dr. Zaytseva)

Jan 22 — Student Seminar: Chrispus Ngule (Dr. Jimmy Yang)

Jan 29 — Student Seminar: Kendall Simpson (Dr. Zaytseva)

Feb 5 — Dr. Gustavo Miranda-Carboni, University of Tennessee (Dr. Brainson)

Feb 12 — Dr. Di Zhao, MD Anderson Cancer Center (Dr. Wei)

Feb 19 — Dr. Bing Xia, Rutgers Cancer Institute (Dr. Jimmy Yang)

Feb 26 — Dr. Lizhong Wang, University of Alabama Birmingham (Dr. HS Yang)

Mar 4 — Student Seminar: Xinyi Wang (Dr. Kate Zaytseva)

Mar 18 — Dr. Huadong Pei, Georgetown University (Dr. Wei)

Mar 25 — Dr. Kexin Xu, UT Health Science Center – San Antonio (Dr. Fong)

Apr 1 — Dr. Bo-Jui Chang, UT Southwestern (Dr. Xiao)

Apr 8 — Dr. Raquel Buj, University of Pittsburgh (Dr. Brainson)

Apr 15 — Dr. Qianben Wang, Duke (Dr. Li)

Apr 22 — Dr. Weixing Zhao, UT Health at San Antonio (Dr. Xiaoqi Liu)

Apr 29 — Student Seminar: Courtney Kelson (Dr. Zaytseva)

May 6 — Dr. Chonghui Cheng, Baylor College of Medicine (Dr. Xia Liu)

Fall 2023 Semester: DTCB Faculty Grant Talk Series
12:00-1:00 PM
HKRB 410

Jan 26 — Dr. Kate Zaytseva

Feb 9 — Dr. Luksana Chaiswing

Mar 1 — Dr. Will Fong

Mar 22 — Dr. Xia Liu

Apr 12 — Dr. Tadahide Izumi

Apr 26 — Dr. Guan-Yu Xiao

Spring 2024 Semester: DTCB Trainee Talk Series
12:00-1:00 PM
MN 463

Jan 12 — Amos Akinyemi (Li) and Han Cong (Fong)

Jan 19 — Mariah Geisen (Zaytseva) and Rakibul Alam (Li)

Feb 2 — Maria Nur (Liu) and Fatemeh Seilani (Liu)

*in MN 263

Feb 16 — Hamed Maasoumyhaghighi (Liu) and Mohammad Farahani (Liu) *in MN 263

Mar 8 — Sai Wu (Liu) and Min Zhang (Liu)

Mar 29 — Kevin Fulp (Xiao) and Niyi Obaleye (Xiao)

Apr 19 — Avery Childress (Brainson) and Christian Gosser (Brainson)

May 3 — Dave-Preston Esoe (Brainson) and Sarah Alqithami (Orren)

Student Forum:

- March 22, 2024—Mid-Semester Cookie Time (2 pm—3 pm, NURS 213)

The Forensic Poster Session will be held by the 2023 graduating class of the Forensics program. The posters describe the students' internship experiences.

Date: Thursday, May 4th

Time: 1:00 PM

Location: BBSRB Atrium



Upcoming Doctoral Defense Seminars:

April 19, 2024: Kassandra Naughton NURS 115 1PM—2 PM

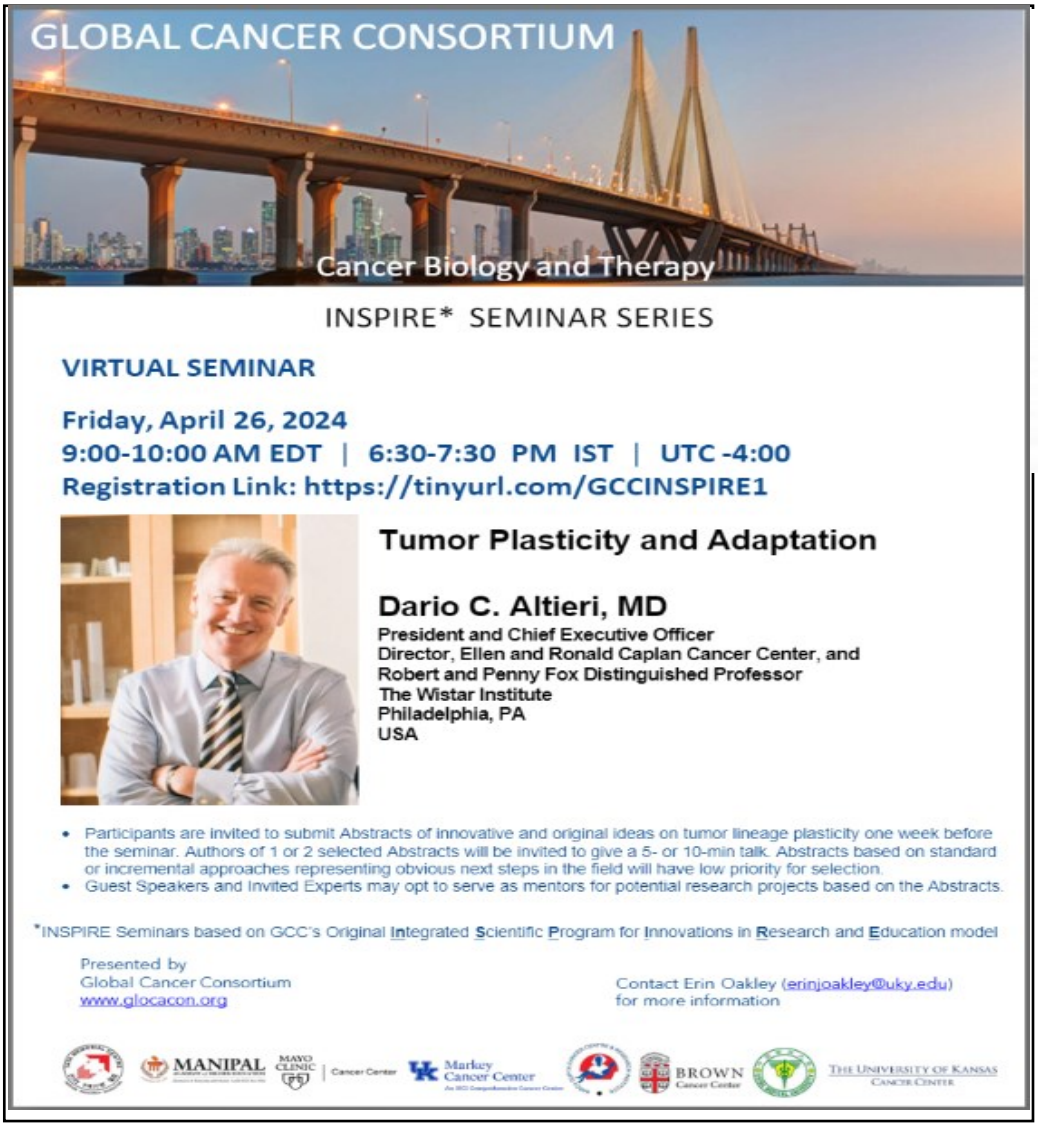
April 23, 2024: Aziza Alshahrani MDS 223 2 PM—3 PM

April 24, 2024: Katelyn Jones MN 463 10 AM—11 AM

April 25, 2024 : Kendall Simpson MN 263 1 PM—2 PM

May 6, 2024: Saptadwipa Ganguly HKRB 150 10 AM—11 AM

Coffee will be served alongside snacks or lunch for all attendees!





"When life gives you rain, pair it with a cute set of boots!"

NEWSLETTER ITEMS

Want to include something in the next newsletter? Send your stuff to Ashley Cowan at ToxAndCancerBio@uky.edu

