DEPT. OF TOXICOLOGY AND CANCER BIOLOGY NEWSLETTER

Volume 3, Issue 2

Table of Contents

Pg 1:
- New Grants
- Recent Publications

Pg 2:
- Faculty Activity
- Lab Activity

Pg 3:
- Student Activity
  - Award Winners
  - PhD Graduation
  - Forensics Article

Pg 4:
- Student Activity cont.
  - Forensics Graduation and Poster Session
  - Student Forum Activities

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.

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Thank you for your support!

THANK YOU!

Dr. Michael and Mrs. Deborah Graziano gifted $2,000 to the department in conjunction with One Day for UK. We appreciate your ongoing support!

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

Kate Zaytseva: Has joined the University of Kentucky's Superfund Research Center as a Co-I on Project 1. The goal of Project 1: Superfund Chemicals, Nutrition, and Multi-Organ Cardiovascular Risk is to understand the signaling pathways and metabolic or biological changes by which bioactive nutrients modulate impacts of acute or chronic exposure to persistent organic pollutants such as PCBs and PFAS.

Click here for more information on the Superfund Research Center.

Recently Accepted or Published Manuscripts:

Luksana Chaiswing:
Luksana Chaiswing, Chontida Yarana, William St. Clair, Artak Tovmasyan, Ines Batinic-Haberle, Ivan Spasojevic, Daret St. Clair, "A Redoxable Mn Porphyrin, MnTnBuOE-2-PyP5+, Synergizes with Carboplatin in Treatment of Chemoresistant Ovarian Cell Line", Oxidative Medicine and Cellular Longevity, vol. 2022, Article ID 9664636, 16 pages, 2022. https://doi.org/10.1155/2022/9664636

Will Fong:
1. Resurreccion EP, **Fong KW***. The Integration of Metabolomics with Other Omics: Insights into Understanding Prostate Cancer. Metabolites. 2022, 12(6), 488
2. Lu X, **Fong KW**, Gritsina, Wang F, Baca SC, Brea LT, Berchuck JE, Spisak S, Ross J, Morrissey C, Corey E, Chandel NS, Catalona WJ, Yang X, Freedman ML, Zhao JC, Yu J. HOXB13 suppresses de novo lipogenesis through HDAC3-mediated epigenetic reprogramming in prostate cancer. Nat Genet. 2022 May;54(5):670-683

Eva Goellner:
Miller, A.K., Mao, G., Knicely, B.K., Daniels, H.G., Rahal, C., Putnam, C., Kolodner, R., **Goellner, E.M**. "Rad5 and its Human Homologs, HLTF and SHPRH, are Novel Interactors of Mismatch Repair." In Press for Frontiers in Cell and Developmental Biology – Mechanistic Studies of Genome Integrity, Environmental Health and Cancer Etiology.

Andrew Lane:
T. Chihanga, S. Vicente-Munoz, S. Ruiz-Torres, B. Pal , M. Sertorio, P. R. Andreassen, S. M. Davies, **A.N. Lane**, L. Romick-Rosendale, S.I. Wells* (2022) Head and neck cancer susceptibility and metabolism in Fanconi anemia. Cancers. 14, 2040

Qiou Wei:
1. **Ding N,** Jiang H, Thapa P, Hao Y, Alshahrani A, Allison D, Izumi T, Rangnekar VM, Liu X, **Wei Q***. 2022. Peroxiredoxin IV plays a critical role in cancer cell growth and radioresistance through the activation of the Akt/GSK3 signaling pathways. J Biol Chem. 2022 Jun 10:102123. doi: 10.1016/j.jbc.2022.102123. Online ahead of print. PMID: 35697073.
2. Jiang H, Thapa P, Ding N, Hao Y, Alshahrani A, Wang C, Evers BM, **Wei Q***. 2022. Sulfiredoxin promotes cancer cell invasion through regulation of the miR143-Fascin axis. Mol Cell Biol. 42(5): e0005122. PMID: 35412358. (Editor selected, featured cover story).

Kate Zaytseva:
James Drury, Lyndsay E.A. Young, Timothy L. Scott, Courtney O. Kelson, Daheng He, Jinpeng Liu, Yuanyan Wu, Chi Wang, Heidi L. Weiss, Teresa Fan, Matthew S. Gentry, Ramon Sun, **Yekaterina Y.** Zaytseva. Tissue-specific downregulation of fatty acid synthase suppresses intestinal adenoma formation via coordinated reprograming of transcriptome and metabolism in the mouse model of Apc -driven colorectal cancer (accepted to International Journal of Molecular Sciences, special issue "Molecular Mechanisms and Therapies of Colorectal Cancer")

Faculty Activity:

Luksana Chaiswing:

1. NIH Study Section: ZCA1 TCRB-5 (O1) SEP-3: NCI Clinical and Translational Cancer Research. May 27, 2022
2. Invited Speaker at SfRBM Regional Conference & 5th Oberley Symposium/HCCC Retreat, Iowa City, Iowa. June 15 to June 16, 2022

Teresa Fan:

1. Presentations:
    1. Liquid biopsy-based biomarkers for early diagnosis and management of pancreatic cancer. SPORE meeting, UKy March 23, 2022
    2. Innate immune activation by checkpoint inhibition in human patient-derived lung cancer tissues. Department of Microbiology, Immunology & Molecular Genetics, University of Kentucky Medical Center, May 3, 2022
    3. Exploring human tumor metabolism in situ and in preclinical models using Stable Isotope Resolved Metabolomics (SIRM). CSH Metabolism Workshop, NY, June 2022
    4. Introduction to NMR for SIRM CSH Metabolism Workshop, NY, June 2022
    5. How can we examine individual patient's tumor microenvironment and response to therapy? Personalized Medicine Gordon Research Conference (GRC) & Seminar (GRS). Ventura, CA. June 2022
2. Symposia Organizing: 7th Metabolism Symposium UKY. July 15 2022 and Gateway NMR Conference: Metabolism (October 2022)

Rick Higashi:

1. Symposia Organizing: 7th Metabolism Symposium UKY. July 15 2022

Andrew Lane:

1. Study Section: NIGMS MSFB R01 June 2022
2. Symposia Organizing: 7th Metabolism Symposium UKY. July 15 2022 and Gateway NMR Conference: Metabolism (October 2022)

Xiaoqi Liu:

Attended "International Conference of Trace Elements and Minerals" in Aachen, Germany June 5 -10, and presented a talk entitled "Plk1 in Cr(VI)-associated lung cancer progression".

Lab Activity:



Nolan Marcum is a rising sophomore from Agricultural and Medical Biotechnology doing research in **Dr. Chaiswing's** laboratory. He made the 2022 UK Dean's list and was awarded the 2022 Office of Biomedical Education fellowship. Nolan will study the relationship of oxidative stress and immune infiltration in prostate cancer patients using prostate cancer tumor microarrays.

He enjoys reading and exercise in his free time.



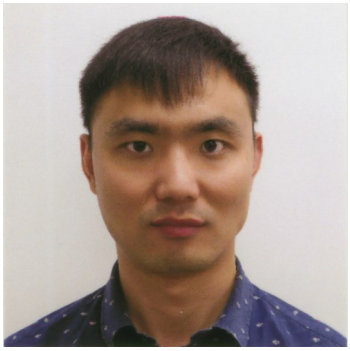
James Campbell is a new lab tech in **Dr. Chaiswing's** lab. He graduated from Agricultural and Medical Biotechnology, University of Kentucky in May 2021. He was on the Dean's list from 2017-2021. James will study the underlying mechanism(s) of radioresistance using Glioblastoma models.

He likes to spend time with family and diving.

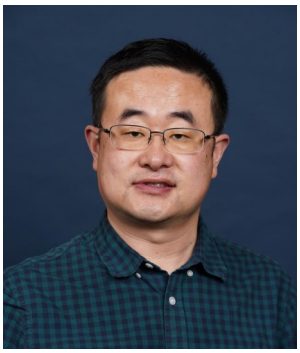
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Markey Cancer Center DTCB Research Day Winners:



Jinghui Liu (Xiaoqi Liu Lab)
Overall Winner
First Place, Postdoc Basic Science
Project: A kinome-wide CRISPR screen identifies CK1α as a novel target to overcome enzalutamide resistance of prostate cancer



Yanquan Zhang (Xiaoqi Liu Lab)
Overall Winner
First Place, Postdoc Basic Science
Project: Taxol-elevated PLK1 Overcomes BETi Resistant via Phosphorylating and Triggering Degradation of BRD4 in Prostate Cancer



Kristin Miller (Goellner Lab)
Third Place, Grad Student Basic Science
Project: HITF and SHPRH in Mismatch Repair and Cancer

Kristin also received the Markey Cancer Center Scientist in Training Travel Award.

Office of Biomedical Education Trainee Poster Session DTCB Winner:



Hannah Daniels (Goellner Lab)
Second Place, Grad Student
Project: The Role of Tyrosine Kinases in DNA Mismatch Repair

Elena Shelepak Gets In-Depth Look at Forensics Career through New UK Program



Click here to read the article about, recent graduate, Elena and her time in our Forensics Program.

Dr. Aria Byrd - Congratulations!



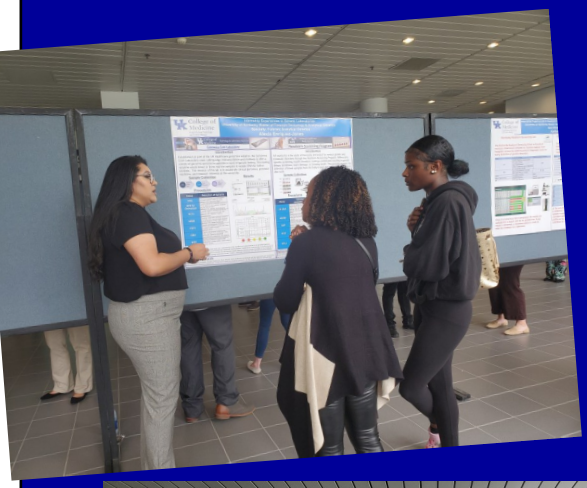
Aria Byrd successfully defended her thesis in April 2022. Congrats to her and her mentor, Dr. Christine Brainson, and other committee members: Drs. Tianyan Gao, John D'Orazio and Hunter Moseley!

SAVE THE DATE: DEPARTMENT OF TOXICOLOGY & CANCER BIOLOGY'S DEPARTMENT RETREAT WILL BE THURSDAY, AUGUST 11, 2022.

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Congratulations to all of our MS in Forensic Toxicology and Analytical Genetics students on their recent graduation! To wrap up their time in our program the students participated in a poster session where the presented on their internships.

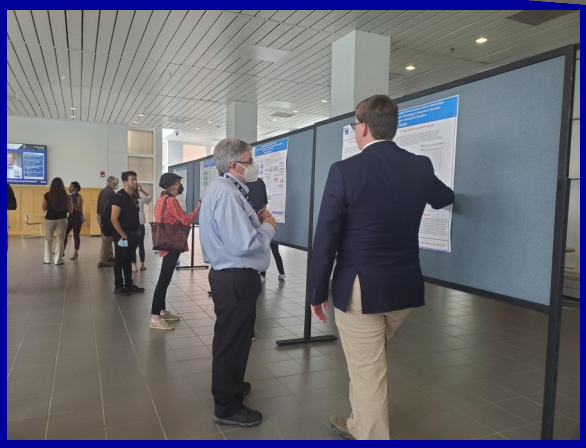


Graduated Students:

Sean Donaldson
Alexis Enriquez-Jones
Dave-Preston Esoe
Olivia Fowler
Elena Shelepak
Kennedy Plude
Christian Gosser
Genell Jasper
Marshall Heath
Thu Nguyen
Kelly Rademacher
Jordan Brown
Jordyn Rose
Kaleigh Wingate







The Student Forum has been coordinating some fun activities! Check it out -



Left: Earth Day Volunteering at UK's Arboretum

Right: Hiking at Natural Bridge

They also held an End of Year Cookout and Qualifying Exam Practices in May!





Make sure you are checking your email to see what events and/or meetings may be coming up.

