

PharmTox Weekly Buzz

(A publication of the UAMS Department of Pharmacology and Toxicology)

Week of January 17-21, 2022

Abstract by Katie McGraw Selected for Talk at EB 2022



Congratulations to research technician Katie McGraw! Her abstract was selected for an oral presentation at the Experimental Biology meeting. “Methamphetamine-induced proteomic changes within the neuroinflammatory TLR4 pathway persist after long-term self-administration in rats” will be included in the “Induction of Early Onset Cardiovascular Disease by Methamphetamine” symposium on April 2, 2022. Katie, who also is a master’s student in the GPIBS program, took over data analysis for this highly collaborative pilot project with assistant professor Michael Berquist leading the behavioral studies and associate professor Stephanie Byrum (Biochemistry and Molecular Biology) leading the proteomics. Katie and graduate student Laura Osborn invested a lot of time to learn the Qiagen’s IPA software, which enabled them to elucidate pathway connections between METH self-administration and the TLR4 and PPAR-gamma pathways from proteomics data.

Dr. Fouda Publishes in Nature Cell Biology



Assistant professor Abdelrahman Fouda co-authored a paper published in *Nature Cell Biology*. “Cysteine oxidation of copper transporter CTR1 drives VEGFR2 signaling and angiogenesis” appears in the January 2022 issue (impact factor = 28). The study uncovers a novel mechanism for sensing reactive oxygen species through the copper importer, CTR1, to drive developmental and reparative angiogenesis. The findings have significant implications for diseases in which angiogenesis is defective, including peripheral artery disease, critical limb ischemia, and retinal neovascularization. The latter condition is the most common cause of blindness in patients with proliferative diabetic retinopathy and retinopathy of prematurity. Dr. Fouda contributed the retinal angiogenesis experiments to the study.

Dr. Gannon Co-Authors Publication



Instructor Brenda Gannon co-authored a paper titled “Application of dose-addition analyses to characterize the abuse-related effects of drug mixtures”, which was accepted for publication in the *Journal of the Experimental Analysis of Behavior*. This paper represents a collaboration with the laboratory of Dr. Gregory Collins at the University of Texas Health Science Center in San Antonio, where Dr. Gannon previously was a postdoctoral fellow. The study compares the use of isobolograms with newer dose-addition analyses that the authors developed during the past five years. The study highlights the utility of the newer method for interpretations related to changes in the effectiveness of a drug-drug mixture (not just potency) and allows for individual subject analyses.