



RESEARCH ACCOMPLISHMENTS



APRIL 2022

PUBLICATIONS:

Tanaudommongkon A, Chaturvedula A, Hendrix CW, Fuchs EJ, Shieh E, Bakshi RP, Marzinke MA. Population pharmacokinetics of tenofovir, emtricitabine and intracellular metabolites in transgender women. *Br J Clin Pharmacol*. 2022 Mar 14. doi: 10.1111/bcp.15310. Online ahead of print. PMID: 35285974.

Shah B, Dong X. Current Status of In vitro Models of the Blood-Brain Barrier. *Curr Drug Deliv*. 2022 Mar 3. doi: 10.2174/1567201819666220303102614. Online ahead of print. PMID: 35240972.

Wang H, Paul J, Ye I, Blalock J, Wiener RC, Ho AF, Alanis N, Sambamoorthi U. Coronavirus disease 2019 pandemic associated with anxiety and depression among Non-Hispanic whites with chronic conditions in the US. *J Affect Disord Rep*. 2022 Apr; 8:100331. doi: 10.1016/j.jadr.2022.100331. Epub 2022 Feb 22. PMID: 35224528.

Iloabuchi C, Dwibedi N, LeMasters T, Shen C, Ladani A, Sambamoorthi U. Low-Value Care and Excess Out-Of-Pocket Expenditure Among Older Adults with Incident Cancer - A Machine learning approach. *J Cancer Policy*. 2021 Dec; 30:100312. doi: 10.1016/j.jcpo.2021.100312. Epub 2021 Oct 29. PMID: 35281326.

Yan LJ. Redox imbalance and mitochondrial abnormalities in kidney disease. *Biomolecules* 2022 Mar 21; 12(3):476. doi: 10.3390/biom12030476. PMID: 35327668.

PRESENTATIONS:

Sambamoorthi U. Health Services, Economics, and Outcomes Research & Artificial Intelligence and Machine learning. JSS College of Pharmacy, Otty, Tamil Nadu, India, March 13, 2022. Speaker: Academia Expert Interaction Series 2021-22.

Wu H, Green K, Liu Y, Zhang J, Yu Y, Lal K, Au, M-L. Function and therapeutic potential of glutaredoxin (Grx) system in the lens. ARVO Annual Meeting 2022, Denver, Colorado, May 1-4, 2022 (in person) and May 11-12, 2022 (virtual). Abstract selected for oral presentation on May 1, 2022.

Jennifer Gardner, Spencer Cushen, Jessica Bradshaw, Isabelle Garlotte, Nicole Phillips, Rebecca Cunningham, Styliani Gouloupoulou. Oxidative Stress and Release of Cell-free Mitochondrial DNA from Trophoblast Cells. Selected for oral presentation March 21, 2022. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID UNTHSC51.

Alshaima'a Qunies, Brittany Spitznagel, Yu Du, C. Weaver, Kyle Emmitte. Design and discovery of new tool compounds for studying the role of Slack potassium channels in malignant migrating partial seizure of infancy. Selected for oral presentation March 21, 2022. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC99.

VIRTUAL POSTER PRESENTATIONS:

Wu H, Green K, Liu Y, Zhang J, Yu Y, Lal K, Au, M-L. Function and therapeutic potential of glutaredoxin (Grx) system in the lens. ARVO Annual Meeting 2022, Denver, Colorado, May 1-4, 2022 (in person) and May 11-12, 2022 (virtual). Abstract also selected for oral presentation on May 1, 2022.

Bradshaw JL, Cushen SC, Ricci CA, Gardner JJ, Tucker S, Osikoya O, Gouloupoulou S. Toll-Like Receptor 9 Stimulation During Pregnancy Induces Maternal Tachycardia and Disrupts Circadian Rhythm of Blood Pressure. 69th Annual Meeting of the Society for Reproductive Investigation (SRI), Denver, CO, USA, March 15-19, 2022, Abstract ID: O-138.

Gardner JJ, Cushen SC, Bradshaw JL, Garlotte I, Phillips NR, Gouloupoulou S. Oxidative Stress and Release of Cell-Free Mitochondrial DNA from Trophoblast Cells. 69th Annual Meeting of the Society for Reproductive Investigation (SRI), Denver, CO, USA, March 15-19, 2022, Abstract ID: F-167.

Benjamin Saul, Holden Hemingway, Rauchelle Richey, Amy Moore, Austin Shokraiefard, Heidi Cope, Albert Yurvati, Rebecca Cunningham, Michael Smith, Steven Romero. Effect of Acute Heat Exposure on the Pressor Response to a Voluntary Hypoxic Apnea: A Cross-tolerance Study. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC153.

Steve Mabry, Elizabeth Wilson, Joel Little, Steven Romero, Rebecca Cunningham. Sex Differences in Oxidative Stress Model of Prodromal Parkinson's Disease. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC331.

Elizabeth Wilson, Jessica Bradshaw, Selina Tucker, Jennifer Gardner, Styliani Gouloupoulou, Rebecca Cunningham. The impact of healthy pregnancy on maternal cognitive impairment in Sprague Dawley rats. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC241.

Chaitanya Kasim, Brijesh Shah, Xiaowei Dong. In-vitro Two Step Dissolution Study of Docetaxel Granules in Fed Media. Research Appreciation Day (RAD) 2022 Virtual Conference,

University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC359.

Dalena Nguyen, Alshaima'a Qunies, Yu Du, C. Weaver, Kyle Emmitte. Library synthesis of Slack potassium channel activators based on a high throughput screening hit. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC304.

Nigam Mishra, Yu Du, Brittany Spitznagel, C. Weaver, Kyle Emmitte. Optimization of benzo[d]oxazol-2(3H)-one activators of Slack potassium channels. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC114.

Eric Yin, Nate Pappenhagen, Denise Inman. Glaucoma-associated stretch of optic nerve head astrocytes drives changes in glycolysis bioenergetics and glutamine dependency. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC347.

Nana Yaa Nsiah, Denise Inman. The Role of Oxidative Phosphorylation in Müller Glia Functions and Survival. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC263.

Julio Rincon, Ina Mishra, Michail Kastellorizios. A Novel Method to Characterize Invasive Ductal Carcinoma Tumor Biopsies Using Contact Angle Measurements. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC338.

Duen-Shian Wang, Hamed Hayatshahi, Vindi Jayasinghe Arachchige, Jin Liu. Allosteric Modulation of Small-Molecule Drugs on ACE2 Conformational Change upon Binding to SARS-CoV-2 Spike Protein. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC181.

Pratibha Kumari, Jin Liu. An Investigation of the Allosteric Effects of Agonist and Antagonist Ligands on Sigma-1 Receptor using MD Simulation and Machine Learning

Methods. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC194.

Vindi Jayasinghe Arachchige, Jin Liu. Design of man-made miniature CRISPR-Cas systems using computational technologies. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC196.

Ezek Mathew, Jin Liu, Duen-Shian Wang, Kevin Liu. Development of a Machine Learning Model to Design Target-specific Ligands. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC195.

Sareena Contractor, Pratibha Kumari, Jin Liu. Molecular Docking Study of Positive Allosteric Modulators of the Sigma-1 Receptor for the COVID treatment of elderly patients. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC216.

Zachary Olson, Pratibha Kumari, Jin Liu. Identification of Potential Positive Allosteric Modulators of Sigma-1 Receptor using Computational Molecular Docking and Virtual Screening. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC296.

Rachel Clark, Annesha White, Jin Liu, Tram Vo. Pilot Testing a Web-Based Mobile App Designed to Increase Communication and Care Coordination Among Patients, Physicians and Pharmacists. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC371.

Chinonye Madunezim, William Weiss. In vitro and in vivo development of rifampin resistance with *Staphylococcus aureus* clinical isolates. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC11.

Olagoke Sule, William Weiss. Effects of Fosfomycin-Resistant Mutants on Bacterial Growth and Efficacy. Research Appreciation Day (RAD) 2022 Virtual Conference, University

of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC173.

Jinmin Zhang, Yu Yu, Kevin Lal, Terry Dang, Chimdindu Ezugwu, Myhoa Tran, Hongli Wu. Biological Characteristics of Lens Epithelial Cells from Grx1 and Grx2 Double Knockout Mice. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC258.

Terry Dang, Hongli Wu. Emerging functional crosstalk between the Grx system and Nrf2 pathway: evidence from UV radiation-induced cataract formation. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC204.

Kevin Lal, Yu Yu, Jinmin Zhang, Myhoa Tran, Chimdindu Ezugwu, Katalin Prokai, Yang Liu, Hongli Wu. Retina-Targeted Estrogen Prodrug: A New Concept for Retinal Protection. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC152.

Jianmei Wang, Holden Hemingway, Donna Coyle, Steven Romero. A sensitive LC-MS/MS method to quantitate nitrite in human plasma. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC245.

Yesha Patel, Olagoke Sule, Chukwuezugbo Oranu, Jennifer Cooper, Kathleen Borgmann, Soma Afrasiabian, Marc Fleming, Deidra Lee. Longitudinal Survey Examining Impact of COVID19 on AA with HIV. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC175.

Hunter Kieltyka, Elizabeth Hearn. Summary of a Novel, Non-opioid Local Anesthetic for Post-surgical Pain Relief. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC56.

Nicholas te Poele, Jason Ho, Ashley McLeroy-te Poele, Chase Darden, Kollin Meyer, Crystal Howell. Meta-Analysis and Systematic Review of Post-Transplant Infection Rates Following Prophylactic and Preemptive Strategies in Solid

Organ Transplant Recipients. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC55.

Quang Nguyen, Haley McKeefer, Luis Garcia, Katherine Muilenberg, Annesha White, Crystal Howell. Encore The Impact of Quarantine on Pharmacy Students' Stress Level and Mental Health: A Regional Analysis. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC151.

Mayela Warner, Rolake Neba, Sydney Manning, Constance Wiener, Usha Sambamoorthi. Multimorbidity and Whole Health among Adults in the United States: Evidence from the NHIS and BRFSS. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC110.

Sydney Manning, Christy Xavier, Suresh Madhavan, Rafia Rasu, Usha Sambamoorthi. Leading Predictors and Their Associations with Combination Pain Therapy in Older Adults with Cancer: Application of Machine Learning Approaches. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC210.

Christy Xavier, Bryn Lindley, Rafia Rasu. COVID-19 Vaccination Disparities and Hesitancy in the United States. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC226.

Alyza King, Michael Voloudakis, Ahmed Guhad, Alvah Stahlnecker, Pamela Tabor, Christy Xavier, Rafia Rasu. Analysis of the Impact of an Insulin Savings Model Among Medicare Part D Beneficiaries and Plan Sponsors. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC177.

Farheen Ghani, Sydney Manning, Usha Sambamoorthi. Interactive Association of Chronic Illness and Food Insecurity with Emergency Room Visits among School-aged Children in the United States. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC54.

Tai Yasuda, Megan Wesling, Dante Paredes. Discontinuation of Basal and Bolus Insulin using a Combined Dietary and Pharmacologic Approach in a Patient with Type 2 Diabetes and NASH-Cirrhosis in the Primary Care Setting. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC123.

Megan Jodray, Haley McKeefer, Annesha White, Yan Xiao. The Impact of COVID-19 on Access to Insulin and Other Supplies among Patients with Diabetes. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC333.

Payton Simpson, Annesha White. The Emerging Role of the Pharmacist in Managing Poisoning Cases: A Systematic Review. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC33.

Olagoke Sule, Annesha White, Ene I. Ette. Patient Reported Outcomes: Why are we still using percentage change from baseline as an outcome? Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC368.

Jessica Obioma, Annesha White. Hormonal Contraceptive Use in Oncology Patients: Pharmacists Role in Counseling. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC274.

Jaylen Mans, Xiaowei Dong. Development and Validation of a Novel RP-HPLC Analytical Method for Quantification of Amphotericin B. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC34.

Dylan Jacobsen, Michail Kastellorizios. Contact Angle as Characterization Method for Vitreous Humor and Vitreous Humor Substitute Gels. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC340.

Amany Iskander, Marian Aziz. One-Pot Synthesis of Novel 2-Imino-5-Arylidine-Thiazolidine Analogues and Evaluation of

Their Anti-Proliferative Activity against MCF7 Breast Cancer Cell Line. Research Appreciation Day (RAD) 2022 Virtual Conference, University of North Texas Health Science Center, March 21-25, 2022, Abstract ID: UNTHSC316.

RESEARCH APPRECIATION DAY (RAD) 2022 AWARD

WINNERS:

Julio Rincon (mentor: Dr. Kastellorizios) – RAD 2022 Award: Postdoctoral Poster Presentation \$400

Christy Xavier (mentor: Dr. Rasu) – RAD 2022 Award: Postdoctoral Poster Presentation \$400

Christy Xavier (mentor: Dr. Rasu) – RAD 2022 Award: 1st place Clinical/Outcomes College of Pharmacy

Steve Mabry (mentor: Dr. Cunningham) – RAD 2022 Award: 2nd place for Center for Healthy Aging

Steve Mabry (mentor: Dr. Cunningham) – RAD 2022 Award: 1st place Pharmaceutical Science College of Pharmacy

Kevin Lal (mentor: Dr. Wu) – RAD 2022 Award: 2nd place North Texas Eye Research Institute (NTERI)

Kevin Lal (mentor: Dr. Wu) – RAD 2022 Award: 3rd place Pharmaceutical Science College of Pharmacy

Ezek Mathew (mentor: Dr. Liu) – RAD 2022 Award: 2nd place Pharmacology & Neuroscience

Duen-Shian Wang (mentor: Dr. Liu) – RAD 2022 Award: 2nd place Pharmaceutical Sciences and Pharmacotherapy (PSPT) program

Duen-Shian Wang (mentor: Dr. Liu) – RAD 2022 Award: 2nd place Pharmaceutical Science College of Pharmacy

Jaylen Mans (mentor: Dr. Dong) – RAD 2022 Award: 1st place Pharmaceutical Sciences and Pharmacotherapy (PSPT) program

Nicholas te Poele (mentor: Dr. Howell) – RAD 2022 Award: 2nd place Clinical/Outcomes College of Pharmacy

GRANTS/CONTRACTS AWARDED:

Jessica Bradshaw — American Heart Association (RP20092); \$145,020.00; Innate Immune System-Mediated Endothelial Dysfunction in Preeclampsia; 1/1/22 – 12/31/23. Dr. Bradshaw is a Postdoctoral Research Associate in Rebecca Cunningham's lab.

Rebecca Cunningham/Jennifer Gardner — American Heart Association (RP20093); \$64,072.00 (Year 1 of 2); Placental

Autophagy in a Preclinical Model of Preeclampsia with Placental Ischemia; 1/1/22 – 12/31/22. Ms. Gardner is a Graduate Student in Rebecca Cunningham's lab.

William Weiss — Industry Sponsored Project; \$88,984.65; Efficacy of novel therapeutic agents in the murine UTI model; 3/11/22 – 3/10/23. Industry Sponsored Project; \$55,341.08; C. difficile challenge study; 3/10/22 – 3/9/23. Industry Sponsored Project; \$20,946.00; Pharmacokinetics and Dose Response/Fractionation of a novel test article in the murine lung infection model with select enterobacteriaceae isolates (amendment to the original contract for additional studies); 12/6/21 – 7/12/22. Industry Sponsored Project; \$20,160.12; Bacterial Adjuvant-Mediated GI Colonization Model in Mice; 3/15/22 – 3/14/23. Industry Sponsored Project; \$10,718.48; Tolerability of submitted test article(s) by selected routes of administration (amendment to the original contract for additional studies); 3/17/22 – 2/17/23. Industry Sponsored Project; \$4,773.54; Efficacy of novel therapeutic agents in the murine UTI model (amendment to the original contract for additional studies); 1/31/22 – 4/30/22.