Marlo K. Sellin Jeffries, Ph.D.

Department of Biology
Texas Christian University
2800 South University Drive
Fort Worth, TX 76129

Phone: 817-257-6171
m.jeffries@tcu.edu
tcujeffrieslab.com
ORCID: 0000-0003-0118-5222

ACADEMIC BACKGROUND

Education

Ph.D. 2010 University of Nebraska Medical Center, Department of Environmental, Agricultural and Occupational Health (Environmental Toxicology)
M.S. 2005 University of Nebraska at Omaha, Department of Biology (Biology)
B.S. 2002 University of Nebraska at Omaha, Department of Biology (Major: Biology, Minors: Chemistry and Mathematics)

Appointments

2025-Present **Professor**, Department of Biology Texas Christian University, Fort Worth, TX
2022-Present **Chair**, Department of Biology, Texas Christian University, Fort Worth, TX
2021-2022 **Associate Chair**, Department of Biology, Texas Christian University, Fort Worth, TX
2019-2025 **Associate Professor**, Department of Biology Texas Christian University, Fort Worth, TX
2018-Present **Assistant Professor**, Department of Medical Education, Texas Christian University School of Medicine, Fort Worth, TX
2013-2019 **Assistant Professor**, Texas Christian University, Department of Biology, Fort Worth, TX
2010-2013 **Postdoctoral Fellow**, Department of Zoology, Miami University, Oxford, OH
2007-2010 **Emley Fellow**, University of Nebraska Medical Center
2006/2008 **Instructor**, Department of Biology, University of Nebraska at Omaha,
2006-2007 **Research Assistant**, University of Nebraska at Omaha
2004-2006 **United States Environmental Protection Agency GRO Fellow**, University of Nebraska at Omaha & Medical Center
2003-2004 **Teaching Assistant**, Department of Biology, University of Nebraska at Omaha

TEACHING

Courses Taught

- Mammalian Physiology, BIOL 40403/60803 (Fall semesters from 2014 to 2022; each semester from Spring 2023 to present excluding Spring 2025). An upper-level course on the function of the major mammalian organ systems.
- Advanced Teaching in Biology, BIOL 60703 (Spring 2019; Fall 2024). A graduate-level course intended to provide PhD students advanced pedagogical training with an emphasis on course design, educational theory, classroom management, and student assessment.
- Discussions in Biological Research, BIOL 40911 (each semester from Spring 2023 to present). This course is taken by students conducting ecotoxicological research and introduces students to fundamental principles of toxicology and basic approaches to the design and analysis of ecotoxicological studies. Students deepen their knowledge and develop their critical analysis skills through the discussion of primary literature.
- Skills & Techniques in Biology: Introduction to Scientific Literature, BIOL 60220 (Fall 2023). A graduate-level course intended to introduce students to the approaches used to identify and critically evaluate the scientific literature.
- Current Research in Biology, BIOL 60010 (Spring 2022, Fall 2022, Fall 2023, Spring 2024). A graduate-level course intended to introduce Biology graduate students to a wide range of research areas through presentations by guest speakers. *taught as Biology 60910 through Fall 2022.

- Scientific Presentation, BIOL 60001 (Spring, 2022). A graduate-level course on the preparation and delivery of scientific presentations.
- Gene Expression Analysis, BIOL 70950 (Spring 2016, Spring 2020, Spring 2022). A graduate level course on the methods utilized to prepare samples for gene expression analysis and analyze associated data.
- Principles of Toxicology, BIOL 40453/70950 (Spring 2014, Fall 2014, Fall 2015, Fall 2019, Fall 2021). An upper-level/graduate-level discussion course on the fate, transport and biological effects of environmentally-relevant contaminants. Carries a writing emphasis designation.
- Vertebrate Endocrinology, BIOL 40473/70950 (Fall 2013, Spring semesters from 2014 to 2019). An upper-level lecture and laboratory course on chemical messengers of endocrine origin and the physiological processes under their control. Carries a writing emphasis designation.
- Introduction to Scientific Research and Writing. BIOL 60132 (Fall semesters from 2017 to 2019, Fall 2021). A graduate-level course on biological research and scientific writing. Co-taught with A. Hale (2017, 2018) and J. Horner (2019, 2021). *taught as Biology 60131 through Fall 2021.
- Introductory Biology II, BIOL 10514 (Spring 2014 and 2015). A freshman-level, introductory biology course on evolution and the diversity, morphology, anatomy and physiology of eukaryotes. Co-taught with J. Horner, M. Chumchal and M. Misamore.

Student Research Supervision

PhD Dissertations Directed

Alex Brown, 2025 to present, TBD

Dalton Allen, 2021 to 2025, “Development of new approach methodologies for evaluating acute toxicity, chronic toxicity, and endocrine disruption”

Julie Krzykwa, 2017 to 2020, “Advancing animal alternatives in toxicity testing: The use of developmental abnormalities in fish embryos to predict chronic toxicity and adverse outcome”

Leah Thornton, 2015 to 2020, “The effects of early life stage thyroid disruption on immune system development, disease resistance, and immune responses”. PhD student at University of North Texas, co-advised by Barney Venables.

MS Theses Directed

Catherine Wise, 2023 to 2025, “Development of a novel shelter-seeking assay to assess ecologically-relevant predator avoidance behaviors in adult and juvenile fathead minnows”

Katie Solomons, 2023 to 2025, “Development and validation of a gene-expression based immune cell migration assay for immunotoxicity assessments ”

Rashidat Jimoh, 2021-2023, “Identifying chemical hazards in aquatic systems: Validation of a small fish model to identify immunotoxic chemicals”

Dalton Allen, 2019 to 2021, “Metals in the Syr Darya and Shardara Reservoir, Kazakhstan: An environmental and human health risk assessment”

Austin Bryant, 2019 to 2021, “Developmental exposures to thyroid disrupting compounds: An investigation of short- and long-term behavioral impacts”

Lynsey Malin, 2019 to 2020, “Hormones and immunity: What is the role of estrogen in immune function?”

Abbey Johnson, 2017 to 2019, “A transcriptomic approach to understanding the basis of altered reproduction in fathead minnows following early life stage thyroid disruption.” Co-advised by M. Hale.

[€]Kyle Roush, 2016 to 2018, “Sexual maturity status as a confounding variable in fish-based screening assays for the detection of anti-estrogens and non-aromatizable androgens”

[€] Recipient of the CSE SciCom Outstanding Thesis Award; Nominee for the campus-wide TCU Outstanding Thesis Award

Peter Bruns, 2015 to 2017, “Thinking outside the thyroid: Implications of adult and early life-stage thyroid disruption on reproduction”

Julie Krzykwa, 2015 to 2017, “Can the fish embryo toxicity (FET) test go chronic? Investigation of sublethal endpoints as FET test endpoints”

Leah Thornton, 2013 to 2015, “Timing is everything: Exploring the differential effects of PBDE exposures in adult and early life stage fathead minnows”

Undergraduate Honors Theses Directed

Drew Carlton, 2024 to 2025, “Investigating the presence and impact of heavy metals in the Trinity River”

Evan Burchfiel, 2021 to 2023, “Validation of a novel screening assay for the detection of estrogenic endocrine disruptors”

Maddie Wiencek, 2020 to 2022, “Identifying alternative marine toxicity testing methods: Can mysids and fish embryos replace larval fish?”

Michaela Kelly, 2020 to 2022, “Investigating alternative testing methods for the evaluation of acute nickel toxicity in *Cyprinodon variegatus*”

Kyle Horton, 2020 to 2022, “Advancing the fathead minnow as a model for immunotoxicity: Can *Aeromonas* species be used in pathogen challenges”

Kahler Doyle, 2020 to 2022, “Development of a new infection model for fathead minnows, an emerging immunotoxicity model organism”

Delaney Bredehoeft, 2019 to 2021, “Exploring the impacts of developmental thyroid disruption on transcriptional changes in the brain”

Haley Schluterman, 2019 to 2020, “Androgens and immunity: Does exposure to non-aromatizable androgens affect female immune function?”

Gabby Lamanteer, 2018 to 2020, “Comparison of methods for assessing swim performance in larval and juvenile fathead minnows”

Miranda Finch, 2017 to 2020, “The sexually dimorphic immune system: Identification of sex-specific differences in immune responses in the fathead minnow”

Hannah Nettelblad, 2018 to 2019, “Exploring the effects of early life stage nitrate exposure on sexual development and reproduction”

Caroline Wade, 2017 to 2019, “Exploring the endocrine activity of nitrate: Does exposure alter hormone levels and reproduction in adult fathead minnows?”

April Tran, 2017 to 2019, “Uncovering the effects of thyroid disruption on immune cell development and function”

Mallory Seemann, 2016 to 2018, “Exploring the mechanisms underlying the long-term reproductive effects of early life stage thyroid disruption”

[€]Meriel LeSueur, 2014 to 2017, “Another fish in the signaling sea: The effect of thyroid hormone on the immune function of adult fathead minnows”

[€]TCU College of Science & Engineering 2017 Honorable Mention for Best Honors Presentation

[€]Gunnar Nystrom, 2014 to 2017, “Cause for Concern: Chemical contamination in Kazakhstan’s Syr Darya river and its impacts on fish reproductive health.” [€]Recipient of the 2017 TCU Boller Award for Best Honors Presentation

Kyle Roush, 2014 to 2016, “Enhancing the fish embryo toxicity test: Growth, development abnormalities and gene expression as additional test endpoints”

Elise Path, 2014 to 2016, “Identifying sensitive indicators of thyroid disruption in fathead minnows after exposure to thyroxine and propylthiouracil”

Alexis Medders, 2014 to 2016, “Males, masculinity and immunity: A test of the immunocompetence handicap hypothesis in fathead minnows”

Kate Phillips, 2014 to 2016, “Identifying molecular biomarkers of growth inhibition in fathead minnows: Ontogenetic expression profiles and responses to common contaminants”

Jacob Malmquist, 2014 to 2016, “Effective spawning strategies for producing viable fathead minnow embryos for use in fish embryo toxicity tests.”

[€]Alexandra Yost, 2014-2015, “Global amphibian declines: Are exposures to polybrominated diphenyl ethers a contributing factor?”

[€]Finalist for the 2015 TCU Boller Award for Best Honors Presentation

Supervised Undergraduate Students (*current student[^]; co-author on presentation* or publication[†]*)

Texas Christian University (2013-Present, 57 to date*)*

Zach Aldrete*	Becca Bradley	Delaney Bredehoeft	Thomas Boudreaux*
Lauren Burgess	Evan Burchfiel*	Rachael Carlson	Drew Carlton*
Drennon Cunningham[^]	Khoa Dao	Kate Davis*	Vuong Do*
Kahler Doyle*	Haley Egan*	Miranda Finch*[†]	Lilli Gonzales[^]*
Ryan Halpin[^]	Abby Hawkins*	Kyle Horton*	Hana Jaafari
Adeyemi Johnson[^]	Michaela Kelly*[†]	Sarah King*[†]	Gabby Lamanteer*[†]
Lona Le[^]	Meriel LeSueur*[†]	Lynsey Malin*	Jacob Malmquist*[†]
Alexis Medders*	Andrew Mielcuszny*	Zoie Munoz*	Hannah Nettelblad*
Gunnar Nystrom*[†]	Alexis Olivas*[†]	Elise Path*[†]	Kate Phillips*
Bethany Pierce*	Kyle Roush*[†]	Marisa Ross*	Madi Ryan
Asal Saeid*[†]	Haley Schluterman*	Laurel Skrnich*	Mallory Seemann*
Colton Slabe*	Reagan Spickard[^]*	Dane Stephens*[†]	Katie Solomons*[†]
Arantxa Soto	Lydia Stephens*	April Tran*	Michael Vaughan
Caroline Wade*	Owen Wells[^]	Maddie Wiencek*[†]	Catherine Wise*
Alexandra Yost*[†]			

Service on Graduate Theses and Dissertation Committees

Mikay Reuter, TCU PhD Student, 2025 to present, TBD, Advisor: M. Hale

Morgan Bertrand, TCU MS student, 2024 to 2025, Investigating diet-induced metabolic syndrome in a typical American versus Mediterranean diet model in C57BL/6J mice, Advisor: M. Chumley

Elizabeth DiBona, Texas A&M – Corpus Christi PhD student, 2021 to 2025, “Developmental immunotoxicology using marine medaka model”, Advisor: F. Seemann

Ulysses Oles, TCU MS student, 2023 to 2024, Testing and mapping herbicide resistant hydrilla populations, Advisor: D. Williams

Evan Barfuss, TCU MS student, 2020 to 2021, “Development of genetic markers to determine the origin of migratory rainbow trout, *Oncorhynchus mykiss*”, Advisor: M. Hale

Katie Clare, TCU MS student, 2020 to 2021, “Comparative genomics of rainbow trout (*Oncorhynchus mykiss*): Are genes associated with migration conserved among populations?”, Advisor: M. Hale

Ishor Thapa, TCU MS student, 2020 to 2021, "Identifying the role of BRCA1 in transcriptional regulation using *Caenorhabditis elegans*", Advisor: M. Stewart

Haley Hayes, TCU MS student, 2016 to 2017, "An exploration of the neuroprotective and anti-inflammatory effects of rolipram in vitro and in an inflammation-induced Alzheimer's disease model", Advisor: M. Chumley

Andria Beal, TCU MS student, 2015 to 2016, "Using RNA-Seq to study the sex-role reversed gulf pipefish: Are patterns of sex-bias in gene expression different when we are dealing with Mr. Mom?", Advisor: M. Hale

Carolina Granthon, TCU MS student, 2014 to 2015, "Avian malaria and body condition in four species of songbirds", Advisor: D. Williams

Teaching-related Honors & Recognition

TCU Wassenich Award for Mentoring Nominee, 2018.
TCU Senior Class Legacy Honoree, 2017.

RESEARCH AND CREATIVE ACTIVITY

Refereed Publications *(43 published to date, 1 in press) **undergraduate, * graduate student*

Allen DS*, Wiencek MM,** Kelly MM,** Solomons KS,** **Sellin Jeffries MK**. 2026. Fish embryo and mysid tests as alternatives to standard fish tests for marine toxicity testing: a comparison of test sensitivity and exploration of additional endpoints. *Environmental Toxicology and Chemistry* 45:114-125.

Jimoh, RO*, Smith CR, Blazer VS, Corrales J, Hogan NS, Rodgers ML, Wise CA*, **Sellin Jeffries MK.** 2025. Fishy factors: Recognizing biological variation and its implications for fish immuno(eco)toxicology research. *Environmental Toxicology and Chemistry* 44: 872-879.

Thapa I*, **Sellin Jeffries MK**, Stewart MD. 2024. One of these strains is not like the others: *C. elegans* DW102 has an altered dependence on brc-1 and brd-1 for regulation of cyp gene transcription. *microPublication Biology* 001152.

Allen DS*, Wiencek MM,** Kelly MM,** Solomons KS,** **Sellin Jeffries MK**. 2024. Exploring alternatives for marine toxicity testing: Initial evaluation of fish embryo and mysid tests. *Environmental Toxicology and Chemistry* 43:1285–1299.

Allen DS*, Kolok AS, Snow DD, Staybaldiyev B, Uralbekov B, Nystrom GS**, Thornton Hampton LM*, Bartelt-Hunt S, **Sellin Jeffries MK**. 2023. Predicted aquatic and human health risks associated with the presence of metals in the Syr Darya and Shardara Reservoir, Kazakhstan. *Science of the Total Environment* 859: 159827.

Thapa I*, Vahrenkamp R*, Witus SR, Lightle C, Falkenberg O**, **Sellin Jeffries MK**, Klevit RE, Stewart MD. 2023. Conservation of transcriptional regulation by BRCA1 and BARD1 in *Caenorhabditis elegans*. *Nucleic Acids Research* 51:2108-2116.

Krzykwa JC*, Lamanteer GS**, **Sellin Jeffries MK**. 2021. A comparison of two methods for estimating critical swimming speed (U_{crit}) in larval fathead minnows: the laminar flow assay and the spinning task assay. *Journal of Experimental Biology* 224 (24):jeb242856.

Thornton Hampton LM*, Finch MG**, Martyniuk CJ, Venables BJ, **Sellin Jeffries MK**. 2021. Early life stage thyroid hormone disruption causes long-term impacts on immune cell function and transcriptional responses to pathogen in the fathead minnow (*Pimephales promelas*). *Scientific Reports* 11:14496.

Krzykwa JC*, King SM**, **Sellin Jeffries MK**. 2021. Investigating the predictive power of three potential sublethal endpoints for the fish embryo toxicity test: snout-vent length, eye size and pericardial edema. *Environmental Science and Technology* 55, 6907-6916.

Snow DD, Chakraborty P, Uralbekov B, Satybaldiev B, Sallach B, Thornton L*, **Jeffries M**, Kolok A, Bartelt-Hunt S. 2020. Legacy and current pesticide residues in Syr Darya, Kazakhstan: Contamination status, seasonal variation and preliminary ecological risk assessment. *Water Research* 184: 116141.

Thornton Hamptom LM*, **Sellin Jeffries MK**, Venables BJ. 2020. A practical guide for assessing respiratory burst and phagocytic cell activity in the fathead minnow, an emerging model for immunotoxicity. *MethodsX* 7: 100992.

Krzykwa JC*, **Sellin Jeffries MK.** 2020. Comparison of behavioral assays for assessing toxicant-induced alterations in neurological function in larval fathead minnows. *Chemosphere* 257: 126825.

Krzykwa JC*, **Sellin Jeffries MK.** 2020. Development of a larval fathead minnow optomotor response assay for assessing visual function. *MethodsX* 7: 100971.

Thornton Hamptom LM*, Martyniuk CJ, Venables BJ, **Sellin Jeffries MK**. 2020. Advancing the fathead minnow (*Pimephales promelas*) as a model for immunotoxicity testing: Characterization of the renal transcriptome following *Yersinia ruckeri* infection. *Fish and Shellfish Immunology* 103:472-480.

Roush KS*, **Sellin Jeffries MK**. 2019. Sexual maturity status as a confounding variable in fish-based screening assays for the detection of anti-estrogens and non-aromatizable androgens. *Environmental Toxicology and Chemistry* 38:603-615.

Krzykwa JC*, Saeid A**, **Sellin Jeffries MK**. 2019. Identifying sublethal endpoints for evaluating neurotoxic compounds utilizing the fish embryo toxicity test. *Ecotoxicology and Environmental Safety* 170:521-529.

Norberg-King TJ, Embry MR, Belanger SE, Braunbeck T, Butler JD, Dorn PB, Farr B, Guiney PD, Hughes SA, **Jeffries M**, Journel R, Lèonard M, McMaster M, Oris JT, Ryder K, Segner H, Senac T, Van Der Kraak G, Whale G, Wilson P. 2018. An international perspective on the tools and concepts for effluent toxicity assessments in the context of animal alternatives. *Environmental Toxicology and Chemistry* 37:2745-2757.

Krzykwa JC*, Olivas A**, **Sellin Jeffries MK**. 2018. Development of cardiovascular and neurodevelopmental metrics as sublethal endpoints for the fish embryo toxicity test. *Environmental Toxicology and Chemistry* 37:2530-2541.

Thornton LM*, Path EM**, Nystrom GS**, Venables BJ, **Sellin Jeffries MK**. 2018. Embryo-larval BDE-47 exposure causes decreased pathogen resistance in adult male fathead minnows (*Pimephales promelas*). *Fish and Shellfish Immunology* 80:80-87.

Roush KS*, Krzykwa JC*, Malmquist JA**, Stephens DA**, **Sellin Jeffries MK.** 2018. Enhancing the fathead minnow fish embryo toxicity test: Optimizing embryo production and assessing the utility of additional test endpoints. *Ecotoxicology and Environmental Safety* 153:45-53.

Thornton LM*, LeSueur MC**, Yost AT**, Stephens DA**, Oris JT, **Sellin Jeffries MK**. 2017. Characterization of basic immune function parameters in the fathead minnow (*Pimephales promelas*), a common model in environmental toxicity testing. *Fish and Shellfish Immunology* 61:163-172.

Fiester S, Arivett B, Schmidt R, Beckett A, Ticak T, Carrier M, Ohneck E, Metz, M, **Sellin Jeffries MK**, Actis L. 2016. Iron-regulated phospholipase C activity contributes to the cytolytic activity and virulence of *Acinetobacter baumannii*. *PLOS ONE* 11(11): e0167068.

Yost AY**, Thornton LM*, Venables BJ, **Sellin Jeffries MK**. 2016. Dietary exposure to polybrominated diphenyl ether 47 (BDE-47) inhibits development and alters thyroid hormone-related gene expression in the brain of *Xenopus laevis* tadpoles. *Environmental Toxicology and Pharmacology* 48:237-244.

Thornton LM*, Path EM**, Nystrom GS**, Venables BJ, **Sellin Jeffries MK**. 2016. Early life stage exposure to BDE-47 causes adverse effects on reproductive success and sexual differentiation in fathead minnows (*Pimephales promelas*). *Environmental Science and Technology* 50:7834-7841.

Thornton LM*, Path EM**, Venables BJ, **Sellin Jeffries MK**. 2016. The endocrine effects of dietary BDE-47 exposure, measured across multiple levels of biological organization, in breeding fathead minnows. *Environmental Toxicology and Chemistry* 35:2048-2057.

[€]**Sellin Jeffries MK**, Stultz AE, Smith AW, Stephens DA**, Rawling JM, Belanger SE, Oris JT. 2015. The fish embryo toxicity test as a replacement for the larval growth and survival test: A comparison of test sensitivity and identification of alternative endpoints in zebrafish and fathead minnows. *Environmental Toxicology and Chemistry* 34:1369-1381.

[€]Nominated for *Environmental Toxicology and Chemistry* Best Paper of 2015 (Baird, D. 2016, ET&C Best Paper of 2015. Environ Toxicol Chem, 35: 1605–1606)

Sellin Jeffries MK, Kiss AJ, Smith AW**, Oris JT. 2014. A comparison of commercially-available automated and manual extraction kits for the isolation of total RNA from small tissue samples. *BMC Biotechnology* 14:94.

Sellin Jeffries MK, Stultz AE, Smith AW**, Rawling JM, Belanger SE, Oris JT. 2014. Alternative methods for toxicity assessments in fish: Comparison of the fish embryo toxicity and the larval growth and survival tests in zebrafish and fathead minnows. *Environmental Toxicology and Chemistry* 33:2584-2594.

Kolok AS, **Sellin Jeffries MK**, Knight L*, Snow DD, Bartelt-Hunt, SL. 2014. The hourglass: A conceptual framework for the transport of biologically active compounds from agricultural landscapes. *Journal of the American Water Resources Association* 50:266-274.

Sellin Jeffries MK, Claytor C, Stubblefield W, Pearson WH, Oris JT. 2013. Quantitative risk model for polycyclic aromatic hydrocarbon photo-induced toxicity in Pacific herring following the *Exxon Valdez* oil spill. *Environmental Science and Technology* 47:5450-5458.

Sellin Jeffries MK, Mehinto AC, Carter BJ, Denslow ND, Kolok AS. 2012. Taking microarrays to the field: Differential hepatic gene expression of caged fathead minnows from Nebraska watersheds. *Environmental Science and Technology* 46:1877-1885.

Sellin Jeffries MK, Abbott KI**, Cowman T, Kolok AS. 2011. Occurrence and endocrine effects of agrichemicals in a small Nebraska watershed. *Environmental Toxicology and Chemistry* 30:2253-2260.

Sellin Jeffries MK, Conoan N**, Cox M, Sangster J, Balsiger HA**, Bridges AA**, Cowman T, Knight LA**, Bartelt-Hunt SL, Kolok AS. 2011. The anti-estrogenic activity of sediments from agriculturally-intense watersheds: Assessment using *in vivo* and *in vitro* assays. *Aquatic Toxicology* 105:189-198.

Sellin MK, Snow DD, Schwarz M, Kolok AS. 2010. Reductions in hepatic vitellogenin and estrogen receptor alpha expression by sediments from an agriculturally impacted waterway. *Aquatic Toxicology* 96:103-108.

Sellin MK, Snow DD, Schwarz M, Carter BJ, Kolok AS. 2009. Agrichemicals in Nebraska, USA, watersheds: Occurrence and endocrine-disrupting effects. *Environmental Toxicology and Chemistry* 28:2443-2448.

Sellin MK, Snow DD, Gustafson ST**, Erickson GE, Kolok AS. 2009. The endocrine-activity of beef cattle wastes: Do growth-promoting implants make a difference? *Aquatic Toxicology* 92:221-227.

Sellin MK, Snow DD, Akerly DL**, Kolok AS. 2009. Estrogenic compounds downstream of three small cities in eastern Nebraska: Occurrence and biological effect. *Journal of the American Water Resources Association* 45:1-8.

Kolok AS, **Sellin MK**. 2008. The environmental impact of growth-promoting compounds employed by the beef cattle industry: history, current knowledge and future directions. *Reviews in Environmental Contamination and Toxicology* 195:1-30.

Kolok AS, Snow DD, Kohno S, **Sellin MK**, Guillette Jr. LJ. 2007. Occurrence and biological effect of exogenous steroids in the Elkhorn River, Nebraska. *Science of the Total Environment* 388:104-115.

Sellin MK, Eidem TM**, Kolok AS. 2007. Cd exposures in fathead minnows: are there sex-specific differences in mortality, reproductive success and Cd accumulation? *Archives of Environmental Contamination and Toxicology* 52:535-540.

Sellin MK, Kolok AS. 2006. Maternally-derived Cu tolerance in larval fathead minnows: how long does it persist? *Journal of Fish Biology* 69:1570-1574.

Sellin MK, Kolok AS. 2006. Cd exposures during early development: do they lead to reproductive impairment in fathead minnows? *Environmental Toxicology and Chemistry* 25:2957-2963.

Sellin MK, Kolok AS. 2006. Cd exposures in fathead minnows: effects on adult spawning success and reproductive physiology. *Archives of Environmental Contamination and Toxicology* 51: 594-599.

Sellin MK, Tate-Boldt EK, Kolok AS. 2005. Acclimation to Cu in fathead minnows: does age influence the response? *Aquatic Toxicology* 74:97-109.

Other Peer-Reviewed Contributions

[€]Organisation for Economic Co-operation and Development. 2024. Validation report for the Test Guideline 252 on the Rapid Estrogen ACTivity In Vivo (REACTIV) assay. https://doi.org/10.1787/8e3bd1c6-en

[€]OECD validation documents do not have authors; rather, those who contribute are acknowledged. Those acknowledged from my lab include Z. Aldrete, D. Allen, E. Burchfiel, R. Carlson, B. Fischer, R. Jimoh, K. Solomons, C. Wise, and M. Jeffries.

Awards

Funded External Grant Proposals and Contracts

Graduate Women in Science National Fellowship Program. 2022-2023. Identifying chemical hazards in aquatic systems: Validation of a small fish model to identify immunotoxic chemicals. $10,000. Awarded to MS student, Rashidat Jimoh.

Watchfrog SA. Equipment Use Agreement. 2022. $26,500. Contract to Marlo Jeffries.

American Association of Laboratory Animal Sciences – Grants for Laboratory Animal Science (GLAS) program. 2021-2022. Moving Marine Fish Toxicity Tests Towards the 3Rs. $10,164. Marlo Jeffries (PI) and Dalton Allen (PhD student co-PI).

Society of Environmental Toxicology and Chemistry/ Procter & Gamble Fellowship for Research in Environmental Science. 2018-2019. Advancing animal alternatives in toxicity testing: The use of developmental abnormalities in fish embryos to predict chronic toxicity and adverse outcomes. $15,000. Awarded to PhD Student, Julie Krzykwa.

American Association of Laboratory Animal Sciences – Grants for Laboratory Animal Science (GLAS) program. 2015-2016. Towards the 3R's in fish toxicity testing. $27,192. Marlo Jeffries.

Subcontract through Al-Farabi National Kazakh University. 2015-2016. Emerging Contaminants and Environmental Security in the Syr Darya River Basin. $7,150. Subcontract to Marlo Jeffries.

National Science Foundation – Catalyzing New International Collaborations (CNIC) Program. 2014-2015. Catalyzing New International Collaborations: US-Kazakhstan workshop and pilot study- Pesticide occurrence and ecological effects in the Syr Darya River Basin. $49,751. Dan Snow, Alan Kolok, Shannon Bartelt-Hunt and Marlo Jeffries.

The Genome Consortium for Active Teaching – NextGen Sequencing in Undergraduate Education Workshop. 2015. Masculinity and immunity: Using global gene expression data to uncover the relationship between sexual

ornamentation and pathogen resistance in male fathead minnows. Funds awarded to cover workshop travel ($800) and NGS costs ($1500). Marlo Jeffries and Matt Hale.

Sigma Xi Grants-in-Aid of Research Program. 2014-2015. Illuminating the influences of sex-steroid hormones on immune function in the sheepshead minnow. $825. Awarded to MS student, Leah Thornton.

Funded Internal Grant Proposals

TCU Dean's Opportunity Fund. 2022-2023. Replacement of a multi-function plate reader. $48,012. Marlo Jeffries.

TCU Research and Creative Activities Fund. 2020-2021. Alternatives in marine effluent toxicity testing: Can fish embryos or invertebrates replace larval fish? $6000. Marlo Jeffries.

TCU Research and Creative Activities Fund. 2017-2018. Utilizing next-generation sequencing to unravel the mechanisms underlying altered reproductive development and function following exposures to thyroid disrupting chemical contaminants. $4480. Marlo Jeffries.

TCU Research and Creative Activities Fund. 2016-2017. Where's the beef? Identification of watershed characteristics that minimize the environmental impacts of hormonally-active compounds associated with cattle feedlot effluent. $3996. Marlo Jeffries.

TCU Junior Faculty Summer Research Program. 2016. Where's the beef? Identification of watershed characteristics that minimize the environmental impacts of hormonally-active compounds associated with cattle feedlot effluent. $6000. Marlo Jeffries.

TCU Research and Creative Activities Fund. 2015-2016. Enhancement of the fathead minnow fish embryo toxicity test: Seeking sublethal endpoints as sensitive indicators of chemically-induced adverse effects. $3930. Marlo Jeffries.

TCU Junior Faculty Summer Research Program. 2015. Enhancement of the fathead minnow fish embryo toxicity test: Seeking sublethal endpoints as sensitive indicators of chemically-induced adverse effects. $6000. Marlo Jeffries.

TCU Research and Creative Activities Fund. 2014-2015. Development and validation of a small fish model for assessing the effects of emerging contaminants on immune function. $3988. Marlo Jeffries.

TCU Junior Faculty Summer Research Program. 2014. Development and validation of a small fish model for assessing the effects of emerging contaminants on immune function. $6000. Marlo Jeffries.

Presentations (*170+ since 2003; only those since 2020 shown*)

***undergraduate, *graduate student, †invited*

Wise C*, Gonzales L**, Hunt J*, Munoz Z**, Ross M**, **Jeffries M**. 2025. The development of a novel shelter-seeking assay for the assessment of predator avoidance behaviors of fathead minnows (Pimephales promelas) across multiple life stages. Society of Environmental Toxicology and Chemistry 46th North America Annual Meeting, Portland, OR.

Wise C*, Gonzales L**, Munoz Z**, Ross M**, Hunt J*, **Jeffries M**. 2025. Fishy fears: The development of a novel predator avoidance assay for fathead minnows (*Pimephales promelas*) across multiple live stages. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Baton Rouge, LA.

Allen D*, Skrnich L**, Hunt J*, and **Jeffries M**. 2025. Endocrine disruption screening: Can vertebrate endocrine disruptors impact molting in mysid shrimp? South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Baton Rouge, LA.

Carlton D**, Spickard R**, Solomons K*, Allen D*, and **Jeffries M**. 2025. Investigation of the presence and impacts of heavy metals in the Trinity River. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Baton Rouge, LA.

Allen D*, Solomons K**, Wiencek M**, Kelly M**, Slabe C**, **Jeffries MK**. 2024. Marine fish embryo toxicity test: Investigation of sublethal endpoints to enhance test sensitivity. American Association of Laboratory Animal Sciences 75th National Meeting, Nashville, TN.

Allen D*, Solomons K**, Wiencek M**, Kelly M**, **Jeffries MK**. 2024. Towards the 3Rs in marine toxicity testing: Comparison of tests employing larval fish, fish embryos, and mysid shrimp. American Association of Laboratory Animal Sciences 75th National Meeting, Nashville, TN.

Wise C*, Jimoh R*, **Jeffries MK.** 2024. Validation of a small fish model for immunotoxicity assessments: Bridging the gap between transcriptional responses and organismal health. Society of Environmental Toxicology and Chemistry 45th North America Annual Meeting, Fort Worth, TX.

Allen, D*, Skrnich L**, Slabe C**, **Jeffries MK.** 2024. The mysid shrimp as a model for endocrine disruption screening: Identification of transcriptomic biomarkers. Society of Environmental Toxicology and Chemistry 45th North America Annual Meeting, Fort Worth, TX.

Solomons K*, **Jeffries MK.** 2024. Development of a rapid immunotoxicity screening assay: identification of molecular biomarkers of innate immune system dysfunction. Society of Environmental Toxicology and Chemistry 45th North America Annual Meeting, Fort Worth, TX.

†**Jeffries MK.** 2023. From student to professional: What you can do today to land a job tomorrow. Student noontime seminar at the Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

Tindall A, Sebire M, Katsiadaki I, Baumann LA, Petersen G, **Jeffries MKS**, Lemkine GF. 2023. The Rapid Estrogen ACTivity In Vivo (REACTIV) assay and the Rapid Androgen Disruption Activity Reporter (RADAR) assay OECD TG251. Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

Jimoh R*, Wise C**, **Jeffries MK.** 2023. Identifying chemical hazards in aquatic systems: Validation of a small fish model to screen for immunotoxic chemicals. Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

€Solomons K**, Allen D*, **Jeffries MK.** 2023. Advancing alternatives in marine toxicity testing: Can fish embryo or mysids be used as replacements for fish larvae? Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

€Selected by session co-chairs as a poster highlight presented as a poster and truncated platform

Allen D*, Solomons K**, Wiencek M**, Kelly M**, **Jeffries MK**. 2023. Evaluation of potential alternatives in marine toxicity testing: Comparing the sensitivity and feasibility of three alternatives. Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

Allen D*, Kolok AS, Snow DD, Satybaldiyev B, Uralbekov B, Nystrom GS**, Thornton Hampton LM*, Bartelt-Hunt SL, **Jeffries MK**. 2023. Assessment of Aquatic and Human Health Risks Associated with Presence of Metals in the Syr Darya and Shardara Reservoir, Kazakhstan. Society of Environmental Toxicology and Chemistry 44th North America Annual Meeting, Louisville, KY.

Burchfiel E**, Allen D*, Wise C**, Aldrete Z**, Solomons K**, **Jeffries MK.** 2023. Fluorescing fish: Using transgenic medaka to screen for environmental estrogens. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Denton, TX.

Solomons K**, Allen D*, **Jeffries MK**. 2023. Innovations in marine toxicity testing: Fish embryo and mysid tests as replacements for larval tests. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Denton, TX.

Allen D*, Wiencek M**, Kelly M**, **Jeffries MK**. 2023. Marine effluent toxicity testing: An initial comparison of alternative methods. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, Denton, TX.

Nguyen TU**, Thapa I*, **Jeffries M**, Stewart MD. 2022. Transcriptional regulation as a conserved function of BRCA1/ BARD1 in *Caenorhabditis elegans*. Texas Genetics Society.

Jeffries MK, Doyle K**, Horton K**. 2022. Development of a new infection model for fathead minnows, an emerging immunotoxicity model organism. Society of Environmental Toxicology and Chemistry 43rd North America Annual Meeting, Pittsburgh, PA.

Allen DS*, Wiencek M**, Kelly M**, **Jeffries MK**. 2022. Can tests with fish embryos or shrimp replace larval fish tests? – An initial evaluation of marine alternatives. Society of Environmental Toxicology and Chemistry 43rd North America Annual Meeting, Pittsburgh, PA.

Allen DS*, Wiencek M**, Kelly M**, **Jeffries MK**. 2022. Marine effluent toxicity testing: Evaluation of alternative testing methods for assessing metal toxicity. Society of Environmental Toxicology and Chemistry 43rd North America Annual Meeting, Pittsburgh, PA.

†**Jeffries MKS**. 2022. Investigating the predictive power of three potential sublethal endpoints for the fish embryo toxicity test: snout-vent length, eye size and pericardial edema. Health and Environmental Sciences Institute Webinar Series, virtual.

†**Jeffries MKS**. 2022. Developmental thyroid disruption and long-term impacts on reproduction. University of Ottawa + Carleton University Chemical and Environmental Toxicology Program Seminar Series, virtual.

†**Jeffries MKS**. 2021. Animal Alternatives in Environmental Risk Assessment. The Health and Environmental Sciences and University of Ottawa and Carleton University Joint Chemical Environmental Toxicology Program Workshop on Translating Science into Real-World Applications via Cross-sector Collaboration, virtual.

†**Jeffries MKS**. 2021. Developmental thyroid disruption and long-term reproductive impacts. University of Texas – Arlington Department of Earth & Environmental Sciences Seminar Series, virtual.

Allen DS*, **Jeffries MK**. 2021. Human health risks associated with the consumption of fish from a freshwater resource feeding the Aral Sea. Texas Chapter of the American Fisheries Society Meeting, virtual.

Schluterman H**, Mielcuszny A**, Malin L*, **Jeffries MKS.** 2020. An analysis of the effects of the cattle growth-promoting androgen, trenbolone, on the immune function of female fish. Society of Environmental Toxicology and Chemistry SciCon2 (virtual meeting).

Bryant A*, **Jeffries MKS.** 2020. The Effects of Early Life Stage Thyroid Disruption on Reproductive Behaviors in Fathead Minnows (*Pimephales promelas*). Society of Environmental Toxicology and Chemistry SciCon2 (virtual meeting).

Krzykwa J*, King S**, Hawkins A**, **Jeffries MKS**. 2020. The inclusion of pericardial edema and growth as indicators of mortality improves fish embryo toxicity test performance. Society of Environmental Toxicology and Chemistry SciCon2 (virtual meeting).

Malin L*, Do V**, **Jeffries MKS.** 2020. Reproductive endocrine disruption and immunity: Does exposure to an anti-estrogen modulate immune function in female fathead minnows? Society of Environmental Toxicology and Chemistry SciCon2 (virtual meeting).

Krzykwa J*, Lamanteer G**, **Jeffries MKS**. 2020. A comparison of two methods for estimating critical swimming speed (U_{CRIT}) in larval fathead minnows: the laminar flow assay and the spinning task assay. Society of Environmental Toxicology and Chemistry Europe 30th Annual meeting. Virtual meeting (due to COVID-19 pandemic).

Krzykwa J*, King S**, Hawkins A**, **Jeffries MKS**. 2020. Investigating the predictive power of pericardial edema in fish embryos. Society of Environmental Toxicology and Chemistry Europe 30th Annual meeting. Virtual meeting (due to COVID-19 pandemic).

Norberg-King T, Embry M, Belanger S, **Jeffries M**, Connors, K, Brill J, Schirmer K, Lampi M, Hughes S, Kristofco L. 2020. Whole effluent toxicity testing: Are there alternative approaches? Society of Environmental Toxicology and Chemistry Europe 30th Annual meeting. Virtual meeting (due to COVID-19 pandemic).

Research-related Student Accomplishments

Student Presentation Awards

1st Place Best Poster Presentation for "Fishy fears: The development of a novel predator avoidance assay for fathead minnows (*Pimephales promelas*) across multiple live stages" by Wise C*, Gonzales L**, Munoz Z**, Ross M**, Hunt J*, Jeffries M. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2025.

1st Place Best Platform Presentation for "Fluorescing Fish: Using Transgenic Medaka to Screen for Environmental Estrogens" by Burchfiel E**, Allen D*, Wise C**, Aldrete Z**, Solomons K**, Jeffries MK**.** South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2023.

1st Place Best Poster Presentation for "Innovations in marine toxicity testing: Fish embryo and mysid tests as replacements for larval tests" by Solomons K**, Allen D*, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2023.

3rd Place Best Student Talk for "Can tests with fish embryos or shrimp replace larval fish tests? – An initial evaluation of marine alternatives" by Allen DS*, Wiencek M**, Kelly M**, Jeffries MK. Society of Environmental Toxicology and Chemistry 43rd North America Annual Meeting, 2022.

2nd Place Best Poster Presentation for "Investigating sex-based differences in the pathogen resistance and immune responses in the fathead minnow, an immunotoxicity model" by Finch M**, Thornton Hampton L*, Malin L**, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, 2019.

3rd Place Best Platform Presentation for "Uncovering the effects of thyroid disruption on immune function and development in larval fathead minnows" by Tran A**, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, 2019.

1st Place Best Platform Presentation for "Screening for reproductive endocrine disrupting compounds: Does phenotype influence test outcome?" by Roush KS*, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, 2018.

1st Place Best Poster Presentation for "Adaptation of methods for the immunofluorescent visualization of thyroxine (T4) in larval fathead minnows (*Pimephales promelas*)" by Thornton LM*, Venables BJ, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, 2018.

3rd Place Best Poster Presentation for "Exposure to the model goitrogen, propylthiouracil (PTU), alters the immune response and pathogen resistance in male fathead minnows (*Pimephales promelas*)" by LeSueur MC**, Thornton LM*, Jeffries MK. South Central Society of Environmental Toxicology and Chemistry Meeting, 2017.

3rd Place Best Platform Presentation for "Reproductive effects of early-life stage thyroid disruption in the fathead minnow" by Bruns P*, Pierce BL**, Seemann MM**, Jeffries MK. South Central Society of Environmental Toxicology and Chemistry Meeting, 2017.

2nd Place Best Undergraduate Platform Presentation for "Balancing the effectiveness and practicality of alternative test endpoints for the fathead minnow fish embryo toxicity test" by Roush KS**, Krzykwa J*, Stephens DA**, Jeffries MK. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, 2016.

3rd Place Best Undergraduate Platform Presentation for "An ecotoxicological reconnaissance in Central Asia: Assessment of biomarker responses in wild-caught roach (*Rutilus rutilus*)." by Nystrom GS**, Snow DD, Kolok AS, Bartelt-Hunt SL, Uralbekov B, Mamilov N, Jeffries MK. 2016. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, 2016.

3rd Place Best Masters Platform Presentation for "Cardiovascular and neurodevelopmental metrics as sublethal endpoints for the fish embryo toxicity test" by Krzykwa J*, Jeffries MK. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Meeting, 2016.

2nd Place Best Student Platform Presentation for "Development of cardiovascular and neuro-developmental metrics as sublethal endpoints for the fish embryo toxicity test" by Krzykwa, JC*, Jeffries, MK. 2016, Lone Star Chapter of the Society of Toxicology Meeting, 2016.

3rd Place Best Student Platform Presentation for "Identifying sensitive endpoints of thyroid hormone disruption in early life stage fathead minnows." by Path EM**, Egan H**, Jeffries MK; South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2016.

2nd Place Best Student Poster Presentation for "Can the fish embryo toxicity test go chronic? Screening for sublethal endpoints to predict chronic toxicity in fathead minnow embryos." By Krzykwa JC*, Jeffries MK. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2016

Best Student Poster Presentation for "Development of the fathead minnow as a model organism for the study of immune function: characterization of molecular responses to pathogen infection" by Thornton LM*, LeSueur MC**, Yost AT**, Stephens DA**, Oris JT, Jeffries MK; Texas Chapter of the American Fisheries Society Annual Meeting, 2015.

1st Place for "Timing is everything: Are the effects of PBDE-47 different in adult and early life stage organisms?" by Thornton L*; TCU Three Minute Thesis (3MT®) Competition, 2015.

People's choice award for "Timing is everything: Are the effects of PBDE-47 different in adult and early life stage organisms?" by Thornton L*, TCU Three Minute Thesis (3MT®) Competition; 2015.

Best Graduate Student Platform Presentation for "Development of the fathead minnow as a model organism for immunotoxicity: Characterization of basic immune function parameters." by Thornton, L.*, Yost A**, LeSueur M**, Stephens D**, Jeffries M. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2014.

SERVICE

Departmental Service

Chair, Biology Department, 2022-Present
Member, Biology Department Search Committee for a Tenure-track Quantitative Biologist, 2025-Present
Member, Biology Department Search Committee for a Tenure-track Ecologist, 2024
Chair, Visiting Lecturer Search Committee, 2023, 2024
Member, Biology Department Committee on Graduate Studies, 2024, 2025

Co-chair, *Ad-hoc* Biology Green Honors Chair Planning Committee, 2022-2023
Associate Chair, Biology Department, 2020-2022
Member, *Ad-hoc* Exploratory Committee for the Hiring of a New Instructor, 2021
Chair, Biology Department *Ad-hoc* Handbook Committee, 2019-2022
Chair, Biology Department Advancement and Communications Committee, 2019-2022
Member, Biology Department Advisory Committee, 2019-2022
Member, Biology Department Undergraduate Research Committee, 2017-2018
Member, Biology Department Committee on Graduate Studies, 2014-2022
Coordinator, Mondays at TCU, 2014-2019
Member, Committee on Student Research Symposium Poster Judging, 2017-2018
Member, *Ad-hoc* Committee on the Future of the Pre-Health Program, 2017
Member, Biology Department Search Committee for Tenure-track Biochemist, 2016
Member, Biology Department Search Committee for Biochemistry Instructor, 2015

College of Science and Engineering (CSE) Service

Coordinator, New Faculty Mentoring Program, 2023-2025
Member, CSE Collaboration Catalyst (C^3) Committee, 2024-2025
Member, CSE Leadership Council, 2022-Present
Member, Health Professions Advisory Committee, 2014-Present
Member, *Ad-hoc* CSE Research Institute Committee, 2024
Member, *Ad-hoc* CSE Biomedical Sciences Building Steering Committee, 2024
Member, *Ad-hoc* Vivaria Committee, 2021-2022
Biology Representative, CSE Open House, 2023
Presenter, CSE External Advisory Board Meeting, 2023
Moderator, CSE Honors Research Symposium, 2023, 2024
Member, *Ad-hoc* CSE Faculty Workload Equity Model Review Committee, 2022-2023
Presenter, CSE Experience TCU Events for Prospective Students, 2020, 2023
Biology Co-coordinator and Representative, CSE Student Research Interest Fair, 2022
Chair, CSE Honors Research Symposium Committee, 2016-2019
Coordinator, National Center for Genome Analysis and Support R Workshop for Biologist and the Biologically-minded at TCU, 2018

University Service

CSE Representative, Academic Chairs and Directors Council Executive Committee, 2024-Present
Member, University Budget Advisory Committee, 2024-Present
Member, Faculty Relations Committee, 2024-2025
CSE Representative, Faculty Senate, 2019-2022, 2024-2025
Member, TCU Communications Core Assessment Committee, 2023-Present
Member, TCU Academic Chairs and Directors Council, 2022-Present
Alternate Member, TCU Institutional Animal Care and Use Committee, 2018-Present
Member, *Ad-hoc* Faculty 180 Alternatives Committee, 2024
Member, *Ad-hoc* Committee on Growing the PhD Student Population, 2024
Panelist, New to TCU Academic Chairs and Directors Council Orientation, 2024
Departmental Representative, McNair Scholars Graduate School Bootcamp, 2023
Speaker and Exhibitor, Celebration of Philanthropy, 2022
Panelist, Office of Graduate Studies CV/Getting a Job in Academia Panel Discussion, 2022
CSE Representative, Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) Quality Enhancement Plan Leadership Team, 2021-2023
CSE Representative, Graduate Council, 2020-2023
CSE Representative, National First-generation College Student Day Celebration Event, 2021

Member, J.V. Roach Honors College Curriculum Committee, 2021-2022
Ad hoc Reviewer, Research and Creative Activities Committee, TCU Office of Research, 2021
Lead Interviewer, Chancellor's Scholar Program, 2021
Honors Admission Reader, J.V. Roach Honors College, 2020/2021 and 2021/2022
Chair, Academic Excellence Committee, 2021-2022
Member, Academic Excellence Committee, 2019-2021
Member, TCU Allies Program, 2015-Present
Reviewer, J.V. Roach Honors College Honors Undergraduate Research Grants, 2019-2020
Member, TCU Office of Research Compliance Advisory Committee, 2017-2019
College of Science and Engineering Honors Week Liaison, 2015-2019
Member, Honors College Undergraduate Research Grant Committee, 2016-2017
Member, *Ad-hoc* Committee for Controlled Substance Policy and Procedure Revision, 2018
Member, *Ad-hoc* Institutional Animal Care and Use Committee for Policy Revision, 2016-2017
Lecturer, Experience TCU (Chancellor's Scholars weekend), 2015

Community Service and Outreach

Founder, Fort Worth Science Café, 2020-2022
Mentor, STEM Summer Camp for Girls Inc. of Tarrant County, 2019

Professional Review and Editorial Service

Editorial Positions.

Editor, Environmental Toxicology and Chemistry, 2022-Present
Review Editor, Frontiers in Immunology (Comparative Immunology Section), 2022-Present
Associate Editor, Archives of Environmental Contamination and Toxicology, 2021-2023
Editorial Board Member, Environmental Toxicology and Chemistry, 2017-2022

Manuscript Referee. (150+ reviews from 2013 to Present).
Archives of Environmental Contamination and Toxicology, Aquatic Toxicology, Biological Bulletin, BMC Genomics, Chemosphere, Comparative Biochemistry and Physiology, Ecotoxicology, Ecotoxicology and Environmental Safety, Environmental Monitoring and Assessment, Environmental Pollution, Environmental Science and Pollution Research, Environmental Science and Technology, Environmental Science: Processes and Impacts, Environmental Toxicology and Chemistry, Environmental Toxicology and Pharmacology, Fish Physiology and Biochemistry, Food and Chemical Toxicology, Frontiers in Immunology, Histology and Histopathology, Journal of Environmental Quality, Journal of Fish Biology, Journal of Great Lakes Research, International Journal of Environmental Research and Public Health, Journal of Hazardous Materials, Journal of the American Water Resources Association, Microarrays, PLOS ONE, Royal Society Open Science, Science of the Total Environment, Springer Plus, Toxicological Sciences, Toxicology and Industrial Health

Textbook Reviewer.

Schreiber's Integrative Endocrinology (publisher: Oxford University Press), 2020.
Human Physiology: Mechanisms and Logic (publisher: Jones and Bartlett Learning), 2016.

Grant Proposal Reviewer.

National Science Foundation Review Panel, 2022.
Alternative Research and Development Foundation Grant Program, 2020.
Environment and Natural Resources Trust Fund Grant Program, 2020.
Alternative Research and Development Foundation Grant Program, 2019.
National Oceanic and Atmospheric Administration RESTORE Science Program, 2019.
United States Geological Survey 104b State Grant Program (Idaho), 2018.
Graduate Women in Science – Fellowship Program, 2018.
National Science Foundation - International Research Fellowship Program, 2012.

Professional Affiliations and Service

Society of Environmental Toxicology and Chemistry (SETAC)

SETAC Leadership

45th Annual North America Meeting Co-chair, 2023-2024
Co-chair, Global SETAC Immunotoxicity Interest Group, 2022-2023*
*Developed from an informal Immunotoxicity Working Group prior to adoption as an official SETAC Interest Group
Secretary, South Central Chapter, 2019-2022
Webmaster, South Central Chapter 2015-2022
41st Annual North America Meeting Co-chair, 2018-2020
Immediate Past President, South Central Chapter, 2018-2019
President, South Central Chapter, 2017-2018
Vice President, South Central Chapter**,** 2016-2017
Co-host, South Central Chapter Annual Meeting Co-host with M. Chumchal and R. Drenner, 2016
North America Annual Meeting Session Co-chair for:

- The Trinity River Past, Present, and Future: Management of an Urban Watershed in a Growing City, 2024.
- Advancements in Aquatic and Wildlife Immunotoxicology: Innovative Approaches to Identifying Adverse Outcomes, 2022.
- Alternative Animal Ecotoxicity Testing: New and Novel Approaches for Predicting Environmental Hazards and Risk Assessment, 2018.
- Immunotoxicology: Identifying Adverse Effects, Developing New Approaches and Confronting Existing Challenges, 2018.
- Alternative Approaches to Animal Testing for Ecotoxicity Assessments, 2017.
- Immunotoxicity – Impacts of Contaminants on Immune Function and Susceptibility to Disease, 2017.
- Uncharted Waters: Field Ecotoxicology in Remote Locations on Limited Resources, 2016.
- Aquatic Toxicology and Ecology – General, 2015.

SETAC Service

Student Presentation Judge, North America Annual Meeting, 2020
Student Presentation Judge, Europe Annual Meeting, 2020
Member, North America Meeting Social Subcommittee, 2019-2020
Member, North America Meeting Abstract Review Committee, 2019-2020
Mentor, Exploring Career Choices Event, 2018-2019

SETAC Membership

Member, North America Geographic Unit Member, 2004-present
South Central Regional Chapter Member, 2014-present
Member, Ohio Valley Regional Chapter, 2012-2013
Member, Ozark-Prairie Regional Chapter, 2003-2010

Health and Environmental Sciences Institute

Next Generation Ecological Risk Assessment Committee Member, 2022 to present
Animal Alternatives Steering Committee Member, 2019-2022
Animal Alternatives Committee Advisory Committee Member, 2014-2022

American Association for Laboratory Animal Science*,* Silver Member, 2014-2017, 2020-2023

Council on Undergraduate Research, Member, 2016-2018

Sigma Xi Scientific Research Society, Full Member, 2006-2008, 2013-2014, 2016-2019

Other Professional Service Activities

Legislative Testimony.
California Assembly Bill No. 2474: Hazardous waste: identification: testing. Testimony in support of a bill authorizing the Department of Toxic Substances Control to evaluate whether the fish embryo toxicity test can be utilized as an alternative to existing toxicity testing strategies. 2018.

Service-related Honors & Recognition

Exceptional reviewer (top 15 of over 600 reviewers) for *Environmental Toxicology and Chemistry* in 2021*;* recognition appears in *Environmental Toxicology and Chemistry,* 2022, 41:5-6.

Exceptional reviewer (top 15 of over 600 reviewers) for *Environmental Toxicology and Chemistry* in 2020*;* recognition appears in *Environmental Toxicology and Chemistry,* 2021, 40:5-6*.*

High-ranking (top 5%) reviewer for *Environmental Toxicology and Chemistry* in 2019*;* recognition appears in *Environmental Toxicology and Chemistry,* 2020, 39:5-6.

Exceptional reviewer (top 15 of nearly 850 reviewers) for *Environmental Toxicology and Chemistry* in 2018*;* recognition appears in *Environmental Toxicology and Chemistry*, 38:5-6.

High-ranking (top 5%) reviewer for *Environmental Toxicology and Chemistry* in 2017*;* recognition appears in *Environmental Toxicology and Chemistry,* 2018, 37:5-6.