

Dr. Marlo K. Sellin Jeffries

Curriculum Vitae

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

Office: 817-257-6171
Cell: 817-301-4048
Fax: 817-257-6177
m.jeffries@tcu.edu

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

- 2013-Present **Assistant Professor**, Texas Christian University, Department of Biology, Fort Worth, TX
2010-2013 **Postdoctoral Fellow**, Miami University, Department of Zoology, Oxford, OH
2007-2010 **Emley Fellow**, University of Nebraska Medical Center
2006/2008 **Instructor**, University of Nebraska at Omaha, Department of Biology
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**, University of Nebraska at Omaha, Department of Biology

TEACHING

Courses Taught

- Assistant Professor**, Texas Christian University, Department of Biology, Fall 2013 to present
- Biology 40403 (Fall semesters from 2014 to present): Mammalian Physiology. An upper-level course on the function of the major mammalian organ systems.
 - Biology 40473 (Fall 2013, Spring semesters from 2014 to present): Endocrinology. An upper-level, writing emphasis, lecture and laboratory course on chemical messengers of endocrine origin and the physiological processes under their control.
 - Biology 60131 (Fall semesters from 2017 to present): Introduction to Scientific Research and Writing. A graduate-level course on biological research and scientific writing. Co-taught with A. Hale.
 - Biology 70950 (Spring 2016): Gene Expression Analysis. A graduate level course on the methods utilized to prepare samples for gene expression analysis and analyze gene expression data.
 - Biology 40453/70950 (Spring 2014, Fall 2014, Fall 2015): Principles of Toxicology (listed as Biol 40800/70950 in 2014). An upper-level/graduate-level discussion course on the fate, transport and biological effects of contaminants.
 - Biology 10514 (Spring 2014 and 2015): Introductory Biology II. 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.

Co-instructor, Miami University, Department of Zoology, Spring 2013

Teaching Assistant, Miami University, Department of Zoology, Fall 2011

- Zoology 462/562: Environmental Toxicology and Risk Assessment. A senior/graduate-level capstone course in applied toxicology from the molecular to ecosystem levels with an emphasis on an interdisciplinary, problem-solving approach to ecological risk assessment.

Instructor, University of Nebraska at Omaha, Department of Biology, Fall 2006 & 2008

- Biology 1020: Principles of Biology. A team-taught introductory Biology course for non-majors on basic aspects of biology from the molecular to population levels.

Teaching Assistant, University of Nebraska at Omaha, Department of Biology, 2003-2004

- Biology 1750: Biology II. An undergraduate Zoology course required for all Biology majors focusing on whole-organisms and their interactions with the environment.
- Biology 4740: Animal Physiology. An upper-level physiology course on the functions of selected tissue/organ systems in animals.

Teaching Assistant, University of Nebraska at Omaha, Department of Mathematics, 2001-2002

- Math 1310: Intermediate Algebra. An entry-level algebra course.

Student Research Supervision

Ph.D. Dissertations Directed

Julie Krzykwa, 2017 to present, “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 present, “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

M.S. Theses Directed

Abbey Johnson, 2017 to present, “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”

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”

Service on TCU Graduate Theses Committees

Haley Hayes, 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: Michael Chumley

Andria Beal, 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: Matt Hale

Carolina Granthon, 2014 to 2015, “Avian malaria and body condition in four species of songbirds”, Advisor: Dean Williams

Honors Theses Directed

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

Hannah Nettelblad, 2018 to Present, “Exploring the endocrine disrupting potential of nitrates: Part 2 - Does early life stage exposure lead to alterations in sexual development and reproductive success in fathead minnows?”

Asal Saeid, 2017 to Present, “Identification of triclosan degradation products following exposures to ambient and natural lighting and the associated toxicity”

Caroline Wade, 2017 to Present, “Exploring the endocrine disrupting potential of nitrates: Part 1 - Do adult exposures lead to alterations in androgen signaling and reproductive success in fathead minnows?”

Miranda Finch, 2017 to Present, “The sexually dimorphic immune system: An exploration of the influence of estrogens on immunity in the fathead minnow”

April Tran, 2017 to Present, “Developing methods to assess immune development and function in larval fathead minnows”

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

Independent Research Projects Directed

Ari Soto, 2017 to 2018, “Uncovering the basis of sex-specific differences in immune function: The role of estrogens”

Lydia Stephens, 2014 to 2018, “The effects of early life stage thyroid disruption on thyroid follicle size and structure”

Bethany Pierce, 2016 to 2018, “Analyzing the effects of thyroid disrupting compounds on eye development in *Pimephales promelas*”

Alexis Olivas, 2016 to 2017, “Identifying molecular biomarkers of cardiovascular and neurological development in fathead minnows: Ontogenetic expression profiles”

Haley Egan, 2015 to 2017, “Sink or swim: Effects of thyroid hormones on the developing fathead minnow immune system.”

Dane Stephens, 2013 to 2015, “Seeking animal alternatives in toxicity testing: Validation and enhancement of the fathead minnow fish embryo toxicity test as an alternative to larval fish toxicity tests”

Service on Honors Theses Committees

Khoa Dao, 2018-present, Title TBD, Advisor: Dr. Mikaela Stewart (Biology)

Lynsey Malin, 2018-present, Title TBD, Advisor: Dr. Matt Hale (Biology)

Brook Hardiman, 2018-present, Title TBD, Advisor: Dr. Gary Boehm

Adam Burgess, 2016-2017, “IL-1 β as a predictor of life history strategy and impulsivity in humans” Advisor: Dr. Sarah Hill (Psychology)

Michael Chandra, 2016-2017, “Targeting the estrogen receptor in breast cancer cells with cytotoxic drugs” Advisor: Dr. Giri Akkaraju (Biology)

Sarah Price, 2016-2017, “Spectroscopic analysis of BODIPY dyes” Advisor: Dr. Sergei Dzyuba (Chemistry)

Eleanore Rominger, 2016-2017, “Characterization of LPS activated peritoneal B-1 cells” Advisor: Dr. Mike Chumley (Biology)

Sam Showalter, 2016-2017, “Examining sex bias in gene expression in the brain tissue of brook trout” Advisor: Dr. Matt Hale (Biology)

Julianna West, 2016-2017, “The effect of the stimulation and inhibition of the inflammatory response on the activation of NF-kB” Advisor: Dr. Giri Akkaraju (Biology)

Rachel Cartmell, 2015-2016, “Determination of the phenology of fall flowering plant species in the Fairview Prairie.” Advisor: Dr. Glenn Kroh (Biology)

Candler Bortz, 2015-2016, “YwIE effect on oxidative stress response in *Bacillus anthracis*.” Advisor: Dr. Shauna McGillivray (Biology)

Jessica Mussatto, 2013-2014, “Analysis of amyloid beta clearance in exercised mice following inflammation.” Advisor: Dr. Michael Chumley (Biology)

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

Texas Christian University (2013-Present, 27 to date)

Lauren Burgess	Thomas Boudreaux*	Khoa Dao	Haley Egan*
Miranda Finch*	Hana Jaafari	Gabby Lamanteer	Meriel LeSueur* [†]
Lynsey Malin*	Jacob Malmquist* [†]	Alexis Medders*	Hannah Nettelblad*
Gunnar Nystrom* [†]	Alexis Olivas* [†]	Elise Path* [†]	Kate Phillips*
Bethany Pierce*	Kyle Roush* [†]	Asal Saeid*	Mallory Seemann*
Dane Stephens* [†]	Arantxa Soto	Lydia Stephens*	April Tran
Michael Vaughan	Caroline Wade*	Alexandra Yost* [†]	

RESEARCH AND CREATIVE ACTIVITY

Refereed Publications (*27 published to date, 3 in review*)

* denotes undergraduate, [†] denotes graduate student

Roush KS[†], **Sellin Jeffries MK**. *In review*. Sexual maturity status as a confounding variable in fish-based screening assays for the detection of anti-estrogens and non-aromatizable androgens. Submitted to *Environmental Toxicology and Chemistry* in August 2018.

Krzykwa JC[†], Saeid A*, **Sellin Jeffries MK**. *In review*. Identifying sublethal endpoints for evaluating neurotoxic compounds utilizing the fish embryo toxicity test. Submitted to *Aquatic Toxicology* in July 2018.

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

Krzykwa JC[†], Olivas A*, **Sellin Jeffries MK**. *In press, 2018*. Development of cardiovascular and neurodevelopmental metrics as sublethal endpoints for the fish embryo toxicity test. *Environmental Toxicology and Chemistry* DOI: 10.1002/etc.4212.

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.

Non-refereed Publications

Corrales J, **Jeffries MK**, Thornton LM. 2018. Immunotoxicology: Impacts of contaminants on immune function and susceptibility to disease. *Society of Environmental Toxicology and Chemistry Globe* 19:2.

Ali JM, **Jeffries MK**, Kolok AS. 2017. Uncharted Waters: Field Ecotoxicology in Remote Locations on Limited Resources. *Society of Environmental Toxicology and Chemistry Globe* 18:1.

Awards

Funded External Grant Proposals

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.

Funded Internal Grant Proposals

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.

Honors & Recognition

Nomination for *Environmental Toxicology and Chemistry* Best Paper of 2015; recognition appears in Baird, D. 2016, ET&C Best Paper of 2015. *Environ Toxicol Chem*, 35: 1605–1606.

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

Student Accomplishments

Funded Student External Grant Proposals

Society of Environmental Toxicology and Chemistry/ Procter & Gamble Fellowship for Research in Environmental Science. 2017-2018. Advancing animal alternatives in toxicity testing: The use of developmental abnormalities in fish embryos to predict chronic toxicity and adverse outcomes. \$15,000. Graduate Student: Julie Krzykwa.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2016. \$576. Graduate student: Julie Krzykwa.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2016. \$576. Graduate student: Peter Bruns.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2016. \$576. Graduate student: Kyle Roush.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2016. \$576. Undergraduate student: Gunnar Nystrom.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2016. \$576.
Undergraduate student: Elise Path.

Society of Environmental Toxicology and Chemistry Student Travel Grant. 2015. \$560.
Graduate student: Leah Thornton.

TCU Graduate Student Travel Grant. 2015. \$800. Graduate student: Leah Thornton.
Pollutant Responses in Marine Organisms Student Travel Grant. 2015. \$402. Graduate Student:
Leah Thornton.

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. Graduate student: Leah Thornton.

Funded TCU CSE Graduate Student Research Funding Proposals

Screening for reproductive endocrine disrupting compounds: Does phenotype influence test outcome? 2018. \$1999. Graduate Student: Kyle Roush

A transcriptomics approach to identify the mechanisms underlying reproductive impairments among fathead minnows exposed to thyroid disruptors during early development. 2017. \$3000.
Graduate Student: Peter Bruns

Funded TCU SERC Proposals

2018-2019 Academic Year

The conversion of UV-exposed triclosan to dioxin-like compounds: NMR analysis of triclosan and its photodegradation by-products in water. \$1047. Undergraduate student: Asal Saeid

Assessing the impacts of early life stage thyroid disruption on immune cell development and function. \$1500. Undergraduate student: April Tran

2017-2018 Academic Year

Uncovering the basis of sex-specific differences in immune function: the role of estrogens. \$1500. Undergraduate student: Ari Soto

The effects of thyroid disrupting compounds on bone development in fathead minnows. \$1500.
Undergraduate student: Mallory Seemann

Analyzing the effects of thyroid disrupting compounds on eye development in *Pimephales promelas*. \$1500. Undergraduate student: Bethany Pierce

2016-2017 Academic Year

Sink or swim: Effects of thyroid hormones on the developing fathead minnow immune system. \$1326. Undergraduate student: Haley Egan

Another fish in the signaling sea: The effect of thyroid hormone on the immune function of adult fathead minnows. \$1500. Undergraduate student: Meriel LeSueur

Cause for Concern: Chemical contamination in Kazakhstan's Syr Darya river and its impacts on fish reproductive health. \$1207. Undergraduate student: Gunnar Nystrom

2015-2016 Academic Year

Identifying molecular biomarkers of growth inhibition in fathead minnows: Ontogenetic expression profiles and responses to common contaminants. \$1328. Undergraduate student: Kate Phillips.

Effective spawning strategies for producing viable fathead minnow embryos for use in fish embryo toxicity tests. \$535. Undergraduate student: Jacob Malmquist

Males, masculinity and immunity: A test of the immunocompetence handicap hypothesis in fathead minnows. \$1500. Undergraduate student: Alexis Medders.

Enhancing the fish embryo toxicity test: Growth, development abnormalities and gene expression as additional test endpoints. \$1500. Undergraduate student: Kyle Roush.

Identifying sensitive indicators of thyroid disruption in fathead minnows after exposure to thyroxine and propylthiouracil. \$1500. Undergraduate student: Elise Path.

2014-2015 Academic Year

Global amphibian declines: Are exposures to polybrominated diphenyl ethers a contributing factor?. \$1500. Undergraduate student: Alexandra Yost.

Seeking animal alternatives in toxicity testing: Validation and enhancement of the fathead minnow fish embryo toxicity test as an alternative to larval fish toxicity tests. \$1500. Undergraduate student: Dane Stephens.

Funded TCU Honors College Proposals

JVR Honors College Board of Visitors Undergraduate Research/Creative Project Grant Program. 2017-2018. The effects of thyroid disrupting compounds on bone development in fathead minnows. \$1500. Undergraduate student: Mallory Seemann

JVR Honors College Board of Visitors Undergraduate Research/Creative Project Grant Program. 2017-2018. Analyzing the effects of thyroid disrupting compounds on eye development in *Pimephales promelas*. \$1500. Undergraduate student: Bethany Pierce

JVR Honors College Board TCU Honors Scholar Award. 2016-2017. Thyroid hormone regulation of immune function. \$1000. Undergraduate student: Meriel LeSueur.

JVR Honors College Board of Visitors Undergraduate Research/Creative Project Grant Program. 2016-2017. Thyroid hormone regulation of immune function. \$1000. Undergraduate student: Meriel LeSueur.

JVR Honors College Board of Visitors Undergraduate Research/Creative Project Grant Program. 2015-2016. Enhancing the fish embryo toxicity test: Growth, development abnormalities and gene expression as additional test endpoints. \$1000. Undergraduate student: Kyle Roush

Other Student Awards

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 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 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 Annual Meeting, 2016.

2nd Place Best Student Platform Presentation for “Development of cardiovascular and neurodevelopmental 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 Regional 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 Regional 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.*, A. Yost**, M. LeSueur**, D. Stephens**, M. Jeffries; South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, 2014.

Presentations (119 to date, 8 upcoming) *undergraduate, **graduate student, †invited Krzykwa J**, Roush KR**, **Jeffries MK**. *Upcoming – November 2018*. Development of methods for the assessment of vision and neurological function in larval fathead minnows. Submitted to Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting in June 2018.

Johnson A**, Bruns P**, Seemann M*, Hale MC, **Jeffries MK**. *Upcoming – November 2018*. Connecting developmental thyroid disruption to impaired reproductive success in fathead minnows. Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Malin L*, Finch M*, Gbedey W*, Nettelblad H*, Roush KR**, Thornton LM**, Wade C, **Sellin Jeffries MK**. *Upcoming – November 2018*. Endocrine disrupting compounds and immunity: The effects of estrogens and antiestrogens on immune function in fathead minnows. Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Thornton LM**, Finch M*, Venables BJ, **Jeffries MK**. *Upcoming – November 2018*. The impacts of early life stage hypothyroidism on immune function and the immune response in the fathead minnow (*Pimephales promelas*). Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Thornton LM**, **Jeffries MK**, Venables BJ. *Upcoming – November 2018*. Adaptation of methods for the immunofluorescent visualization of thyroxine (T4) in larval fathead minnows (*Pimephales promelas*). Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Roush KR**, **Jeffries MKS**. *Upcoming – November 2018*. An investigation of sexual maturity status as a confounding factor in screening assays for the detection of androgens and anti-estrogens. Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Roush KR**, **Jeffries MKS**. *Upcoming – November 2018*. Identifying estrogenic and anti-androgenic endocrine disrupting compounds: Can sexual maturity status influence test outcome? Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

Jeffries MKS. *Upcoming – November 2018.* The sexually dimorphic immune system: An Exploration of the influence of sex and sexual maturity status on immune function and immunotoxicity in fish. Society of Environmental Toxicology and Chemistry 39th North America Annual Meeting, Sacramento, CA.

†**Jeffries MKS.** 2018. Novel targets for endocrine disrupting compounds: Evidence of the immune and reproductive systems as targets for thyroid disruptors. National Chung Hsing University – Department of Life Sciences Seminar Series. Taichung City, Taiwan.

Seemann M*, Bruns P**, **Jeffries MK.** 2018. Identifying the causes of reproductive impairment following thyroid disruption. South Central Chapter of the Society of Toxicology and Chemistry Meeting, Junction, TX.

Stephens L*, Path EM*, Seemann M*, Egan H*, **Jeffries MK.** 2018. Developing a larval fathead minnow screening assay for the detection of thyroid disrupting compounds. South Central Chapter of the Society of Toxicology and Chemistry Meeting, Junction, TX.

Krzykwa JC**, **Jeffries MK.** 2018. Developing methods for assessment of optomotor response in larval fathead minnows. South Central Chapter of the Society of Toxicology and Chemistry Meeting, Junction, TX.

Roush KS**, **Jeffries MK.** 2018. Screening for reproductive endocrine disrupting compounds: Does phenotype influence test outcome? South Central Chapter of the Society of Toxicology and Chemistry Meeting, Junction, TX.

Thornton LM**, Venables BJ, **Jeffries MK.** 2018. Adaptation of methods for the immunofluorescent visualization of thyroxine (T4) in larval fathead minnows (*Pimephales promelas*). South Central Chapter Society of Toxicology and Chemistry Meeting, Junction, TX.

Thornton LM**, LeSueur MC*, **Jeffries MK.** 2017. Exposure to a model thyroid inhibitor alters the immune response and pathogen resistance in male fathead minnows (*Pimephales promelas*). Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Bruns P**, Seemann M*, **Jeffries MK.** 2017. Impacts of thyroid disruption on the reproductive behavior of fathead minnows. Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Krzykwa JC**, Saeid A*, Olivas AL*, **Jeffries MK.** 2017. Identifying potential sublethal endpoints related to neurological and cardiovascular function for the fish embryo toxicity test. Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Bruns P**, Pierce B*, Seemann M*, **Jeffries MK.** 2017. Reproductive effects of early life stage thyroid disruption in the fathead minnow. Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Jeffries MK. 2017. Endocrine disruption and immunity: Evidence for altered immune system development following early life exposures to endocrine disruptors. Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Roush, KS**, **Jeffries MK**. 2017. Refining caged fish study methods for assessing the environmental presence of antiestrogens: Does phenotype influence experimental outcome? Society of Environmental Toxicology and Chemistry 38th North America Annual Meeting, Minneapolis, MN.

Norberg-King TJ, Embry MR, Belanger SE, Braunbeck T, Butler JD, Dorn PB, Farr B, Guiney PD, Hughes S, **Jeffries M**, Journal R, Leonard M, McMaster M, Oris JT, Ryder K, Segner H, Senac T, Van der Kraak G, Wilson P, Whale G. 2017. The effluent toxicity assessment toolbox – international perspective on tools and concepts and opportunities for animal alternatives. Society of Environmental Toxicology and Chemistry Europe 27th Annual Meeting, Brussels, Belgium.

Roush KS**, **Jeffries MK**. 2017. Raising the steaks: A pilot study on the effects of cattle-associated, hormonally-active compounds in Texas watersheds. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Houston, TX.

Egan H*, **Jeffries MK**. 2017. Effects of early life stage exposure to thyroid-altering chemicals on the developing immune system of a small fish model. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Houston, TX.

Bruns PC**, Pierce B*, Seemann M*, **Jeffries MK**. 2017. Reproductive effects of early life stage thyroid disruption in the fathead minnow. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Houston, TX.

Krzykwa J**, Olivas A*, **Jeffries M**. 2017. Cardiovascular metrics as sublethal endpoints for the fish embryo toxicity test. South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Houston, TX.

LeSueur MC*, Thornton LM**, **Jeffries MK**. 2017. Exposure to the model goitrogen, propylthiouracil (PTU), alters the immune response and pathogen resistance in male fathead minnows (*Pimephales promelas*). South Central Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Houston, TX.

†**Jeffries MK**. 2017. Tools for tox: From fish embryo tests to immunotoxicity assays. Baylor University Department of Environmental Science Seminar Series, Waco, TX.

Bruns P**, Thornton LM**, **Jeffries MK**. 2016. Thinking outside the thyroid: Implications of disruption of thyroid hormone signaling on reproduction. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Bruns P**, **Jeffries MK**. 2016. The effects of early-life stage thyroid disruption on morphology, thyroid signaling, and reproduction in fathead minnows (*Pimephales promelas*). Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Krzykwa J**, **Jeffries MK**. 2016. Cardiovascular and neurodevelopmental metrics as sublethal endpoints for the fish embryo toxicity test. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Krzykwa J**, Roush KS**, Malmquist JA*, **Jeffries MK**. 2016. Making the fathead minnow fish embryo toxicity test feasible: Spawning strategies to optimize embryo production. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Path EM*, **Jeffries MK**. 2016. The developing fathead minnow as a screen for thyroid disrupting compounds: Identification of sensitive endpoints. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Meeting, Orlando, FL.

Roush KS*, Krzykwa J**, Stephens DA*, **Jeffries MK**. 2016. Balancing the effectiveness and practicality of alternative test endpoints for the fathead minnow fish embryo toxicity test. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

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

Snow DD, Kolok AS, Bartelt-Hunt SL, Uralbekov B, Mamilov N, **Jeffries MK**. 2016. An ecotoxicological voyage into Central Asia. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Bartelt-Hunt SL, Snow DD, Uralbekov B, Kolok AS, **Jeffries MK**, Mamilov N, Hoehn E, Sallach JB. 2016. Documenting water quality in the Syr Darya River Basin – the utility of passive sampling. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Norberg-King TJ, Embry MR, Belanger SE, Braunbeck T, Butler JD, Dorn PB, Farr B, Guiney PD, Hughes S, **Jeffries M**, Journal R, Leonard M, McMaster M, Oris JT, Ryder K, Segner H, Senac T, Van der Kraak G, Wilson P, Whale G. 2016. An assessment of whole effluent toxicity for the future with emphasis on reduction of animal use: results of a global workshop. Society of Environmental Toxicology and Chemistry 7th World Congress/37th North America Annual Meeting, Orlando, FL.

Jeffries M, Roush KS*, Krzykwa JC**, Phillips KM*, Malmquist JA*. 2016. Toward the 3R's in fish toxicity testing: Development of a fathead minnow fish embryo toxicity. 67th American Association of Laboratory Animal Science National Meeting, Charlotte, NC.

Krzykwa JC**, **Jeffries MK**. 2016. Development of cardiovascular and neurodevelopmental metrics as sublethal endpoints for the fish embryo toxicity test. Lone Star Chapter of the Society of Toxicology Meeting, Waco, TX.

Thornton LM**, Path EM*, Nystrom GS*, Venables BJ, **Jeffries MK**. 2016. Early life stage exposure to BDE-47 causes alterations in growth and decreased pathogen resistance in fathead minnows (*Pimephales promelas*). Lone Star Chapter of the Society of Toxicology Meeting, Waco, TX.

LeSueur, MC*, Thornton LM**, **Jeffries MK**. 2016. Exposures to the model thyroid inhibitor, propylthiouracil, alter immune function and impair pathogen resistance in a fish model. Lone Star Chapter of the Society of Toxicology Meeting, Waco, TX.

Norberg-King TJ, Embry MR, Belanger SE, Braunbeck T, Butler JD, Dorn PB, Farr B, Guiney PD, Hughes S, **Jeffries M**, Journal R, Leonard M, McMaster M, Oris JT, Ryder K, Segner H, Senac T, Van der Kraak G, Wilson P, Whale G. 2016. Concepts, tools, and strategies for effluent testing: An international survey. Society of Environmental Toxicology and Chemistry Europe 2016 Conference, Nantes, France.

Yost A*, Thornton LM**, Venables BJ, **Jeffries MK**. 2016. Global amphibian declines: Are exposures to polybrominated diphenylethers a contributing factor? South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Phillips KM*, Boudreaux T*, **Jeffries MK**. 2016. Molecular biomarkers of growth inhibition in fathead minnows: Early life stage ontogenetic expression profiles. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Bruns P**, **Jeffries MK**. 2016. Reproductive effects of early life stage chemically-induced hypothyroidism in the fathead minnow (*Pimephales promelas*). South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Malmquist J*, **Jeffries MK**. 2016. Effective spawning strategies for producing viable fathead minnow embryos for use in fish embryo toxicity tests. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Krzykwa JC**, **Jeffries MK**. 2016. Can the fish embryo toxicity test go chronic? Screening for sublethal endpoints to predict chronic toxicity in fathead minnow embryos. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Thornton LM**, Path EM*, Nystrom GS*, Venables BJ, **Jeffries MK**. 2016. The long-term impacts of early life stage PBDE-47 exposure across multiple systems in the fathead minnow (*Pimephales promelas*). South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Medders A*, Hale MC, **Jeffries MK**. 2016. Male fathead minnow phenotypes: Implications for toxicity testing. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Path EM*, Egan H*, **Jeffries MK**. 2016. Identifying sensitive endpoints of thyroid hormone disruption in early life stage fathead minnows. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Nystrom GS*, Snow DD, Uralbekov B, Kolok AS, Bartelt-Hunt SL, Mamylov N, **Jeffries MK**. 2016. Biological implications of chemical contamination in the Syr Darya watershed (Kazakhstan). South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Roush KS*, Krzykwa J**, Malmquist JA*, Stephens DA*, **Jeffries MK**. 2016. Enhancing the fish embryo toxicity test: Growth, developmental abnormalities and gene expression as additional test endpoints. South Central Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, Fort Worth, TX.

Nystrom GS*, **Jeffries MK**, Bartelt-Hunt SL, Kolok AS, Uralbekov B, Mamylov N, Snow DD. 2016. An ecological collapse: biological effects of chemical contamination in Kazakhstan's Syr Darya watershed. Central Ecology and Evolution Conference, Norman, OK.

Medders AM*, Hale MC, **Jeffries MK**. 2016. Males masculinity and immunity: A test of the immunocompetence handicap hypothesis in fathead minnows. Central Ecology and Evolution Conference, Norman, OK.

Sellin Jeffries MK. 2016. The FET for WET: Species comparisons, additional endpoints, and unforeseen obstacles. Health and Environmental Sciences International Workshop on Concepts, Tools, and Strategies for Effluent Testing, Paris, France.

Nystrom GS*, **Jeffries MK**, Bartelt-Hunt SL, Kolok AS, Uralbekov B, Mamylov N, Snow DD. 2016. Biomonitoring of the Syr Darya River (Kazakhstan): Chemical contamination and biological effects. Texas Chapter of the American Fisheries Society Meeting, Kerrville, TX.

Roush KS*, Krzykwa J**, Malmquist JA*, Stephens DA*, **Jeffries MK**. 2016. Enhancing the fish embryo toxicity test: Growth, developmental abnormalities and gene expression as additional endpoints. Texas Chapter of the American Fisheries Society Meeting, Kerrville, TX.

Sellin Jeffries MK, Yost AY*, Thornton LM**, Venables BJ. 2015. Brominated flame retardants: Evidence for altered thyroid signaling and neurological development in *Xenopus laevis* tadpoles. Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting, Salt Lake City, UT.

Sellin Jeffries MK, Roush KS*, Stephens DA*. 2015. Additional endpoints for the fathead minnow FET test: Evaluation of growth, developmental and gene expression metrics. Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting, Salt Lake City, UT.

Thornton LM**, Path EM*, Nystrom GS*, Venables BJ, **Sellin Jeffries MK**. 2015. Comparing the effects of PBDEs on reproductive and thyroid function in adult and early life stage fathead minnows. Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting, Salt Lake City, UT.

Thornton LM**, Path EM*, Nystrom GS*, Venables BJ, **Sellin Jeffries MK**. 2015. The organizational effects of PBDE-47 exposure on reproductive function in early life stage fathead minnows. Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting, Salt Lake City, UT.

Jeffries MK. 2015. Ecological risk assessment: A framework for assessing pesticide occurrence and ecological effects in the Syr Darya River basin. Workshop on Catalyzing New International Collaborations in Kazakhstan: Pesticide Occurrence and Ecological Effects in the Syr Darya River Basin. Almaty, Kazakhstan.

Thornton LM**, Yost AT*, LeSueur MC*, Stephens DA*, **Jeffries MK**. 2015. Development of the fathead minnow as a model organism for immunotoxicity: Characterization of basic immune function parameters. 18th International Symposium on Pollutant Responses in Marine Organisms, Trondheim, Norway.

Jeffries MK, Yost AY*, Thornton LM**, Venables BJ. 2015. Exposures to PBDE-47 alter development and thyroid-related gene expression in two model organisms, *Pimephales promelas* and *Xenopus laevis*. 18th International Symposium on Pollutant Responses in Marine Organisms, Trondheim, Norway.

Thornton LM**, Path EM,* Nystrom GS,* Venables BJ, **Jeffries MK**. 2015. Timing is everything: Exploring the differential effects of PBDE exposure in adult and early life stage fathead minnows. 18th International Symposium on Pollutant Responses in Marine Organisms, Trondheim, Norway.

Sellin Jeffries MK, Stultz AE, Smith AW, Stephens DA*, Roush KS*, Rawlings JM, Belanger SE, Oris JT. 2015. The fish embryo toxicity test as an alternative to the larval growth and survival test: Test sensitivity and alternative endpoints in zebrafish and fathead minnows. Society of Environmental Toxicology and Chemistry Europe 2015 Conference, Barcelona, Spain.

Yost AT*, Thornton LM**, Path EM*, Venables BJ, **Jeffries MK**. 2015. The effects of a ubiquitous aquatic contaminant, PBDE-47, on growth and thyroid function in fish and amphibians. Texas Chapter of the American Fisheries Society Annual Meeting, Tyler, TX.

Thornton LM**, LeSueur MC*, **Jeffries MK**. 2015. Basic aspects of immunity in two teleost model organisms, the fathead minnow and the sheepshead minnow. Texas Chapter of the American Fisheries Society Annual Meeting, Tyler, TX.

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

Stephens DA*, Roush KS*, Oris JT, **Jeffries MK**. 2015. The fathead minnow fish embryo test: An alternative method for evaluating whole effluent toxicity and surface water quality. Texas Chapter of the American Fisheries Society Annual Meeting, Tyler, TX.

⁷**Sellin Jeffries MK**, Claytor C, Stubblefield W, Pearson W, Oris JT. 2014. The development and application of a quantitative model to estimate the risk of PAH phototoxicity in Pacific Herring (*Clupea pallasii*) following the Exxon Valdez oil spill. Society of Environmental Toxicology and Chemistry Asia/Pacific 2014 Conference, Adelaide, Australia.

Sellin Jeffries MK, Stultz AE, Smith AW, Stephens D*, Rawlings J, Belanger S, Oris JT. 2014. Animal alternatives in whole effluent toxicity testing: Evaluation of the fathead minnow embryo test as a replacement for the larval growth and survival test. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, San Marcos, TX.

Yost A*, Lisner A*, Cox K*, **Jeffries M.** 2014. The effects of fluoride on thyroid hormone signaling and metamorphosis in *Xenopus laevis*. South Central Chapter of the Society of Environmental Toxicology and Chemistry Annual Meeting, San Marcos, TX.

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

⁷**Sellin Jeffries MK**, Stultz AE, Rawlings J, Belanger S, Oris JT. 2013. Webinar: Update on the development of alternative testing strategies and endpoints for determining whole effluent toxicity in fishes. Health and Environmental Science Institute Technical Committee Effluent Project Webinar.

Sellin Jeffries MK, Stultz AE, Rawlings J, Belanger S, Oris JT. 2013. The development of alternative strategies and additional endpoints for whole effluent toxicity testing in fishes. Society of Environmental Toxicology and Chemistry North America 34rd Annual Meeting, Nashville, TN.

Oris JT, **Sellin Jeffries MK**, Stultz AE, Zhang J, Bailer AJ. 2013. A Path Toward Effluent Toxicity Test Alternatives With Fish. Society of Environmental Toxicology and Chemistry North America 34rd Annual Meeting, Nashville, TN.

Thornton LM**, Oris JT, **Sellin Jeffries MK.** 2013. Development of the sheepshead minnow, *Cyprinodon variegatus*, as a model organism for immunotoxicity. Society of Environmental Toxicology and Chemistry North America 34rd Annual Meeting, Nashville, TN.

⁷**Sellin Jeffries MK.** 2012. Endocrine disruption in ecotoxicology: Minnows, manure, municipalities and immunity. University of North Carolina – Greensboro Department of Biology Seminar Series. Greensboro, NC.

⁷**Sellin Jeffries MK.** 2012. Fish on steroids: Defeminized females and immunocompromised males. University of the Pacific Biological Sciences Department Seminar Series. Stockton, CA.

Kolok AS, **Sellin Jeffries MK**, Bartelt-Hunt S. 2012. Agrichemicals and sediments: The hourglass. Society of Environmental Toxicology and Chemistry North America 33rd Annual Meeting, Long Beach, CA.

Sellin Jeffries MK, Arivett BA, Fiester SE, Coffey DD*, Thornton LM*, Smith AW*, Actis LA, Oris JT. 2012. Development of two small fish species, *Pimephales promelas* and *Cyprinodon variegatus*, as model organisms for immunotoxicity. Society of Environmental Toxicology and Chemistry North America 33rd Annual Meeting, Long Beach, CA.

Sellin Jeffries MK, Stultz AE, Rawlings J, Belanger S, Oris JT. 2012. Alternative strategies for assessing effluent toxicity in fish: A comparison of the fish embryo test and the larval growth and survival test. Society of Environmental Toxicology and Chemistry North America 33rd Annual Meeting, Long Beach, CA.

Rawlings J, Böhler S, **Sellin Jeffries MK**, Stultz AE, Oris JT, Braunbeck T, Norberg-King TJ, Belanger S. 2012. Progress towards the development of a fathead minnow embryo test and comparison to the zebrafish embryo test for assessing acute fish toxicity. Society of Environmental Toxicology and Chemistry North America 33rd Annual Meeting, Long Beach, CA.

[†]**Sellin Jeffries MK**. 2012. Fish on steroids: Defeminized females and immunocompromised males. Texas Christian University Department of Biology. Fort Worth, TX.

Thornton LM*, Oris JT, **Sellin Jeffries MK**. 2012. Development of the sheepshead minnow (*Cyprinodon variegatus*) as model organisms for immunotoxicity. Ohio Valley Society of Environmental Toxicology and Chemistry Regional Meeting, Oxford, OH.

Stultz AE, **Sellin Jeffries MK**, Oris JT. 2012. Alternative strategies for assessing effluent toxicity in fish: A comparison of the fish embryo test and the larval growth and survival test. Ohio Valley Society of Environmental Toxicology and Chemistry Meeting, Oxford, OH.

Kolok AS, **Sellin Jeffries MK**. 2012. Agrichemicals and sediments: The hourglass. American Water Resources Association Summer Specialty Conference, Denver, Colorado.

Oris JT, **Sellin Jeffries MK**, Stultz AE. 2012. Exploring animal alternatives: Seeking a replacement for whole effluent toxicity testing in fish. The 6th Society for Environmental Toxicology and Chemistry World Congress, Berlin, Germany.

[†]**Sellin Jeffries MK**. 2012. “How to succeed in graduate school”, University of Nebraska at Omaha Fund for Undergraduate Scholarly Experience (FUSE) Event, Omaha, NE.

Sellin Jeffries MK, Mehinto AC, Carter BJ, Denslow ND, Kolok AS. 2011. Microarrays in the field: Are differential gene expression patterns consistent with differences in contaminant loads between sites? Society of Environmental Toxicology and Chemistry North America 32nd Annual Meeting, Boston, MA.

Sellin Jeffries MK, Claytor C, Stubblefield W, Pearson W, Oris JT. 2011. Development and application of a quantitative model to predict the risk of PAH phototoxicity in herring following the *Exxon Valdez* oil spill. National Society of Environmental Toxicology and Chemistry North America 32nd Annual Meeting, Boston, MA.

Kolok AS, **Sellin MK**. 2011. Sediments from agriculturally intensive watersheds defeminize female fish via anti-estrogenic activity. ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico.

Kolok AS, **Sellin MK**. 2010. Eat dirt: The role of sediment in the endocrine disruption of fish reproductive physiology. 9th International Congress on the Biology of Fish in Barcelona, Spain.

Kolok AS, **Sellin MK**, Cowman T. 2010. Impact of sediment in runoff from tributary watersheds on Missouri River water quality. Missouri River Institute Research Symposium, Vermillion, SD.

[†]**Sellin MK**. 2010. Girls gone wild: Defeminization of female fish in agriculturally-intense watersheds. Miami University Brown Bag Lecture Series in Oxford, OH.

Sellin MK. 2010. Endocrine disruption in agriculturally-intense Nebraska watersheds. 2010 University of Nebraska Medical Center College of Public Health Grand Rounds in Omaha, NE.

Sellin MK, Cowman T, Kolok AS. 2010. The Big Muddy: Do sediments from agriculturally-intense tributaries affect water quality? Missouri River Natural Resource Committee Conference in Nebraska City, NE.

Sellin MK, Snow DD, Kolok AS. 2009. Endocrine disruption in an agricultural watershed: The role of sediments. Society of Environmental Toxicology and Chemistry North America 30th Annual Meeting, New Orleans, LA.

Kolok AS, **Sellin MK**, Snow DD. 2009. Hormones in the environment: When good assumptions go bad. Society of Environmental Toxicology and Chemistry North America 30th Annual Meeting, New Orleans, LA.

Sellin MK, Snow DD, Kolok AS. 2009. Endocrine disruption in an agricultural watershed: Sediments as a potential source of exposure. EmCom International Conference on the Occurrence, Fate, Effects and Analysis of Emerging Contaminants in the Environment, Fort Collins, CO.

Kolok AS, **Sellin MK**, Snow DD, Cowman T. 2009. Agrichemicals in the Bow Creek watershed: Occurrence and biological effect. Missouri River Institute Research Symposium, Vermillion, SD.

Sellin MK, Snow DD, Schwarz MS, Kolok AS. 2009. Agrochemicals in Nebraska watersheds: Occurrence and biological effects. Nebraska Chapter of the American Fisheries Society Meeting, Omaha, NE.

Sellin MK, Weigel J*, Snow DD, Carter BJ, Schwarz MS, Kolok AS. 2008. Endocrine disruption in the Elkhorn River: Girls gone wild? Society of Environmental Toxicology and Chemistry North America 29th Annual Meeting, Tampa, FL.

Sellin MK, Kolok AS. 2008. Girls gone wild: Defeminization in the Elkhorn River. International Congress on the Biology of Fish meeting in Portland, OR.

Kolok AS, **Sellin MK**, Snow DD. 2008. Estrogenic compounds downstream from six small cities in eastern Nebraska: Occurrence and biological effect. Society of Environmental Toxicology and Chemistry North America 29th Annual Meeting, Tampa, FL.

Sellin, MK, Kolok AS, Gustafson ST*, Akerly DL*, Hartmann MM*. 2008. Vitellogenin gene expression as a biomarker of exposure to steroidogenic contaminants. One Health Symposium, Omaha, NE.

Kolok AS, **Sellin MK**. 2008. Endocrine-disrupting compounds in Nebraska: Should you be concerned? Nebraska Chapter of the American Fisheries Society Meeting, Omaha, NE.

Sellin MK, Gustafson ST*, Hartmann MM*, Snow DD, Erikson GE, Kolok AS. 2007. Growth-promoting implants increase the toxicity of cattle wastes: you gotta beef with that? American Water Resource Association Conference, Vail, CO.

Kolok AS, Akerly DA*, Hartmann MM, **Sellin MK**, Snow DD. 2007. Size Matters?: Small Cities in Nebraska, the Release of Estrogenic Compounds and their Biological Impacts on Fish. American Water Resource Association Conference, Vail, CO.

Sellin MK, Kolok AS, Gustafson ST*, Akerly DL*, Hartmann MM*. 2007. Vitellogenin gene expression as a biomarker of exposure to steroidogenic contaminants. 3rd Annual Nebraska Research and Innovation Conference, Omaha, NE.

†Kolok AS, Akerly DL*, Snow DD, **Sellin MK**. 2007. Biological effect of estrogenic compounds released from three Nebraska wastewater treatment plants. 51st Annual Great Plains Waste Management Conference, Council Bluffs, IA.

Kolok AS, **Sellin MK**, Hartmann MM, Akerly DL. 2007. Size matters: the effect of development on gene expression in an environmental sentinel organism, the fathead minnow. Iowa-Kansas-Nebraska American Fisheries Society Meeting, Council Bluffs, IA.

†Eidem TM*, **Sellin MK**, Kolok AS. 2006. Reproductive success of fathead minnows exposed to cadmium: are there sex specific differences? Nebraska's Institutional Development Awards Networks of Biomedical Research Excellence, Grand Island, NE.

Sellin MK, Kolok AS. 2006. Impacts of cadmium on reproduction of fathead minnows exposed during embryo, larval and adult life stages. Society for the Study of Reproduction, Omaha, NE.

Sellin MK, Kolok AS. 2006. Exposure to cadmium during various life stages: effects on spawning success and reproductive physiology. Ozark-Prairie Chapter of the Society of Environmental Toxicology and Chemistry, Columbia, MO.

†**Sellin MK**. 2005. The effects of episodic exposures on survival and reproduction in fathead minnows. University of Nebraska Biology Department Seminar Series, Omaha, NE.

Sellin MK, Kolok AS. 2005. Episodic exposures: Do they enhance the copper tolerance of larval fathead minnows?. American Fisheries Society Nebraska Chapter Meeting, Ponca, NE.

Sellin MK, Kolok AS. 2005. Cd exposures in fathead minnows: effects on adult spawning success and reproductive physiology. American Fisheries Society Meeting, Anchorage, AK.

Sellin MK, Kolok AS. 2005. Do Cd exposures during early development impact reproductive potential of fathead minnows?. American Fisheries Society Meeting, Anchorage, AK.

Sellin MK, Kolok AS. 2004. Maternally transferred Cu tolerance in larval fathead minnows: how long does it persist?. Society for Environmental Toxicology and Chemistry North America 25th Annual Meeting, Portland, OR.

Tate-Boldt EK, **Sellin MK**, Kolok AS. 2004. Persistence of acclimation in larval and juvenile fathead minnows (*Pimephales promelas*) episodically exposed to copper. Society for Environmental Toxicology and Chemistry North America 25th Annual Meeting, Portland, OR.

†**Sellin MK**, Kolok AS. 2004. Cd exposures during development in fathead minnows: effects on reproductive physiology and reproductive success. E.hormone Conference, New Orleans, LA.

***Sellin MK**. 2004. Early life history exposures to cadmium in fathead minnows: effects on reproduction. Environmental Protection Agency Science to Achieve Results Graduate Fellowship Conference, Washington, D.C.

Sellin MK, Kolok AS. 2004. Persistence of Cu tolerance in larval fathead minnows. Joint Meeting of the Midwest Chapter and Ozark-Prairie Chapter of the Society for Environmental Toxicology and Chemistry, LaCrosse, WI.

Kolok AS, **Sellin MK**, Peake EB. Can fish acclimate to toxic compounds with the exposures are episodic? 30th Annual Great Plains Limnology Conference, Lincoln, NE.

Sellin MK, Kolok AS. 2003. Acclimation to Cu in larval fathead minnows: how long does it persist? Ozark-Prairie Society of Environmental Toxicology and Chemistry, St. Louis, MO.

SERVICE

Departmental Service

Member, Biology Department Undergraduate Research Committee, 2017-present

Member, Committee on SRS Poster Judging, 2017-present

Member, Biology Department Committee on Graduate Studies, 2014-present

Coordinator, Mondays at TCU, 2014-present

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 Service

Chair, College of Science and Engineering Honors Symposium Committee, 2016-present

Member, Health Professions Advising Committee, 2014-present

University Service

Alternate Member, TCU Institutional Animal Care and Use Committee, 2018-present

Member, TCU Office of Research Compliance Advisory Committee, 2017-present

Member, Honors College Undergraduate Research Grant Committee, 2016-present

College of Science and Engineering Honors Week Liaison, 2015-present

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

Member, TCU Allies Program, 2015-present

Lecturer, Experience TCU (Chancellor's Scholars weekend), 2015

Professional Affiliations and Service

American Association for Laboratory Animal Science, Silver Member, 2014-present

Council on Undergraduate Research, Member, 2016-present

Health and Environmental Sciences Institute Animal Alternatives Committee

Advisory Committee Member, 2014-present

Invited Workshop Speaker, 2016

Breakout Session Moderator, 2016

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

Society of Environmental Toxicology and Chemistry, 2004 – present
Editorial Board, *Environmental Toxicology and Chemistry*, 2017-present
Immediate Past President, South Central Chapter, 2018-present
President, South Central Chapter, 2017-2018
Vice President, South Central Chapter, 2016-2017
Webmaster, South Central Chapter 2015-present
Nominating Committee Member, South Central Chapter, 2015-2016
South Central Chapter Annual Meeting Co-host with M. Chumchal and R. Drenner, 2016
North America Annual Meeting Session Co-chair for:
 “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
South Central Chapter Member, 2014-present
Ohio Valley Member, 2012-2013
Ozark-Prairie Chapter Member, 2003-2010
American Fisheries Society
 North America Member, 2005
 Nebraska Chapter Member, 2005-2009

Other Professional Service Activities

Manuscript Referee.

Aquatic Toxicology, BMC Genomics, Chemosphere, Comparative Biochemistry and Physiology, Ecotoxicology, Ecotoxicology and Environmental Safety, 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, Histology and Histopathology, Journal of Environmental Quality, 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, Toxicology and Industrial Health

Textbook Reviewer.

Human Physiology: Mechanisms and Logic (publisher: Jones and Bartlett Learning), 2016.

Proposal Reviewer.

Graduate Women in Science – Fellowship Program, 2018.

National Science Foundation - International Research Fellowship Program, 2012.

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 of whether the fish embryo toxicity test can be utilized as an alternative to existing toxicity testing strategies.