

## Developmental thyroid disruption and long-term impacts on reproduction

Marlo Jeffries, Associate Chair and Associate Professor of Biology, Texas Christian University

**Abstract:** Thyroid-disrupting compounds (TDCs) are ubiquitous aquatic contaminants that alter thyroid hormone signaling and homeostasis. Given the well-known roles of thyroid hormones in vertebrate growth and development, most toxicological studies have focused on the ability of TDCs to alter growth, metamorphosis, and somatic development. However, thyroid hormones key play roles outside of these processes and emerging evidence suggests that TDCs may alter sex-steroid hormone signaling and reproduction. This seminar will present the results of multiple experiments seeking to understand the impacts of early-life-stage TDC exposures on reproduction in fish. Specifically, studies aimed at identifying the impacts of propylthiouracil (PTU), a model thyroid hormone suppressant, on the reproductive success of fathead minnows will be discussed. In addition, the results of transcriptomic and behavioral studies aimed at narrowing the mechanisms underlying PTU-induced alterations in reproductive output will also be presented. Overall, this seminar will highlight the need for toxicology studies on TDCs to consider pathways and processes outside of somatic growth and development as potential targets for disruption.