

REPRODUCTIVE AND DEVELOPMENTAL TOXICOLOGY

16:340:591

Course Directors: Dr. Troy Roepke
ta.roepke@rutgers.edu

Course Description: Application of toxicological principles in reproductive studies and instruction on the effects of toxicants on male and female reproduction, and on the developing embryo/fetus. Critical evaluation of reproductive toxicity studies and development of mechanistic approaches to understanding how chemical exposure can adversely affect reproduction. In this course, you will be presented with principles of reproduction and development and how environmental contaminants can impact the normal functions of both. The emphasis here will be on the cellular and physiological mechanisms and pathways that are impacted by toxicants on model species (rodents, etc.), wildlife and human populations. The information will also address the various problems surrounding experimental design, dosage, application and assessment.

Course Objectives:

- Acquire basic knowledge of reproductive and developmental actions of toxicants
- Apply standard exposure models and risk assessments to assess the effects of toxicants
- Engage critical thinking to evaluate the literature and generate a hypothesis for oral presentation
- Write a research proposal in the area of Reproductive & Developmental Toxicology using grant writing guidelines of the National Institutes of Health.

LECTURE SCHEDULE

Topics	Lecturers
Principles of Toxicology	T. Roepke
Hormones & Receptors	T. Roepke
Female Reproduction	T. Roepke
Male Reproduction	T. Roepke
Neuroendocrinology	T. Roepke
Fertilization to Puberty	T. Roepke
Male Reproductive Toxicology	T. Roepke
Female Reproductive Toxicology	M. Uzumcu
Pharmaceutical Reproductive Toxicology Testing	K. Thompson
Analysis of Toxicity Testing	K. Thompson
Maternal-Fetal Transfer	L. Aleksunes
Endocrine Disruptors	T. Roepke
Embryonic Defenses	T. Roepke
Developmental Toxicology - Teratology	T. Roepke
Developmental Neurotoxicology	J. Magby
Dev. Programming and Epigenetics	Zama
Metals in Repro & Developmental Toxicology	T. Roepke
Repro & Dev. Tox in Non-Mammalian Models	T. Roepke
Special Lecture: Bioaccumulation of Mercury	Reinfelder
Wild-life Impacts	T. Roepke