PH.D. IN TOXICOLOGY

Toxicology is the study of the effects of chemicals and other potentially harmful agents on biological systems. The field draws upon the sciences of biology, chemistry, biochemistry, physiology, cell and molecular biology, neuroscience, and pathology. The core curriculum provides a comprehensive background in toxicology, enhanced by elective offerings in the department and the many related basic and health science courses available at CSU. The Ph.D. in Toxicology prepares students for research careers in industry, government, and academia. The emphasis is on developing the abilities of the student to progress to a career as an independent scientist.

Learn more about the Ph.D. in Toxicology on the Department of Environmental and Radiological Health Sciences website.

Students interested in graduate work should refer to the Graduate and Professional Bulletin.

Learning Objectives

Students successfully completing this degree will be able to:

- 1. Analyze and interpret dose-response information in both qualitative and quantitative terms.
- Describe the fundamental processes of absorption, distribution, metabolism and elimination and the implications of these processes and interpret data related to them.
- 3. Describe toxic responses affecting organs, physiological systems, cells and biomolecules and interpret related toxicological data.
- Explain molecular, cellular and physiological mechanisms of toxicity and critically evaluate research results providing evidence for these mechanisms.
- 5. Describe xenobiotic biotransformation pathways that lead to bioactivation and detoxification.
- 6. Correctly interpret pathological changes due to toxicant exposure.
- 7. Analyze and interpret toxicological data.
- 8. Formulate hypotheses related to toxicological effects and mechanisms.
- 9. Design and implement experimental approaches to testing toxicological hypotheses.
- 10. Successfully conduct toxicological research.
- Describe, analyze and interpret the results of toxicological research in written form conforming to accepted standards of scientific communication and peer-reviewed publication.
- 12. Competently present toxicological research results orally.