



EITS OVERVIEW

The IIT is proud to offer a multidisciplinary graduate program in Environmental and Integrative Toxicological Sciences (EITS) that provides training in toxicology to doctoral students as well as postdoctoral fellows. Our doctoral (PhD) program offers students extensive research training in a specific basic science discipline as well as toxicology. Trainees acquire a broad base of knowledge through a program of courses, seminars, workshops and scientific meetings as well as by becoming active members of a research laboratory and the campus-wide toxicology community. This training prepares students in a highly collaborative and interactive environment to become leaders in the discipline of toxicology with a focus on solving current problems and preventing future threats to human, animal and environmental health.

The Environmental and Integrative Toxicological Sciences (EITS) Doctoral Program

The discipline of toxicology applies knowledge from related disciplines to understand how toxic agents cause harm to humans and animals. For example, understanding how heavy metals damage the brain requires knowledge of biochemistry, molecular biology and other disciplines. Accordingly, rigorous training in a basic science discipline plus learning how chemicals, drugs and naturally occurring toxins can cause harm forms the cornerstone of toxicology training at MSU. To provide both of these, the IIT at MSU offers a “dual major” doctoral program. Each student engages in graduate education in a partnering basic science doctoral program that matches the student’s scientific interests. With this as a foundation, the EITS graduate program provides customized and coordinated training that enables a student to launch a successful career in the science of toxicology.



Upon completion, the student receives a PhD in his/her chosen discipline with a dual major in Environmental and Integrative Toxicological Sciences.

Many IIT-affiliated faculty are leaders in the discipline of toxicology and dedicated to research and training of graduate students. As an EITS toxicology trainee, you will gain knowledge and expertise through an interactive program of courses, research, seminars, and scientific meetings and by being an active member of the scientific community at MSU.

What to Expect

As a student with an interest in toxicology graduate education at the doctoral level, you will enter MSU through one of our cooperating disciplinary programs, engage in laboratory rotations and complete your first year of coursework. During this time you will learn techniques, experience diverse areas of research, get to know prospective faculty mentors, and decide on a lab and advisor for your thesis research. Toward the end of your first year, you will apply for and enter into the EITS doctoral program in toxicology.

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An incoming student chooses among three curricular tracks with different course requirements: the “Bio-medical Toxicology Track” serves students entering with a strong background in mammalian biology and with interest in mechanisms of toxicity. The “Food Toxicology and Ingredient Safety Track” serves students interested in the safety of food-borne and consumer product ingredients. Students entering with backgrounds in disciplines other than mammalian biology (e.g., chemistry, engineering, etc.) may choose the “Environmental Toxicology Track”, which emphasizes fate of chemicals in the environment, bioremediation and ecotoxicology. During the ensuing years, you will complete research on your thesis project. In the process, you will present your work at scientific meetings, complete a Ph.D. qualifying exam, write research reports for publication and participate in seminars and other EITS-sponsored gatherings. Your time as a doctoral student will culminate with a presentation of your research to the MSU scientific community and a “defense” of your thesis before your thesis committee. Upon graduation, you will be well prepared for a career in toxicology.

Diagram of the EITS Program

Students entering the Ph.D. Program in Environmental and Integrative Toxicological Sciences, are first accepted into a disciplinary doctoral program (one of the small, peripheral arrows) and then enter the EITS Graduate Program near the end of their first year (longer arrows). Upon completion, the student receives a PhD in his/her chosen discipline with a dual major in Environmental and Integrative Toxicological Sciences.

Disciplinary programs are noted in boxes. Plum-bordered boxes indicate departmentally based programs, whereas teal-bordered boxes denote interdepartmental (multidisciplinary) programs. Students in programs shown in tan boxes typically choose the Biomedical Toxicology Track of the EITS Program, whereas students in programs in the lime green boxes typically enter the Environmental Toxicology Track. Underlined programs participate in the Biomolecular Sciences Gateway joint recruiting program.

