



EITS@MSU

ENVIRONMENTAL & INTEGRATIVE TOXICOLOGICAL SCIENCES

The Institute for Integrative Toxicology

at Michigan State University offers a multidisciplinary training program in Environmental and Integrative Toxicological Sciences (EITS). The EITS program provides doctoral students and postdoctoral fellows with extensive research training in a specific basic science discipline as well as in toxicology. Students are recruited into the EITS program from diverse educational backgrounds including biological sciences, natural sciences and engineering. Trainees acquire a broad base of knowledge through an interactive program of courses, seminars, workshops and scientific meetings as well as by becoming an active member of a research laboratory and the campus-wide scientific community. This training prepares students to interact with multidisciplinary teams focused on the goal of solving current and preventing future threats to human, animal and environmental health.



FLEXIBILITY

Rigorous training in a basic science discipline and knowledge of how chemicals can cause harm are required to be a cutting edge researcher in toxicology. To provide both of these, the IIT at MSU offers a “dual-major” graduate program. Each student engages in graduate education in a partnering basic science doctoral program that fits the student’s scientific interests. With this as a foundation, the EITS program provides customized and coordinated training that enables a student to launch a successful career that is toxicology based. An incoming student chooses among three curricular tracks with different course requirements: the “Biomedical 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. Upon completion, the student receives a PhD in his/her chosen discipline with a dual major in Environmental and Integrative Toxicological Sciences.

INTEGRATIVE APPROACH

The breadth of toxicology research at MSU spans investigations of environmental (air, water, soil), occupational, food-borne, consumer product and pharmaceutical agents. The integrative approach encompasses exploration of toxicologic mechanisms at the whole organism, cellular, biochemical, molecular and genomic levels. The following MSU basic science graduate programs partner with the EITS program:

- » Animal Science
- » Biochemistry and Molecular Biology
- » Cell and Molecular Biology
- » Chemistry
- » Comparative Medicine & Integrative Biology
- » Earth and Environmental Sciences
- » Fisheries and Wildlife
- » Food Science & Human Nutrition
- » Forestry
- » Genetics
- » Integrative Biology
- » Microbiology & Molecular Genetics
- » Neuroscience
- » Pathobiology & Diagnostic Investigation
- » Pharmacology & Toxicology
- » Physiology
- » Plant, Soil & Microbial Sciences

A PATH TO A GREAT CAREER

Our graduates are sought for careers in industry, government and academia. MSU is home to cutting edge research facilities, including the Mass Spectrometry Facility, the Center for Advanced Microscopy, the Genomics Technology Support Facility, and a Proteomics Facility. The Environmental and Integrative Toxicological Sciences training program faculty are outstanding in their areas of research and are committed to excellence in graduate education.



Examples of Toxicology Research Areas at MSU:

- » adverse drug reactions
- » endocrine disrupting chemicals
- » chemical susceptibility factors in asthma
- » immunotoxicology
- » toxicology of dioxin and polychlorinated biphenyls
- » food- and air-borne fungal toxins
- » liver inflammation and toxicity
- » airway injury from ozone and particulates
- » role of cellular hypoxia in metal and drug toxicity
- » epigenetic toxicology
- » mercury neurotoxicology
- » lung inflammation and cancer
- » catalytic and microbial degradation of soil contaminants
- » environmental factors in Parkinson's disease
- » gene-environmental chemical interactions
- » ecotoxicology of fish

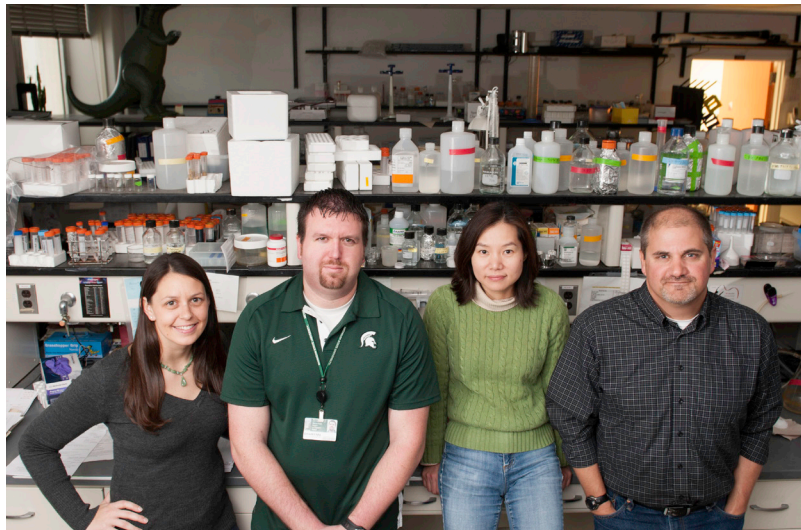


THE UNIVERSITY

Michigan State University Spartans work to advance the common good with uncommon will. The nation's pioneer land-grant university, MSU began as a bold experiment that democratized higher education and helped bring science and innovation into everyday life. Today, MSU is one of the top research universities in the world—on one of the biggest, greenest campuses in the nation—and is home to a diverse community of dedicated students and scholars, athletes and artists, scientists and leaders. Minutes from the state capital, MSU is home to world-class performing arts facilities, beautiful gardens, a wide variety of sport and outdoor activities, art/craft fairs and cultural activities. Surrounded by the Great Lakes and dotted with woodlands and rivers, Michigan offers many year-round opportunities for hiking, kayaking, bicycling, camping, walking beaches, skiing, boating, visiting local wineries and breweries and other activities.

FINANCIAL AID

Graduate fellowships are available to cover tuition, health insurance and living expenses. Some of this doctoral and postdoctoral stipend support is provided by a training grant from the National Institute of Environmental Health Sciences of the National Institutes of Health. Other support and fellowships are available for toxicology trainees through departments, faculty research grants, the IIT and the University. MSU welcomes applications from individuals from under-represented groups.



FOR MORE INFORMATION

about the EITS graduate program,
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