Human Toxicology

Director
• Larry W. Robertson (Occupational and Environmental Health)

Associate director
• Peter Thorne (Occupational and Environmental Health/Civil and Environmental Engineering)

Director of graduate studies
• Gabriele Ludewig (Occupational and Environmental Health)

Graduate degrees: M.S. in human toxicology; Ph.D. in human toxicology
Faculty: http://toxicology.grad.uiowa.edu/faculty
Web site: http://toxicology.grad.uiowa.edu/

Toxicology is the study of how biological, chemical, physical, and radiological agents affect living organisms and the ecosystem, and how to prevent or lessen the adverse effects of those agents. The Human Toxicology Program prepares toxicologists to identify and assess environmental exposures, identify mechanisms by which toxicants affect homeostasis or induce disease, identify interventions to prevent adverse effects, and estimate acceptable levels of exposure to protect public health.

The program is interdisciplinary, involving the Graduate College, the Carver College of Medicine, and the Colleges of Engineering, Liberal Arts and Sciences, Pharmacy, and Public Health.

The Human Toxicology Program is supported by the Iowa Superfund Research Program. Human toxicology faculty members are supported by the Environmental Health Sciences Research Center, a National Institute of Environmental Health Center of Excellence.

Graduate Programs of Study
• Master of Science in human toxicology
• Doctor of Philosophy in human toxicology

Master of Science
The Master of Science program in human toxicology requires a minimum of 39 s.h. of graduate credit and a thesis is required. The program is designed for students who wish to pursue a master's degree as a second degree or through part-time study, particularly those who perform toxicologists' functions in their jobs and who need additional training.

Entering students should have backgrounds in the biological, engineering, and physical sciences and should have completed courses in introductory chemistry and biology, and organic chemistry.

After entering the program, each student works with his or her assigned mentor to choose an advisory committee, which meets at least once a semester to help the student explore his or her research interests. The committee also provides consultation on course work and research activities and serves as the committee for the final examination (thesis defense).

The Human Toxicology Program is flexible. Students work with their advisory committees to plan a course of study tailored to their individual interests and goals within the field of toxicology.

All M.S. students must successfully complete the following course work as part of their course of study.

A first course in toxicology—one of these:
OEH:5710 Environmental Toxicology 3 s.h.
PHAR:5544 Pharmaceutical and Chemical Toxicology 3 s.h.

Advanced toxicology:
OEH:6720 Advanced Toxicology 4 s.h.

Scholarly integrity:

Doctor of Philosophy
The Doctor of Philosophy program in human toxicology requires a minimum of 72 s.h. of graduate credit. The program is designed for students with backgrounds in the biological, engineering, and physical sciences. Entering students should have solid training in science, including courses in introductory chemistry and biology, and organic chemistry; knowledge of biochemistry and molecular biology is also useful. Students may remedy deficiencies by taking appropriate courses during their first year of graduate study.

Students begin the program with three two-month rotations in the laboratories of participating faculty members, in order to identify a mentor. After the first year, the mentor assumes financial responsibility for the student. With advice from his or her mentor, each student chooses an advisory committee, which meets at least once a semester to help the student explore his or her research interests. The committee also provides consultation on course work and research activities and serves as the committee for the comprehensive examination and the final examination (dissertation defense).

The Human Toxicology Program is flexible. Students work with their advisory committees to plan a course of study tailored to their individual interests and goals within the field of toxicology.

All Ph.D. students must successfully complete the following course work as part of their course of study.

A first course in toxicology—one of these:
OEH:5710 Environmental Toxicology 3 s.h.
PHAR:5544 Pharmaceutical and Chemical Toxicology 3 s.h.

Advanced toxicology:
OEH:6720 Advanced Toxicology 4 s.h.

Scholarly integrity—students must complete the course within their first two years of graduate study:
Research seminar—students must take the course each semester they are enrolled in the human toxicology graduate program:

**TOX:7180 Toxicology Research Seminar** 0-1 s.h.
After successfully completing the comprehensive examination, usually at the end of the second year of graduate study, the student advances to Ph.D. candidacy. The student devotes all of his or her time to dissertation research and writing. Upon successful completion of all requirements, including the dissertation and its oral defense, the student is awarded a Doctor of Philosophy.

**Admission**
Prospective students may apply to the program via a centralized application system; see Admission on the Human Toxicology Program web site.

Completed applications should be submitted by March 1; applications submitted after that date are reviewed as they are received and are considered for any remaining openings.

Applicants must meet the admission requirements of the Graduate College; see the Manual of Rules and Regulations of the Graduate College.

**Financial Support**
Doctoral students in human toxicology receive stipends and tuition support from University of Iowa sources, including internal fellowships and graduate research assistantships, and from non-University sources, such as training grants from the National Institutes of Health.

**Facilities**
Training is conducted primarily in laboratories and teaching facilities of the departments and colleges of Human Toxicology Program faculty members. These are among the best-equipped laboratories on campus. Together with the University’s central research facilities, they provide access to the most up-to-date research equipment and expertise.

**Associated Courses**
For course descriptions and prerequisite information, see the course listings in the College of Pharmacy and Department of Occupational and Environmental Health sections of the Catalog.

**Courses**

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