

# Toxicology

## College of Medicine

The Department of Toxicology and Cancer Biology is a multidisciplinary unit for research and graduate education in the broad areas of toxicology and cancer biology. Our mission is to provide students with an education in toxicology and cancer biology that is based on an understanding of biochemistry, physiology, molecular biology, cell biology, genetics and systems biology. This is coupled with in-depth research experience on the mechanisms by which environmental agents cause disease, with primary emphases in the areas of cancer, cardiovascular disease, and neurodegeneration. The roles of redox signaling, DNA repair and metabolism are areas of focus. Our department consists of 19 tenured/tenure track core faculty with a primary appointment in The Department of Toxicology and Cancer Biology. The diversity of training opportunities is enhanced by a large number of faculty who have joint appointments in the department, but whose primary appointments are in departments and colleges across the University of Kentucky including Agriculture, Biochemistry, Chemistry, Nutritional Sciences, Pathology, Pharmacy, Pharmacology, Radiation Medicine, and Veterinary Medicine. The Department of Toxicology and Cancer Biology has graduated more than 170 PhDs who have gone on to careers in academia as faculty members at major research universities, government agencies, such as the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA), and in the pharmaceutical and chemical industries. The department maintains a robust extramurally supported training environment, including an NIEHS T32 training grant for doctoral students in Toxicology and Cancer Biology, which has been continuously funded since 1990.

The department is housed in the Health Sciences Research Building in the Medical Center within easy walking distance of all major research units and colleges. Excellent research support facilities are available, including transgenic mouse, macromolecular structure, mass spectrometry, nuclear magnetic resonance, proteomics, genomics, and metabolomics.

### Admission Requirements

Applicants must meet the following requirements for admission to the University of Kentucky Graduate School and the Toxicology and Cancer Biology program.

1. An appropriate degree (e.g., Chemistry, Biological Sciences) from an accredited college or university.
2. A minimum grade point average of 3.0 on a 4.0 scale.
3. An average Graduate Record Examination (GRE) score on the verbal, quantitative and analytical sections that is great than 50th percentile.
4. For international applicants, the minimum acceptable TOFEL score is 550 (paper-based), 213 (computer-based), or 79 (internet-based). The minimum IELTS score is 6.5.

Applicants with lesser qualifications will be accepted only if other indices of performance and qualification are outstanding.

### Graduate Courses

IBS 601	Biomolecules and Metabolism	(3)
IBS 602	Molecular Biology & Genetics	(3)
IBS 603	Cell Biology & Cell Signaling	(3)
IBS 606	Physiological Communications	(3)
IBS 608	Special Topics in IBS	(2)
IBS 610	Critical Reading/Small Groups	(2)

IBS 611	Practical Statistics	(1)
IBS 607	Seminar in Integrated Biomedical Sciences	(0)
IBS 609	Research in Integrated Biomedical Sciences	(1)
TOX 600	Ethics in Scientific Research	(1)
TOX663	Drug Metabolism and Disposition	(2)
TOX 680	Molecular Mechanism in Toxicology	(5)
TOX 770-001	Toxicology Seminar	(0-1)
TOX 770-002	Journal Club for First Year Toxicology Students	(1)
TOX 780	Special Problems in Toxicology /Grant Writing	(2)