

Interdisciplinary MS in Nanomedicine

Description

Administration

Admission

UNIVERSITY OF
LOUISVILLE

MS in Nanomedicine Description

Nanomedicine is a “... highly specific medical intervention at the molecular scale for curing disease or repairing damaged tissues...” (National Institutes of Health (NIH) Common fund)

This interdisciplinary program integrates studies in bioengineering with pharmacology and toxicology, with the goal of developing innovative biological and medical solutions. Students pursuing careers in the biotechnology and pharmaceutical industries or seeking to enter professional programs (e.g., medical, dental, bioengineering, nursing, pharmacy) may be especially interested.

Students will master concepts for nanoscale bioengineering and design of advanced biomaterials. Students will also master nanopharmacology principles related to the biophysical characterization, biodistribution, clearance, and pharmacokinetic modeling of nanopharmaceuticals. Key translational nanomedicine concepts will focus on the interface between immunology and nanomedicine, immunotherapeutics, extracellular vesicle-based nanomedicine, nanotoxicology, nanomedicine manufacturing and regulation.

Elective courses allow the program to be customized with a pharmacology or bioengineering emphasis depending on the career goals of the student, including such topics as toxicology, biomedical acoustics, mechanobiology, and machine learning. The program is 30-credit hours and is designed to be completed within one year (three semesters).

To be successful, a bachelor's degree in a science-related discipline including biology, biochemistry, chemistry, engineering, physics, or a medical/health care-related field is ideal. Applicants must have a minimum overall GPA of 3.0, and a minimum science course GPA of 3.0 to be considered for admission.

MS in Nanomedicine Administration

Track Administrators:

Joshua L Hood M.D., Ph.D.

Department of Pharmacology &
Toxicology

Hermann Frieboes, Ph.D.

Department of Bioengineering

UNIVERSITY OF
LOUISVILLE

MS in Nanomedicine Admission

Admission and Degree Requirements

Applications are submitted through
the School of Graduate Studies