



Pharmacology

MASTER OF SCIENCE

Northeastern University
Bouvé College of
Health Sciences

Pharmacology scientists and researchers are crucial in providing a clear depiction of how drugs affect our biological ecosystems. Their work is important in aiding the discovery of new and improved treatments, providing clarity on why drugs affect people differently, and uncovering the reasons why medication may cause certain side effects.

The Master of Science in Pharmacology provides students with a comprehensive knowledge of both the theoretical and applied aspects of the discipline at all levels of biological organization, from the molecular to the organism. It places an emphasis on understanding how drug action elicits a therapeutic outcome and the safety and efficacy consequences associated with pharmacotherapeutics.

PROGRAM BENEFITS

Apply theory to practice with co-op and internship opportunities throughout Boston, the hub of the big-pharma/biotech industry.

Learn and collaborate with industry-practiced faculty members who act as a resource for professional development and provide guidance to help advance your career.

Conduct original research experiments in leading-edge and world-class department labs.

Gain preparation for a full PhD by applying MS in Pharmacology coursework to the PhD program requirements.

PROGRAM OUTCOMES

Evaluate critical topics of contemporary focus in pharmacology as applied to drug action, use, delivery, and toxicology.

Identify major themes, knowledge gaps, and research problems regarding drug action, profiling, and therapeutic application.

Advance drug discovery and translational medicine by employing pharmacology principles.

Execute laboratory experiments in pharmacology that advance your understanding of drugs and their effects.

CURRICULUM OUTLINE

Required Courses (14-16 semester hours):

- Concepts in Pharmaceutical Science
- Concepts in Pharmaceutical Science 2
- Research Skills and Ethics or Ethical Problems in Health Sciences Research
- Pharmaceutical Biochemistry or Pharmaceutical Sciences Laboratory
- Cellular Physiology
- Experimental Design and Biostatistics
- Human Physiology and Pathophysiology

Pharmacology (6 semester hours)

- Pharmacology 1
- Pharmacology 2
- Receptor Pharmacology

Sample Electives

(11-13 semester hours):

- Integrated Anatomy and Physiology
- Drug Safety and Immunogenicity
- Bioanalytical Chemistry
- Nanomedicine Research Techniques
- Research Ethics for Beginning Health Scientists
- Receptor Pharmacology
- Advanced Pharmacokinetics and Toxicology

Total Number of Semester Hours: 33

- On average, students can complete this degree in two years.
- Minimum 3.0 GPA required



With more than 100 undergraduate and graduate programs, the Bouvé College of Health Sciences offers students extraordinary opportunities in three preeminent schools: Health Professions, Nursing, and Pharmacy. These schools are united across disciplines, preparing the next generation of highly skilled, versatile, and enterprising healthcare leaders, while advancing high-impact research to address the world's challenging issues. Spanning multiple campuses, Bouvé's interprofessional classroom approaches mirror today's collaborative reality in healthcare and research. Simulation exercises prepare students for real-life crises, while state-of-the-art laboratories foster high-impact research where even first-year students participate. Lectures and theories come alive and are honed through unrivaled co-ops and clinicals in Boston, the hub of health innovation, or through placements around the globe.

Northeastern University

Founded in 1898, Northeastern is a global research university and the recognized leader in experience-driven lifelong learning. Our world-renowned experiential approach empowers our students, faculty, alumni, and partners to create impact far beyond the confines of discipline, degree, and campus.

Our locations—in Boston; Charlotte, North Carolina; London; Portland, Maine; San Francisco; Seattle; Silicon Valley; Toronto; Vancouver; and the Massachusetts communities of Burlington and Nahant—are nodes in our growing global university system. Through this network, we expand opportunities for flexible, student-centered learning and collaborative, solutions-focused research.

Northeastern's comprehensive array of undergraduate and graduate programs—in a variety of on-campus and online formats—lead to degrees through the doctorate in nine colleges and schools. Among these, we offer more than 195 multidisciplinary majors and degrees designed to prepare students for purposeful lives and careers.