

Online Master of Science in Translational Pharmacology

Program Overview

For more information, please visit: www.pharmacy.osu.edu/online-programs

Program Highlights:

100% ONLINE: The **MS Translational Pharmacology** program is offered 100% online in an asynchronous format by The Ohio State University College of Medicine, Dept. of Biological Chemistry and Pharmacology in collaboration with the OSU Colleges of Pharmacy and Nursing.

MULTIDISCIPLINARY CURRICULUM: Designed for recent graduates and professionals interested in a career in clinical and translational pharmacology, specializing in clinical trial design or preclinical toxicology and safety pharmacology studies. The program has a *translational pharmacology* focus – bridging across “the discovery, development, regulation and use of pharmacologic agents to improve clinical outcome and inform optimal use of therapeutics in patients.” ([ASCPT: What is Translational Medicine](#)) (Please note the online MS Translational Pharmacology degree is not a lab-based program.)

SPECIALIZATIONS: Two interdisciplinary specializations are offered:

1. **Clinical Pharmacology and Clinical Trial Design**
2. **Toxicology and Safety Pharmacology**

WHO SHOULD APPLY? The MS Translational Pharmacology program is appropriate for healthcare practitioners as well as those having completed a B.S. or graduate degree in the pharmaceutical sciences or other bioscience-related field.

PREREQUISITES: Applicants not holding a bachelor’s degree or higher in a clinical, health science or bioscience field must have completed coursework in biology and chemistry; introductory courses in biochemistry and physiology are recommended but not required. Students who have not previously completed coursework in general pharmacology (graduate level) and pathophysiology (any level) will be required to complete these courses in the program.

CAREER OPPORTUNITIES: Graduates with this master’s degree may find rewarding clinical research career opportunities as clinical trials administrators, project managers, quality assurance specialists, and in pharmaceutical sales. In organizations conducting preclinical drug studies, graduates may find entry- and mid-level opportunities as study coordinators and directors, quality assurance specialists, laboratory animal resource managers, and project/program managers. Graduates already holding a doctorate degree may leverage this master’s degree to advance their careers as clinical investigators, research scientists, clinical pharmacologists, or medical affairs specialists in the pharmaceutical industry, contract research organizations, clinical research organizations, and academic medical centers.

Program of Study:

The MS Translational Pharmacology curriculum consists of 30-36 credits organized into three curricular areas:

1. **Clinical and translational pharmacology and toxicology** coursework
2. **Conduct of clinical trials or preclinical studies** coursework, including courses in biostatistics
3. **Culminating project:** development of clinical trial or preclinical study protocol and manuscript

As a final master’s degree assessment, all students must pass a final master’s comprehensive exam in their final semester. The MS Translational Pharmacology program does not require a thesis.

Contact:

For information please contact:

Ashley Sherf, Program Assistant, MS Translational Pharmacology, phone 614-247-9759; email sherf.3@osu.edu

Online Master of Science in Translational Pharmacology Curriculum

Coursework Requirements:

Core Courses (9-15 credits required)	
<ol style="list-style-type: none"> 1. BIOPHRM 5600: Introduction to General Pharmacology* 2. Pharmacy 5005: Fundamentals of Pathophysiology (preferred) or HTHRHSC 5500: Introduction to Pathophysiology** 3. Bioethics 6010: Biomedical Research Ethics 4. Pharmacy 7582: Organ System Toxicology 5. Pharmacy 7584: Applied Pharmacokinetics and Pharmacodynamics 	
Specialization Courses (additional 18 credits required)	
Clinical Pharmacology and Clinical Trial Design	Toxicology and Safety Pharmacology
<ol style="list-style-type: none"> 1. PUBHBIO 6210: Design and Analysis of Studies in Health Sciences I (<i>biostatistics</i>) 2. PUBHBIO 6211: Design and Analysis of Studies in Health Sciences II (<i>biostatistics</i>) 3. BIOPHRM/Nursing/Pharmacy 7560: Clinical Trials I: Design and Regulation 4. BIOPHRM/Nursing/Pharmacy 7561: Clinical Trials II: Management and Leadership 5. Pharmacy 5700: Introduction to Personalized Therapeutics and Pharmacogenomics 6. BIOPHRM 7550: Research Applications of Clinical Pharmacology 	<ol style="list-style-type: none"> 1. Pharmacy 7784: Data Analysis and Interpretation for Clinical and Preclinical Research (<i>biostatistics</i>) 2. Pharmacy 7562: Design and Management of Preclinical Studies <p><u>Toxicology Courses:</u></p> <ol style="list-style-type: none"> 3. Pharmacy 7583: Advanced Organ System Toxicology and Risk Assessment 4. Pharmacy 7588: Toxic Substances <p><u>Safety Pharmacology:</u></p> <ol style="list-style-type: none"> 5. Pharmacy 7580: Principles of Safety Pharmacology 6. Pharmacy 7586: Integrative In Vivo Modeling for Drug Development: Application for Safety and Clinical Pharmacology <p>The following course may be substituted for a toxicology or safety pharmacology course above (3-6), with advisor permission:</p> <ul style="list-style-type: none"> • BIOOHRM/CBG/Pharmacy 5700: Introduction to Personalized Therapeutics and Pharmacogenomics
Culminating Project (3 credits required)	
BIOPHRM 7598: Scientific Writing: Clinical Trial Protocol and Manuscript Development	Pharmacy 7597: Scientific Writing: Preclinical Study Protocol and Manuscript Development

*General pharmacology may be waived for clinicians (MD, DO, PharmD, NP, PA, etc.) and other students who have completed a graduate-level general pharmacology course (grade B or better).

**Pathophysiology may be waived for clinicians and other students who have completed any college-level pathophysiology course (graduate or undergraduate, grade B or better).

Department abbreviations:

- BIOPHRM = Biological Chemistry and Pharmacology
- CBG = Cancer Biology and Genetics
- HTHRHSC = Health and Rehabilitation Sciences
- PUBHBIO = Public Health Biostatistics