

Program Overview

The Molecular Medicine PhD Program starts in July with a 3-day orientation.

In your first year you will:

Take courses in human physiology and disease and tools for research as a foundation for molecular medicine research and discovery.

Complete 2-4 lab rotations that continue throughout the year, which will assist you in choosing your thesis lab and expose you to a wide variety of protocols and biological systems.

Attend short research presentations by program trainers.

Take the "Fundamentals of Molecular Medicine" core course that is divided into six modules:

- Cell Biology
- Metabolism
- Nucleic Acids, Gene Expression and Gene Regulation
- Mammalian Genetics, Genomics and Bioinformatics
- Host Defense: Infection and Immunity
- Introduction to Clinical and Translational Research

In your second year you will:

Take "Molecular Mechanisms of Human Disease" with an integrated team of clinical and basic scientists to discuss disease areas and learn how to write grant proposals.

Select your thesis advisor, clinical mentor, clinical experience and thesis committee.

Have the opportunity to take elective courses that complement your thesis research topic.

Work in your thesis lab.

Take your qualifying exam.

Subsequent years are largely devoted to research.

How to Apply

You can apply online through:
lerner.ccf.org/mmed/admissions

We have a diverse student body and welcome applications from underrepresented and disabled candidates. Students with disabilities who need assistance with applications or interviews are encouraged to contact the molecular medicine admissions team (molmedphd@ccf.org)

Cleveland Clinic does not discriminate in admission, employment, or administration of its programs or activities on the basis of age, gender, race, national origin, religion, creed, color, marital status, physical or mental disability, pregnancy, sexual orientation, gender identity or expression, genetic determination, ethnicity, ancestry, veteran status, or any other characteristic protected by federal, state or local law. In addition, Cleveland Clinic administers all programs and services without regard to disability, and provides reasonable accommodations for otherwise qualified disabled individuals.



Lerner Courtyard

LIVING IN CLEVELAND

Case Western Reserve University and Cleveland Clinic are located near each other in University Circle, five miles east of downtown Cleveland. University Circle is the cultural, medical and educational center not just of Cleveland, but also of Northeast Ohio. Many of Cleveland's finest museums and the world-renowned Cleveland Orchestra call University Circle home. Case Western Reserve University, University Hospitals and Cleveland Clinic have made Cleveland one of the major biomedical research centers in the country. Located on the shores of Lake Erie, Cleveland is one of the most affordable cities in the country.



Downtown Cleveland

E. 4th Street, Downtown Cleveland



Molecular Medicine PhD Program



Integrating Basic Science and Medical Knowledge

The Molecular Medicine PhD Program is a unique collaborative graduate training opportunity that integrates medical knowledge into graduate training. The goal of this program is to produce scientists trained in translational research (basic or applied research relevant to human health and disease) that can lead to new understanding of disease, clinical and diagnostic tools, medications and therapies. This program is consistent with National Institutes of Health Roadmap directives.

Graduates will be well prepared to collaborate with physicians to apply basic science discoveries to human health and to the causes and treatments of human disease. The mastery of competencies necessary to translate scientific observations from the research bench to clinical care is the focus of this PhD program.

The Molecular Medicine PhD Program has a diverse student body and welcomes applications from under-represented and disabled candidates.

Why is the Molecular Medicine PhD Program Unique?

- Focus on translational research in which students train in a collaborative environment that applies basic research for the understanding, prevention and treatment of human disease
- Coursework begins with the study of human physiology and disease and continues to integrate clinical correlates throughout the curriculum
- Exposure to clinical research literature, methods and statistics.
- The opportunity to work with both a research thesis advisor and a clinical mentor
- Students can choose rotation and thesis labs from a diverse array of faculty and research departments at Cleveland Clinic and Case Western Reserve University
- Coursework includes a clinical experience independent study developed with your clinical mentor to observe clinical settings and gain experience in the disease that is the subject of your thesis research
- Support (including tuition, stipend, core textbooks and laptop) is provided in part by an NIH T32 training grant and Lerner Research Institute

Program Snapshot



71%

Went on to postdoctoral positions



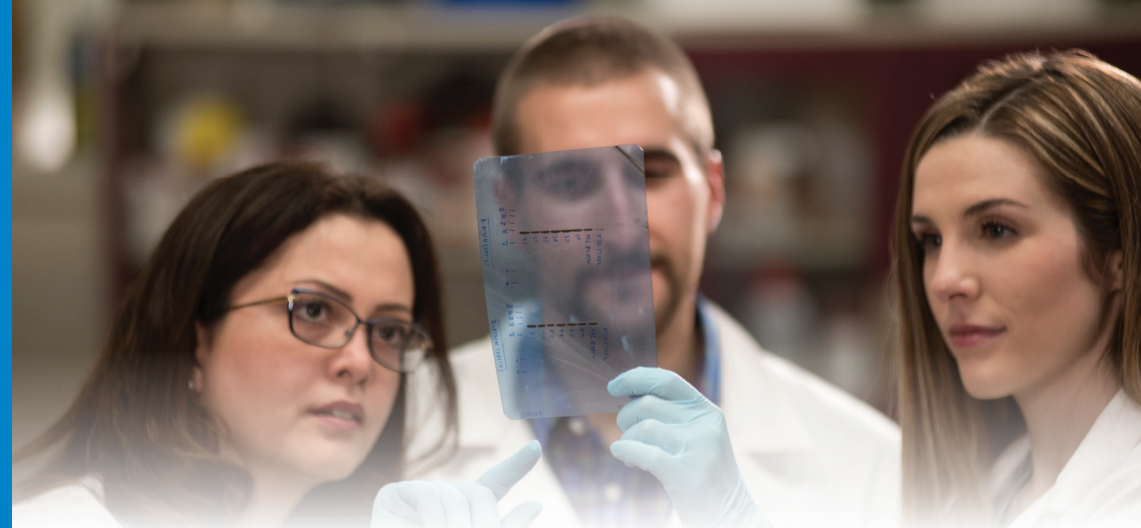
29%

Went on to teach, work as research coordinators, project scientists or in biotech/pharma, or pursue other advanced degrees



62%

Graduate in 5 years or less



What Organizations are involved in this program?

The Molecular Medicine PhD Program is offered through Cleveland Clinic Lerner College of Medicine (CCLCM) or Case Western Reserve University (CWRU), a formal partnership between Cleveland Clinic Lerner Research Institute and CWRU. The PhD trainers and clinical mentors are from the Cleveland Clinic, Case Western Reserve University and other area hospitals/health science centers. The program is administered and core curriculum classes are taught on the Cleveland Clinic campus, with advanced electives available on both Cleveland Clinic and CWRU campuses. Students may perform their thesis research at either campus with an approved trainer in the program.

Prerequisite Course Requirements

All applicants are required to complete the following undergraduate college courses, receiving a grade of C- or better, prior to starting the Molecular Medicine PhD Program:

- General Biology
- General Chemistry
- Organic Chemistry
- Biochemistry

It is also highly recommended, but not required, that students complete a course in Molecular and/or Cellular Biology.

Thesis Committee

A thesis committee will be appointed during the second summer with consultation between the thesis advisor and the program director. The thesis committee will be comprised of the thesis advisor, clinical mentor, and three other university faculty members.

Financial Support

- NIH T32 Grant
- Full Tuition
- Textbooks
- Generous Stipend
- Health Insurance
- Laptop

Student Organizations

Molecular Medicine PhD students can participate in the student programs at both CWRU and Cleveland Clinic Lerner Research Institute. The Lerner Research Institute's Graduate Student Association plans and provides academic and social functions for all graduate students working in the labs at Cleveland Clinic. New graduate students are encouraged to join this group to facilitate both social and professional networking in the Institute's research community.

U.S. News & World Report consistently names Cleveland Clinic as one of the nation's best hospitals in its annual "America's Best Hospitals" survey. The Lerner Research Institute's more than 175 faculty investigators have university appointments in the Department of Molecular Medicine of CCLCM. Disease-oriented research programs include cancer, inflammation, neurological and vision, and heart and vascular.

Lerner at a Glance

Lerner Researcher Institute is home to laboratory-based, translational and clinical research at Cleveland Clinic.

12 Departments

- Biomedical Engineering
- Cancer Biology
- Cardiovascular & Metabolic Sciences
- Genomic Medicine
- Infection Biology
- Immunotherapy & Precision
- Immuno-Oncology
- Inflammation & Immunity
- Neurosciences
- Ophthalmic Research
- Quantitative Health Sciences
- Translational Hematology & Oncology Research
- Clinical and Translational Research

28 Shared Research Cores, including:

- Biological Resources Unit
- Cell Culture
- Electron Microscopy
- Flow Cytometry
- Genomics
- Imaging
- Medical Devices
- 3D Printing
- Electronics
- Robotics



4,979

High-Impact Publications (2012-16)



700,000

Square Feet of Research Space



\$296M

Research Budget



2,632

Sponsored Research Activities



\$121M

Federal Funding



4,000

Active IRB-Approved Studies

NIH Awards (Dollars)

