

CELLULAR AND MOLECULAR ONCOLOGY (MS)

The Cellular and Molecular Oncology Master of Science (CMO MS) program will prepare master's level scientists to meet the changing landscape of cancer research. Our CMO MS graduate program focuses on training and providing both the academic and laboratory research tools to best prepare graduate students to meet the challenges within the field of oncology early in their careers.

Students will be trained for future careers in the pharmaceutical, biotech, or biomedical industry. Top researchers within Loyola's Department of Cancer Biology will mentor CMO MS students toward the successful completion of their thesis research, directly involving students in the lab from day one. The profile of CMO MS students will be as diverse as the subject matter that they seek to study, many may seek to prepare themselves for an industry-related career, others will become top candidates for PhD programs, and some will be competitive candidates for healthcare professional schools.

A commonality linking Loyola's CMO MS graduate students lies in their fundamental passion for effecting change in cancer-research.

Related Programs

Master's

- Cell and Molecular Physiology (MS) (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/cell-molecular-physiology-ms/>)

Doctoral

- Cell and Molecular Physiology (PhD) (<https://catalog.luc.edu/graduate-professional/graduate-school/health-sciences/biomedical-sciences/cell-molecular-physiology-phd/>)

Combined

- Cell and Molecular Physiology (MD/PhD) (<https://catalog.luc.edu/graduate-professional/dual-degree-programs/cell-molecular-physiology-md-phd/>)

Curriculum

The Master of Science in Cellular and Molecular Oncology requires 30 credit hours and a thesis.

Coursework Requirements

Code	Title	Hours
BMSC 402	Statistical Methods for Biomedical Science	3
BMSC 405	Ethics in Biomedical Sciences	1
BMSC 412	Cell Biology	4
BMSC 416	Methods Biomedical Science	1
CMO 503	Special Topics in Oncology	1
BMB 590	Molecular Biology of Oncogenesis	3
<i>One Elective</i>		3
BMB 417	Molecular Biology	
BMB 490	Special Topics in Molecular Biology (Epigenetics and Stem Cells)	
IDIM 400	Infections and Immunology	

ICB 403	Graduate Histology	
MIIM 471	Molecular Microbial Genetics	
MIIM 502	Special Topics	
PHAR 408	Molecular Basis of Disease and Therapeutics	
PHAR 409	Principles of Pharmacology	
CMO 499	Research	2-7
CMO 502	Seminar	0
CMO 595	Thesis Supervision	0
Total Hours		30

Research and Thesis

Hands-on laboratory research will begin in the first semester of study. Students will complete two lab rotations to help them identify their research advisor and lab. Upon completion of the first semester, a student's research advisor will be assigned and subsequent lab time will be spent designing, conducting, and analyzing independent research projects under the supervision of the student's advisor. Upon completion of the CMO MS program, graduates can expect they will be highly knowledgeable in the methodology and skill necessary for success in future research endeavors.

Graduate & Professional Standards and Regulations

Students in graduate and professional programs can find their Academic Policies in Graduate and Professional Academic Standards and Regulations (<https://catalog.luc.edu/academic-standards-regulations/graduate-professional/>) under their school. Any additional University Policies supersede school policies.

Learning Outcomes

Upon completion of this program, students will be able to:

- Deploy a number of concepts, techniques and resources, within the specific topic of their thesis project, to carry out a largely independent research project in experimental oncology.
- Analyze, interpret and comprehend experimental data in a critical fashion.
- Engage in self-directed problem solving. Employ critical thinking and evaluate risks in original scientific projects.
- Use problem-solving experiences to diagnose and troubleshoot new failures to fix experimental faults in a rapid and consistent fashion.
- Being familiar with scholarly publications and the major open questions within an area of investigation.
- Present, verbally and in written form, their scientific results, relating the results to the existing body of knowledge.