

REGENERATIVE MEDICINE AND ENTREPRENEURSHIP, MS

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More Information: <https://case.edu/medicine/nrcm/training-education/masters-program-rgme>
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Degree: Master of Science (MS)

Field of Study: Regenerative Medicine and Entrepreneurship

Program Overview

The RGME is the first two-year master's level program in Ohio focused on Regenerative Medicine and Entrepreneurship. Students enrolled in the RGME program will have access to cutting-edge clinical and research facilities along with small biotechnology companies within the network of the National Center for Regenerative Medicine (NCRM). Program faculty and guest lecturers are leaders in the field of regenerative medicine and cell-based therapy development from a mix of nationally ranked, medical research powerhouses including Case Western Reserve University, Cleveland Clinic, University Hospitals, MetroHealth Medical Center, Louis Stokes Cleveland VA Medical Center and the Ohio State University.

This unique, interdisciplinary program will provide a rigorous educational pathway targeting individuals seeking the advanced skills and training required to excel in the unique workforce necessary to support the exponential growth and application of the field of regenerative medicine. The Master's program in RGME will train individuals to work in academic, commercial, and clinical settings to support cellular manufacturing, biotechnology innovation, legal and compliance, financial analyst and venture capital, and business development activities taking advantage of our strengths across the disciplines of regenerative medicine as a whole.

Entrepreneurship Sets Us Apart

The RGME program is a 30-credit, two-year program for recent graduates to hone their problem-solving skill set. Students will be trained to solve modern regenerative medicine, commercial, and compliance problems, and to see those problems in the context of both an individual company and the greater marketplace. Students complete business and management courses as well as advanced regenerative medicine courses to become ready to tackle complex business problems with creative

solutions. Emotional Intelligence, Teamwork, Communication, Creativity, and Cultural Awareness are all fundamentals of the RGME program.

Career Opportunities

Every RGME student will be guided in a course of study by a program mentor to ensure the successful completion of the program and to support individual career development goals. Internships and hands-on learning are a very important part of a student's program experience. The RGME program offers many internship options including Athersys, BioEnterprise, Ohio Stem Cell Treatment Center, and CavoGene LifeSciences. Case Western Reserve University has an entire department devoted to finding internships across the country for students. In addition, students may choose independent study in the laboratory of one of the many world-class research members of the NCRM.

Program graduates will qualify for a wide range of jobs, from clinical research to biotech companies to Wall Street. The market is in great demand for highly trained professionals to fill the knowledge gap in all these areas.

Graduate Policies

For graduate policies and procedures, please review the School of Graduate Studies section of the General Bulletin.

Program Requirements

Our full-time students complete the 30-credit hour master's degree in two years while learning from internationally renowned faculty across the University. The core courses provide the foundational elements including stem-cell biology, biomaterial engineering, medical product development, federal regulations, bioethics, and how to take a discovery to market. In addition, students select an independent study in either hands-on laboratory research or an industry internship. Various science and business development electives, paired with seminars and career development opportunities, round out your tailored experience. In lieu of a thesis, students create public presentations and written scientific projects throughout the program.

Required Core Courses

Code	Title	Hours
RGME 535	Foundations in Regenerative Medicine	3
RGME 545	Stem Product Biology, Bench to Bedside Development and Therapeutic Translation	3
BIOL 491	Contemporary Biology and Biotechnology for Innovation I	3
BIOL 492	Contemporary Biology and Biotechnology for Innovation II	3
GENE 467	Commercialization and Intellectual Property Management	3
Independent Study		
Choose one of the following:		3
RGME 560	Regenerative Medicine Independent Study, Research Project	
	or RGME 561: Regenerative Medicine Independent Study, Internship	

Total Hours 18

Electives

Science Program Electives

Code	Title	Hours
Choose courses totaling six credits from the following:		6
CLBY 435	Seminar in Molecular Biology/Microbiology	
CLBY 450	Cells and Pathogens	
CLBY 525	Neurodegenerative Diseases of the Brain and the Eye: Molecular Basis of the Brain-Eye Connection	
CRSP 412	Communication in Clinical Research - Grant Writing	
EBME 406	Polymers in Medicine	
EBME 451	Molecular and Cellular Physiology	
PATH 416	Fundamental Immunology	
PHRM 409	Principles of Pharmacology	
PHRM 511	Pharmacology Seminar Series	
PHRM 520	The Cellular and Molecular Hallmarks of Cancer	
PHRM 525	Topics in Cell and Molecular Pharmacology	

Business Development Program Electives

Code	Title	Hours
Choose courses totaling six credits from the following:		6
IIME 450A		
LAWS 4302	Patent Law	
LAWS 4312	Patent Preparation and Prosecution 2	
LAWS 5341	Commercialization and Intellectual Property Management	
LAWS 5366	Venture Finance & Transactions	

* Please visit website for a full list of the Business Development Program Electives.

Total Credit Hours Required for Degree: 30

Sample Plan of Study

First Year

Fall		Hours
RGME 535	Foundations in Regenerative Medicine	3
BIOL 491	Contemporary Biology and Biotechnology for Innovation I	3
Science or Business Development Elective(s)		1-6
Seminars		
Hours		7-12

Spring

RGME 545	Stem Product Biology, Bench to Bedside Development and Therapeutic Translation	3
BIOL 492	Contemporary Biology and Biotechnology for Innovation II	3
Science or Business Development Elective(s)		1-6
Hours		7-12

Second Year

Fall

RGME 560 or RGME 565	Regenerative Medicine Independent Study, Research Project or Regenerative Medicine Independent Study, Internship	3
GENE 467	Commercialization and Intellectual Property Management	3
Science or Business Development Elective(s)		1-6
Seminars		

Hours 7-12

Spring

Science or Business Development Elective(s)		1-6
Hours		1-6
Total Hours		22-42