

BIOMEDICAL RESEARCH, M.S. (THESIS)

Program Description

The Biomedical Sciences and Clinical and Translational Sciences departments of the Joan C. Edwards School of Medicine offer the following degrees: Doctor of Philosophy (Ph.D.), M.D./Ph.D., and Master of Science (M.S.), both thesis and non-thesis.

The primary goal of the Biomedical Research (BMR) program is to use biomedical and translational research approaches to help reduce the numerous health disparities and improve the health of the population in West Virginia and central Appalachia. To do this, students will take an interdisciplinary approach with defined interests and special in-depth training in one of the following research areas of emphasis: Cardiovascular Disease; Cell Biology; Obesity and Related Diseases; Neurobiology and Addiction; and Toxicology and Environmental Health. These areas are designed to be flexible and research oriented in order to develop the interests, capabilities and potential of all students pursuing careers in academic, government, or industrial biomedical sciences.

In addition, the BMR program offers a non-thesis Master of Science degree with a medical sciences area of emphasis to improve the science foundation of students seeking admission into doctoral programs in medicine or other health-related professions. Admission into the BMR M.S. Medical Sciences program does not guarantee admission into medical school. Additionally, a research component to this area of emphasis is available, but not required. Students choosing the research component may work up to 19 hours per week while earning a minimum of \$10/hour. Students are expected to stay in good academic standing.

Also offered is the combined M.D./Ph.D. Students in this program blend the discovery of new knowledge with clinical medicine at the intersection of science and medicine. M.D./Ph.D. Most graduates work as physician-scientists at medical schools, conducting disease-related research and applying the results to the treatment of patients. They have a unique perspective on both the basic science and clinical science behind disease. Further general information is available at the Association of American Medical Colleges website ([aamc.org](http://www.aamc.org) (<http://www.aamc.org>)).

Admission Requirements

Applicants must meet the admission requirements of both Marshall University Graduate Admissions - marshall.edu/admissions/graduate/ (<http://marshall.edu/admissions/graduate/>) - and the Biomedical Research program of the Marshall University Joan C. Edwards School of Medicine - <https://jcesom.marshall.edu/research> (<https://jcesom.marshall.edu/research/>). Applicants are directed to apply through the Biomedical Sciences Centralized Application System (BioMedCAS, <https://biomedcas.liaisoncas.org/>). Completion of a secondary application once admitted is also required; instructions will be sent from the department to the applicant. Interested persons should visit <https://jcesom.marshall.edu/research> (<https://jcesom.marshall.edu/research/>), e-mail mubiomed@marshall.edu and/or call 304-696-3365.

Biomedical Research M.S. (Thesis and Non-Thesis) Applicants

Minimum Admission Requirements

- A baccalaureate degree from a regionally accredited college or university
- Successfully completed, with a grade of C or better, one year of general biology, physics, general chemistry, and organic chemistry, all with associated laboratories. A semester of biochemistry or molecular biology is also required.
- A recommended minimum Grade Point Average (GPA) of 3.0
- A recommended minimum GPA of 3.0 in combined science and math courses
- Official transcript(s) from undergraduate degree granting institution(s). Transcripts for post-baccalaureate or graduate coursework may be required at the discretion of the program.
- Program materials: three recommendations, program online form, written statement addressing educational and career goals, CV/ resume

The GRE is not required; however, GRE scores can be submitted to strengthen your application. Applications are accepted on a rolling basis and are reviewed until the class is filled. Applications are only considered once we have received all required documentation.

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Conditional Admission

The Biomedical Research M.S. (Thesis and Non-Thesis) program may admit applicants conditionally, for one term, pending receipt of final, official bachelor's degree transcript with degree awarded.

Duration of Degree Program

Students are expected to complete the degree within two years. This includes the summer between years one and two for M.S. (thesis) students.

Entry Term

B.M.R. M.S. (thesis) students may matriculate in July (summer III term) or in August (fall term). B.M.R. M.S. (non-thesis) students with an area of emphasis in Medical Sciences must matriculate in the fall term only.

Program Requirements

Biomedical Research, M.S. (Thesis - Cardiovascular Disease, Cell Biology; Neurobiology and Addiction; Obesity and Related Diseases; Toxicology and Environmental Health)

Degree Requirements

All students are required to meet the general requirements of the university for receipt of a master's degree. A minimum of 32 credit hours is required for the thesis degree with no more than six hours of thesis (BMR 681 Thesis) credited toward the 32 credit hour requirement. Each student will specialize in one of the five areas of emphasis as defined in the program description. If the non-thesis master's degree is pursued, a minimum of 36 credit hours is required.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.

Advisory Committee for M.S. (Thesis) Students

The advisory committee should be formed no later than the end of the first year of graduate education. As soon as the committee has been identified, a Thesis Committee Formation form is completed and submitted to the Director of Graduate Studies.

The advisory committee will be selected by the student and research advisor, with approval from the Director of Graduate Studies required. The committee will be composed of at least three faculty members with appropriate expertise; one of the members may be from another institution. The student's research advisor will act as the chairperson of the committee.

In addition, after 12 hours of coursework has been completed, the student must submit an M.S. Plan of Study form to the college.

Plan of Study

All students are required to successfully complete the following core curriculum:

Code	Title	Credit Hours
Core Curriculum		
BMR 601	Intro DNA, RNA & Proteins	3
BMR 602	Intro Cells and Metabolism	3
BMR 603	Regulation Cell Function	2
BMR 604	Cell Basis of Disease	1
BMR 617	BMR Statistics Technique	3
BMR 644	Research Conduct	1
BMR 660	Communication Bio Sci I	1
or BMR 661	Communication Bio Sci II	
BMR 680	Seminar (minimum of 4 hrs.)	1
BMR 785	Intro to Research	4
Total Credit Hours		19

In addition, the student must successfully complete other courses required by his/her area of emphasis and advisory committee and pass a written and/or oral comprehensive examination.