

BIOMEDICAL RESEARCH, PH.D.

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 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 (<http://www.aamc.org>).

Biomedical Research, Ph.D.

The doctorate is a research or performance degree and does not depend solely on the accumulation of credit hours. The degree requirements are admission to candidacy, and successful completion and defense of a dissertation. The degree signifies that the holder has the competence to function independently at the highest professional level.

Admission Requirements

Applicants must meet the admission requirements of both Marshall University Graduate Admissions as outlined on their website - www.marshall.edu/graduate/admissions/how-to-apply-for-admission (<http://www.marshall.edu/graduate/admissions/how-to-apply-for-admission/>) - and the Biomedical Research program of the Marshall University Joan C. Edwards School of Medicine. Interested persons should visit <https://jcesom.marshall.edu/research> ([https://](https://jcesom.marshall.edu/research/)

jcesom.marshall.edu/research/), e-mail mubiomed@marshall.edu and/or call 304-696-3365.

Ph.D. Applicants

Minimum Admission Requirements

- A baccalaureate degree from a regionally accredited college or university
- Successful completion, with a grade of C or better, of one year each of general biology, physics, general chemistry, and organic chemistry, all with associated laboratories. A semester of biochemistry or molecular biology with associated laboratory 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
- Graduate Record Examination (GRE) General Test scores
- Official transcript from degree granting institution/s; other transcripts may be required
- Departmental materials: three recommendations, program online form, written statement addressing educational and career goals, CV/resume

Priority Deadline - March 1 for Best Chance of Admission

Applications are accepted on a rolling basis and are reviewed until the class is filled. Applications will be considered after the priority deadline until June 30, if openings are available. International applicants must meet the international application deadline of March 15. The completed application, application fee, official transcript(s), and official GRE scores should be received in the Graduate Admissions Office by March 1. MCAT scores will be considered for admission on a case-by-case basis. For the application to be complete, the program online form, written statement addressing educational and career goals, and three recommendations should be received in the Office of Research and Graduate Education by March 1.

Duration of Degree Program

Doctoral degree students are expected to complete the requirements within five years. Students who possess an M.S. degree in Biomedical Research or the equivalent when admitted into the doctoral degree program generally require three to four years to complete the Doctor of Philosophy degree.

Entry Term

BMR Ph.D. students will matriculate in July (summer III term). The first week will be devoted to orientation and Preparation for Graduate Academics (PGA) Boot Camp. This allows students to learn more about research opportunities, get to know their cohort and current students, acclimate to a new environment, and get a head start on their research rotations.

Program Requirements

Before graduating, students are required to write and publish three peer-reviewed manuscripts, two of which must be as first author.

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

Plan of Study

To qualify for the Doctor of Philosophy degree, the student must pass (C or better or CR) the following courses:

Code	Title	Credit Hours
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 660/661	Communication Bio Sci I	1
BMR 680	Seminar (minimum of 6 hrs.)	1
BMR 785	Intro to Research	1-6
BMR 882	Research	1-15
Total Credit Hours		17-36

In addition, the student must successfully complete other courses required by his/her area of emphasis and advisory committee. All courses will be defined in the student's Ph.D. Course of Study form. The student must also pass a written and oral exam prior to becoming a Ph.D. candidate. These exams are set by the advisory committee and are outlined below under Admission to Candidacy.