MEDICAL RESEARCH (M.S.)

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Program Director: George S. Brush, Ph.D.

The Master of Science in Medical Research (M.S.M.D.R) program provides a broadly based, multi-disciplinary, human biology-oriented master's level education and requires basic and/or clinical biomedical research training. Admission to the program is available to individuals who have a professional medical (M.D., D.O.), dental (D.D.S.), pharmaceutical (Pharm.D.), or equivalent degree in human health care and who are actively participating in Wayne State University School of Medicine affiliated post-graduate clinical medicine training, or are affiliated faculty members. The M.S.M.D.R program enables individuals to obtain research credentials for entry into an academic medical, dental, or pharmacologic research career, or for individuals already in an academic medical, dental, or pharmacologic career to change their research emphasis.

An additional MSMDR program has been developed for students enrolled in the M.D. program at Wayne State University School of Medicine. The master's portion of this joint M.S.-M.D. program is designed to provide a multi-disciplinary, human biology-oriented education with basic and/or clinical research training. The program will be of value to medical students who wish to include research in their future careers, and will prepare them to understand how concepts, therapies, and technologies are translated from the laboratory to the clinic. Inquiries should be sent to the Program Director.

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School (http://bulletins.wayne.edu/graduate/general-information/admission/). Applications must be submitted online which allows submission of the applicant's information, statement of purpose, and the three required references. One of the references must be from the prospective thesis advisor who must be a WSU School of Medicine Graduate Faculty member. For application review, a professional applicant must provide the M.S.M.D.R Program transcripts with proof of a degree from a professional degree-granting institution, either medical (M.D., D.O.), dental (D.D.S.), pharmaceutical (Pharm.D.) or equivalent. Copies of transcripts may be submitted for application review; however, the Graduate School will require submission of an official transcript showing degree awarded prior to enrollment. International medical graduates must provide a valid certificate from the Educational Commission for Foreign Medical Graduates. A medical school applicant must be in good standing in the second or third year of the M.D. program at Wayne State University School of Medicine. Students who have completed the Medical Student Summer Research Fellowship are encouraged to apply.

Program Requirements

The Master of Science in Medical Research is offered only as a Plan A master's program requiring completion of thirty credits, including an eight-credit thesis.

Courses

For students with professional degrees, a minimum of two courses, each one reflecting a different discipline/subject area (as reflected in the different two or three-letter course prefixes) must be chosen from the following:

Code	Title	Credits
BMB 7010	General Biochemistry Lecture	4
CB 7210	Fundamentals of Cancer Biology	3
FPH 7015	Biostatistics I	3
FPH 7210	Research Methods for Public Health Professionals	3
IM 7010	Fundamentals of Immunology	2
IM 7030	Molecular Biology of Viruses	2
IM 7520	Molecular Mechanisms of Bacterial Pathogenesis	2
MGG 7010	Molecular Biology and Genetics	4
MGG 7091	Scientific Communication	2
PHC 6500	Drugs and the Addictive Process	3
PHC 7010	Pharmacology Lecture	4
PHC 7410	Principles of Toxicology	3
PSL 7010	Basic Graduate Physiology Lecture I	4
PSL 7030	Basic Graduate Physiology Lecture II	4
PYC 7010	Molecular Neuropsychopharmacology	3

The following courses are required:

Code	Title	Credits
GS 0900	Essential Research Practices: Responsible Conduct of Research	0
MGG 7091	Scientific Communication	2

In addition, a minimum of two courses must be chosen, upon consultation with the thesis advisor and program director, that complement the research activities.

Elective Courses

Elective credits sufficient to complete the degree requirements must be approved by written consent of the Program Director.

The Plan of Work is developed by the student in consultation with the prospective thesis advisor and filed with the Program Director. The deadline is specified by the Graduate School and enforced by the Registrar. With the Program Director's approval the student is advanced to candidacy status.

Thesis Requirement: Completion of MDR 8999, Master's Thesis Research and Direction, Cr. 8; prereq: M.S. in Medical Research candidacy status, approved thesis outline, consent of advisor, and authorization by M.S.M.D.R Program Director.

Thesis Advisor: The advisor is selected with the advice and consent of the Program Director. The Thesis Committee, selected with the advice and consent of the Thesis advisor, must be composed of three graduate faculty members, including the thesis advisor who also serves as the student's academic advisor for the remainder of his/her program. The candidate must prepare an outline of the thesis, obtain signatures of approval from all Committee members, and file with Program Director for approval.

Thesis and Defense: The thesis document must be provided to the Thesis Committee for review prior to the oral defense. The Committee evaluates the thesis document and following the subsequent oral defense determines the MDR 8999 final grade.

MDR 7100 Clinical Research Design Cr. 2
Design and implementation of authorized clinical research projects, with exposure to such topics as drug discovery, study design, obtaining FDA approval, subject recruitment and retention, data management, translational and biotechnological aspects, GCRC, and bioinformatics; preparation for establishment of career in clinical and translational research. Offered Fall, Winter.
Restriction(s): Enrollment limited to students in the MD & PHD program; enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine.

MDR 7110 Clinical Field Experience Cr. 2
Complexity of the disease process from initial presentation of patient in a clinic, to understanding the pathophysiological basis of the disease, to diagnosis, treatment, and patient management; application of clinical and laboratory research training and current technology. Topics may include: diabetes, sickle cell anemia, asthma, seizures, hypertension, congestive heart failure, chronic myeloid leukemia, genetics of cancer, stroke, lupus. Offered Fall, Winter.
Restriction(s): Enrollment limited to students in the MD & PHD program; enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine.
Repeatable for 2 Credits

MDR 8999 Master's Thesis Research and Direction Cr. 1-8
Offered Every Term.
Restriction(s): Enrollment limited to students with a class of Candidate Masters; enrollment is limited to students with a major in Medical Research; enrollment is limited to Graduate level students; enrollment limited to students in a MS in Medical Research degree.
Repeatable for 8 Credits