BIOCHEMISTRY AND MOLECULAR BIOLOGY (BMB) – POSTDOCTORAL MASTERS

- John R. Hawse, IV, Ph.D., *Program Director*
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Biochemistry and Molecular Biology Track:

- Biochemistry and Structural Biology
- Cell Biology and Genetics
- Cancer Biology Sub-tracks

Application

Candidates must complete a Postdoctoral Master's Degree Application form. This form is available on the MCGSBS Master's Programs intranet site. Supporting documents include a program fee agreement form, transcripts from previous colleges and two letters of recommendation - one preferred from your direct supervisor/manager.

Eligibility

Applicants must be employed at Mayo Clinic. The employment appointment, as documented at the time of application, must be greater in length than the time required for completion of all requirements of the program. Eligible roles include: Mayo Clinic physician, scientist, fellow or resident with a doctoral degree in a discipline applicable to clinical research or medical student who plans to have a research career (except for CTS). Visiting research fellows are eligible. However, visiting clinicians, research trainees and research collaborators are not eligible.

Time Requirement

Applicants must have adequate protected time to complete course and research requirements within designated program length. Applications with inadequate protected time to complete the program will**not**be accepted. Time to completion can vary by program and Mayo Clinic role from two to five years. All scholars must be in their program a minimum of 1 year in order to meet the MCGSBS residency requirement. Scholars must complete all program requirements within 5 years.

Students must have dedicated time for their program commitments and abide by course attendance requirements as defined in course syllabi. Students must be appropriately engaged in their program and demonstrate continued progress towards graduation.

Registration Requirement

At least 75% of the coursework for the Master's degree must be completed in MCGSBS. It is expected that a minimum of one year will be devoted to research.

Minimum Credit Requirements

Students must complete a minimum of 45 credits, which includes a maximum of 16 Research credits. (See Requirements tab within each track for specific course requirements.)

Transfer Credits

A total of 9 didactic credits may be transferred into the program. For more details, see the Credit Conversion, Transfer, Waiver, and Substitution Policy on the MCGSBS intranet site.

This Master's degree track in Biochemistry and Molecular Biology is open only to residents and research fellows in the Mayo School of Graduate Medical Education. It offers a flexible course for Master's study that can be designed to emphasize one of three areas of specialty: Biochemistry and Structural Biology (BSB), Cell Biology and Genetics (CBG) or Cancer Biology (CB).

Course Requirements

The curriculum for the Basic Science Master's degree consists of **45 credits**, which can include a maximum of 16 Research credits.

Code	Title	Hours
MGS Course Requirements [1]		
MGS 6100	Master's Thesis Proposal	3
MGS 6840	Master's Research (4 cr/qtr - 4 qtrs required)	16
Biomedical Science Requirements		
MGS 6000	Responsible Conduct of Research	1
BMB 5100	Chemical Principles of Biopolymer Systems	2
BMB 5150	Molecular Cell Biology	2
Advanced Coursework		
Select 12 credits [2]		17
Journal Clubs		
Select 4 credits [3]		4
Total Hours		**45**

1. It is expected that a minimum of one year will be devoted to research.
2. Any courses approved for graduate credit. Courses to be selected in consultation with your project mentor.
3. Any graduate school approved Journal Clubs. Courses to be selected in consultation with your project mentor.

Written Qualifying Exam

The Master's candidate must pass the BMB Written Qualifying Exam to complete the degree requirements. Students take the written qualifying exam once they have completed the core courses and have considered whether to take the others featured in the exam. The exam is a one-day exam held at the beginning of July and consists of demonstrating critical evaluation and understanding of two published primary research papers relevant to the broad field of Biochemistry and Molecular Biology as covered in the core courses BMB 5100 and BMB 5150. Three sets of papers reflecting the three areas of emphasis of the track: BSB, CBG and CB, will be made available to the students three days before the exam. On the day of the exam, students are required to answer a series of specific questions associated with any two of the six papers. The questions will cover foundation of knowledge in addition to synthesis of concepts. The exam is prepared and graded by the faculty and an overall grade of 70% is required for successful completion of the exam.

Suggested Sequence

This is a suggested sequence based on a summer term start. Individual course plans may vary depending on true start date, program, employment/ personal commitments, and research interests. Be sure to confirm you have

met your requirements using your degree planning tool. Course offerings may vary slightly. Current course offerings are posted in the course catalog.

Code	Title	Hours
First Year - Summer Term		
MGS 6000	Responsible Conduct of Research	1

Code	Title	Hours
First Year - Fall Term		
BMB 5100	Chemical Principles of Biopolymer Systems	2
MGS 5031	Fundamental Principles in Genome Dynamics, Biochemistry, and Cellular Biology	3

Code	Title	Hours
First Year - Winter Term		
BMB 5150	Molecular Cell Biology	2

Code	Title	Hours
First Year - Spring Term		

Code	Title	Hours
Second Year - Summer Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Second Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Second Year - Winter Term		

Code	Title	Hours
Second Year - Spring Term		

Code	Title	Hours
Third Year - Summer Term		

Code	Title	Hours
Third Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Third Year - Winter Term		

Code	Title	Hours
Third Year - Spring Term		

Code	Title	Hours
Fourth Year - Summer Term		

Code	Title	Hours
Fourth Year - Fall Term		
BMB 6500	Biochemistry and Molecular Biology Journal Club	1

Code	Title	Hours
Fourth Year - Winter Term		

Code	Title	Hours
Fourth Year - Spring Term		

Code	Title	Hours
Fifth Year - Summer Term		

Code	Title	Hours
Fifth Year - Fall Term		

Code	Title	Hours
Fifth Year - Winter Term		

Code	Title	Hours
Fifth Year - Spring Term		