

# BIOCHEMISTRY AND MOLECULAR BIOLOGY, SCM

## The Master of Science (Sc.M.) Program Overview

The Department of Biochemistry and Molecular Biology offers two different master's degrees: The Master of Health Science (MHS) and the Master of Science (ScM). For the ScM degree, MHS students transfer to the ScM program and continue in a second year after completion of the first-year coursework. In this second year, you do laboratory research in one of the BMB primary appointment faculty members. The active labs with available space and appropriate projects for ScM students will vary from year to year, but can include Drs. Bailey, Culotta, Drummond-Barbosa, Jordan, Kavran, Leung, Matunis, McMacken, Wan, Wang, Wright, and Zirkin, as well as joint BMB appointees with training privileges, Marsha Wills-Karp, Photini Sinnis, Sabra Klein, Sean Prigge, Ann Hamacher-Brady, and Alan Meeker. The ScM degree work culminates in the writing of an ScM thesis (literature review and research report). Students start their research in June after the MHS coursework year, and then complete their research and thesis in the next spring-summer (~12-13 months). Tuition is reduced for the ScM year as compared to what students pay for the MHS coursework year. This typically is ~25% of the MHS year tuition. Questions about the ScM program can be directed to, Dr. Phil Jordan (director of the ScM program) or the Academic Program Coordinator. In a given year, typically ~10-25% of the MHS students are successful in obtaining a position for ScM research.

## Program Requirements

Course location and modality is found on the JHSPH website (<https://www.jhsph.edu/courses/>).

The majority of ScM students who start their research in June will finish their degree work in June or July of the next year. This is because it takes 12-13 months to accumulate enough data for the ScM thesis, and then to write the thesis and have it approved by your adviser and thesis reader. Be advised that it is unusual, although not impossible, to get the ScM degree completed in time for May graduation (see details on deadlines below).

If you are completing your degree in summer or fall of 2020, this will be covered by the deadlines defined for Academic Year 2020-2021

## Academic Year 2020-21

### Due Dates for Summer Conferral (August 28, 2020)

#### JUNE 12, 2020

- All academic requirements for the degree (except for submission of the thesis) have been fulfilled

#### JUNE 19, 2020

- Appointment of Thesis Readers for has been submitted to the Office of Records and Registration

#### AUGUST 28, 2020

- Thesis Acceptance Letters have been submitted to the Office of Records and Registration
- The Office of Records and Registration has received approval of submitted electronic copy of dissertation has received from the Sheridan Library

### Due Dates for Fall Conferral (December 31, 2020)

#### OCTOBER 16, 2020

- All academic requirements for the degree (except for submission of the thesis) have been fulfilled

#### OCTOBER 23, 2020

- Appointment of Thesis Readers for has been submitted to the Office of Records and Registration

#### DECEMBER 18, 2020

- Thesis Acceptance Letters have been submitted to the Office of Records and Registration
- The Office of Records and Registration has received approval of submitted electronic copy of dissertation has received from the Sheridan Library

### Due Dates for Spring Conferral (May 27, 2021)

#### FEBRUARY 12, 2021

- All academic requirements for the degree (except for submission of the thesis) have been fulfilled

#### FEBRUARY 19, 2021

- Appointment of Thesis Readers for has been submitted to the Office of Records and Registration

#### APRIL 30, 2021

- Thesis Acceptance Letters have been submitted to the Office of Records and Registration
- The Office of Records and Registration has received approval of submitted electronic copy of dissertation has received from the Sheridan Library

Course location and modality is found on the JHSPH website (<https://www.jhsph.edu/courses/>).

## Presentation of Work at Departmental Retreat and Other Venues

ScM students are *required to present their work at the spring BMB departmental research retreat*. ScM students are also encouraged to present their work at other venues, including the departmental colloquium, multi-lab group meetings, and regional/national scientific meetings.

## Appointment of Thesis Readers

The ScM thesis must be read and approved by a committee of two readers. **Be advised that the appointment of readers for a ScM thesis is more formal than that of the MHS thesis**, with a form that must be submitted to Records and Registration by a specific deadline.

The following form must be submitted to Records and Registration: <https://my.jhsph.edu/Offices/StudentAffairs/RecordsRegistration/MastersCandidateInformation/Documents/ScM%20-%20MBe%20Appointment%20of%20Thesis%20Readers%20Form.pdf> (<https://my.jhsph.edu/Offices/StudentAffairs/RecordsRegistration/MastersCandidateInformation/%20Documents/ScM%20-%20MBe%20Appointment%20of%20Thesis%20Readers%20Form.pdf>)

Or go to [my.jhsph.edu](http://my.jhsph.edu) (<http://my.jhsph.edu>):

- At the main page, select the *Offices* tab,
- pull down to *Student Affairs*

- On the main Student Affairs page, select *Records and Registration* (under the heading "Offices")
- Scroll the bottom of this next page to "Other Areas" and select "*Masters Candidate Information*"
- Look for the document, "**ScM - MBe Appointment of Thesis Readers Form**"

Approximate deadlines for submission for different completion dates and degree conferral are below. *We encourage all ScM students regardless of anticipated degree completion to submit the Appointment of Thesis Readers Form in mid-February.*

Event	Deadline
For spring degree conferral (and marching in Convocation ceremonies)	Mid-February
For US citizens and permanent residents only - For submission by June 30, to have thesis submission covered by 4th term tuition	Last day of 4th term
For summer degree conferral	Mid-June <sup>1</sup>
For fall degree conferral	Mid-October <sup>1</sup>

<sup>1</sup> The deadlines for Academic year 2019-2020 (for summer and fall degree conferral) will be released in spring of 2020.

**The exact date changes from year to year; be sure to check the Records and Registration site on my.jhsph.edu (<http://my.jhsph.edu>) for the dates.**

The URL for deadlines for Academic Year 2019-2020 will be made available here (**copy and paste this address**): <https://my.jhsph.edu/Offices/StudentAffairs/RecordsRegistration/MastersCandidateInformation/Documents/Forms/AllItems.aspx> (<https://my.jhsph.edu/Offices/StudentAffairs/RecordsRegistration/MastersCandidateInformation/%20Documents/Forms/AllItems.aspx>)

The ScM thesis reader committee consists of two members, one of which is the student's advisor. The second member **must** be a full-time (professor, scientist, lecturer, instructor of any rank), emeriti, or adjunct faculty from any JHSPH or JHU department, including the student's sponsoring department. However, only one adjunct may serve on the committee of thesis readers. Visiting faculty may not serve on the committee.

## Completion and Submission of the ScM Thesis

**Be advised that submission of the ScM thesis is a more structured and formalized process than is submission of the MHS thesis.**

You must remain registered until your final thesis is submitted and until all your committee members' letters are on file in Records and Registration. Students also must be registered for at least *two consecutive terms* leading up to submission of the thesis and completion of the ScM degree.

**Non-US citizens/permanent residents:** You must ensure that your student visa will be current throughout your completion of the degree. If you will not be completing the program in 9 months and your visa is expiring, please bring the appropriate visa documentation to **Michele Yost's office in Rm. W8501**. It is crucial to be in contact with the Office of International Services (OIS; <http://ois.jhu.edu/>) to stay on top of any impending deadlines, regarding your visa, potential application for Optional Practical

Training (OPT), etc. It is essential to keep your supervisor and BMB administration informed.

## Thesis Preparation and Submission Process

- The thesis must be formatted according to University specifications.
  - Basic information - <http://guides.library.jhu.edu/etd> (<http://guides.library.jhu.edu/etd/>)
  - Formatting the thesis - <http://guides.library.jhu.edu/etd/formatting/>
  - It will also be helpful to look at past ScM theses. The BMB McCollum Reading Room (W8017) has copies of past students' theses. Your advisor may have copies from past students as well.
- ScM students work closely with their advisor to write the ScM thesis. The ScM advisor will read drafts, and ultimately, the ScM advisor must approve the version that is distributed to the other thesis reader.
- Once the thesis is acceptable to the advisor and approved by the advisor for distribution, the student then provides a copy of the ScM thesis to the other thesis reader.
  - It is recommended that you give your readers this near-final, advisor-approved version of your thesis *approximately three weeks before the date you need to submit the final copy*. This gives the readers plenty of time to read your thesis, provide critique, and for you to revise your thesis in response to their feedback as necessary.
- The student must incorporate recommended thesis revisions from the thesis readers.
- The final thesis, incorporating the thesis readers' revisions, is then submitted by the student electronically to JHU Sheridan libraries through the ETD process (ETD = Electronic Thesis and Dissertation - <http://guides.library.jhu.edu/etd>) (<http://guides.library.jhu.edu/etd/>).
- The final thesis must be submitted and verified by the indicated deadlines for degree conferral. **Be advised that sometimes verification can take a couple days, so you do not want to wait right up to the very last day.**
- The two members of the thesis reader committee must submit thesis acceptance letters to Records and Registration by the indicated deadlines for degree conferral.

Approximate deadlines for submission + verification of final thesis and acceptance letters from advisor and thesis reader:

Event	Deadline
For spring degree conferral (and marching in Convocation ceremonies)	Third Friday in April
For US citizens and permanent residents only - To have thesis submission covered by 4th term tuition	Last working day in June
For summer degree conferral (requires paying summer term tuition)	Mid-August <sup>1</sup>
For fall degree conferral (requires paying 1st term, and if necessary, 2nd term tuition)	Mid-December <sup>1</sup>

<sup>1</sup> The deadlines for Academic year 2019-2020 (for summer and fall degree conferral) will be released in spring of 2019. To find this, go to [my.jhsph.edu](http://my.jhsph.edu) (<http://my.jhsph.edu>):

- At the main page, select the *Offices* tab,
- Pull down to *Student Affairs*
- On the main Student Affairs page, select *Records and Registration* (under the heading "Offices")
- Scroll the bottom of this next page to "Other Areas" and select "*Masters Candidate Information*"
- Look for the appropriate Due Dates document.

**The exact deadlines change from year to year; be sure to check the Records and Registration site on [my.jhsph.edu](http://my.jhsph.edu) (<http://my.jhsph.edu>) for the dates.**

The URL for the document with deadlines for Academic Year 2019-2020 is: <https://www.jhsph.edu/academics/calendar/2019-2020.html>

## Program Policies

Masters students must register for a minimum 16 credits each term. These credits include didactic courses, special studies, thesis research, seminars, etc. While a minimum of 64 credits are required by the School for a Master's degree, due to this Departmental requirement, BMB ScM students will exceed that number at the time of graduation. Course requirements and suggestions for electives are summarized in the next section.

In core courses, Master's students must receive a 'C' or higher. A student who earns a grade below that threshold in a course listed as a core requirement must, at the next opportunity, make a second attempt to complete the core course by repeating the same course or by completing another course that has been approved by the ScM Director. A grade below the threshold on the second attempt may be grounds for dismissal and must be reported to the School's Committee on Academic Standards. To remain in good academic standing, Masters students must maintain a minimum grade point average of 2.75. If a student's GPA falls below the requirement, the student will be placed on academic probation. School policy states that a Master's student cannot graduate with a GPA lower than 2.75.

## Educational Objectives:

Key educational objectives for ScM students include:

- 1) develop knowledge through coursework focused around biochemistry, molecular and cellular biology, reproductive biology, and the biology of disease and public health
- 2) develop skills for the critical evaluation of scientific literature
- 3) develop literature-based analytical and research skills
- 4) develop the ability to communicate scientific information orally and in writing. Additional educational objectives for ScM students include development of laboratory and analytical skills required to effectively conduct laboratory research