

Handbook

Master's Graduate Program in Biochemistry and Biophysics

Brandeis University
August 2024

The purpose of this handbook is to help students navigate the various requirements and expectations of the Master's Graduate Program in Biochemistry and Biophysics. It describes the requirements for the M.S. degree and contains general information about the procedures to be followed in satisfying these requirements.

The Biochemistry & Biophysics Graduate Program is an interdepartmental graduate program with faculty drawn from the Biochemistry, Biology, Chemistry, and Physics departments. Progress of students in the program is monitored by the Biochemistry & Biophysics Graduate Program Advisory Committee and the Program Director of Graduate Studies. An up-to-date list of training faculty associated with this program is posted on the [Biochemistry & Biophysics Graduate program webpage](#).

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Degree requirements -- General Information

Please be aware that the [University Bulletin](#) is a legal document governing all academic regulations. If anything in this handbook contradicts the Bulletin, the Bulletin will take precedence. In addition, please be aware that in the event of a public health emergency or other major event, the procedures listed in this handbook may change.

The M.S. program in Biochemistry and Biophysics is a two-year program designed to accommodate students with previous academic majors in a wide range of fields, including biology, biochemistry, physical chemistry, engineering, and physics.

To obtain the Master's degree, students must satisfy both the general requirements of the graduate school and the specific requirements of the Biochemistry & Biophysics Graduate Program. Both sets of requirements are summarized in the [Brandeis Bulletin](#).

All Biochemistry and Biophysics Master's students must complete and pass four graduate level courses with a grade of B- or better. Students will rotate through two Brandeis University labs in their first semester, after which point they will join a lab in which to carry out research towards a Master's Thesis. In addition, students are required to attend the Division of Science Responsible Conduct of Scientific Research (RCR) Mini-course, which is coordinated by the Office of Research Administration.

The student is responsible for fulfilling each requirement before the relevant deadline. At the discretion of the faculty, students failing to complete requirements on time may be required to leave the Program.

Students in the Biochemistry & Biophysics Graduate Program are expected to work full-time towards the degree throughout the entire calendar year. Students should be aware that scientific research is a demanding occupation and that researchers often find it necessary to do work on nights, weekends, and holidays in addition to that during "normal working hours." This precludes students undertaking outside employment or outside academic activities that would require a significant amount of time.

Requirements for the M.S. degree

1. Courses

The required program of study consists of four one-semester courses (BCHM 101a, BCHM 103b, BCHM 104b, and one elective advanced-level course from the Division of Science, approved in advance by the Director of Graduate Study, passed with a grade of B- or higher. All students are required to take BCHM 101a in the first semester, and BCHM 103b and BCHM 104b in the second semester. To fulfill the course requirement for the Master's degree, the student must complete each course with a letter grade of B- or higher. To make any subsequent modifications to the Required Program of Study, the student must obtain, in advance, written approval from the Director of Graduate Study.

Starting in their second semester, students will join a research lab full-time and enroll in BCBP297, Master's Lab Research, with their research advisor for the three remaining semesters and the intervening summer term. To earn the M.S. degree, students must also enroll in BCBP299 in their fourth semester and write and submit a master's thesis deemed satisfactory by a committee of faculty appointed by the Director of Graduate Study. In addition, students are expected to attend the Division of Science Responsible Conduct of Scientific Research (RCR) Mini-course, which does not count towards the four courses required.

The following is a typical program of study:

Year 1, Fall Semester

BCHM 101a Advanced Biochemistry: Enzyme Mechanism

BCBP 296a Masters Lab Rotation

Year 1, Spring Semester

BCHM 103b Advanced Biochemistry: Cellular Information Transfer Mechanisms

BCHM 104b Physical Chemistry of Macromolecules

BCBP 297b Masters Lab Research II

*If students do not find a lab in the Fall, they would enroll in BCBP 296b Master's Lab Rotation II

Summer, between years

BCBP 297a Masters Lab Research I

Year 2, Fall Semester

Elective (if taking this semester)

BCBP 297a Masters Lab Research I

Year 2, Spring Semester

Elective (if taking this semester)

BCBP 297b Masters Lab Research II

BCBP 299a Master's Thesis

In addition to passing the formal course requirements, all students should endeavor to keep abreast of current developments in Biochemistry & Biophysics and related fields. To accomplish this, students are urged to attend the following seminars weekly during the academic year:

1) The Biochemistry & Biophysics Friday Pizza Talks – **attendance is highly encouraged**

2) The research talks sponsored by the students from the MSM//BCBP programs - **attendance is mandatory**

3) One or more departmental colloquia or specialty journal clubs according to the student's interest

2. Rotations and acceptance by thesis advisor

During the first semester, students are required to register for the Master's lab rotations (BCBP 296a). Every student is required to complete two rotations of 8-10 weeks each in two different laboratories during the first semester. The choice of laboratory rotations is made jointly by the student, the Director of Graduate Study, and the faculty member in whose lab the rotation is to take place. Students may choose advisors from any department within the Division of Science, they just have to be listed as program Training Faculty. The complete list of faculty research

interests can be found here on the BCBP Grad Program website: [Graduate Training Faculty | Graduate Program in Biochemistry & Biophysics | Department of Biochemistry | Brandeis University](#). This site also contains a list of Training Faculty. If you want to do a rotation or select an advisor that is not on this list, it is possible with DGS approval.

During orientation week, students have the option of attending a three-night faculty bazaar where faculty members will introduce their work. After, students will approach faculty of interest and discuss the possibility of rotating in their lab.

It is the responsibility of students to contact faculty members and find their rotations labs. The first lab rotation will begin on **September 3rd, 2024**. To complete a rotation, the student must turn in a satisfactory written report. Written reports are due the morning of the day that the next rotation period begins.

Rotation Schedule:

Rotation 1: 9/3/24-11/1/24

Report due: 11/4/24

Rotation 2: 11/4/24-1/10/25

Report due 1/13/25

After the first semester, research for the Master's Thesis is carried out under the supervision of a faculty advisor. Students must choose a research laboratory immediately upon completion of the second laboratory rotation. Starting in their second semester, students will join a research lab full-time and enroll in BCBP 297, Master's Lab Research, with their research advisor for the three remaining semesters and the intervening summer term.

3. Thesis

To qualify for the M.S., a student must submit a thesis reporting a substantial piece of original research carried out under the supervision of a research advisor or advisors. During the final semester in the program (typically the fourth semester), the student will register for BCHM 299a (Master's Thesis) and BCHM 297 (Master's Lab Research) while finishing research work and writing the MS thesis.

The thesis must be approved by the Thesis Advisor and a committee of two additional faculty, assigned by the Director of Graduate Study. All students must give a 15 minute oral presentation of their thesis topic, presented on the same date as that spring's senior honors talks. A written copy of your thesis will be due to your examining committee no later than one week in advance of the talks.

Once accepted by the faculty readers, the student must submit the [Certification of Master's Thesis Acceptance](#) to the graduate school and publish the thesis through ProQuest by the posted deadlines. A copy of this form and of your final thesis should be given to the Graduate Affairs Office - scigradoffice@brandeis.edu. Deadlines and guidelines for submission and acceptance of the Master's thesis are set by the graduate school and the registrar each semester. Please see the graduate school's [Master's Thesis Guide](#) for more information on submitting and publishing the thesis.

Students have not fulfilled the program and thesis requirements until the final version of the thesis, including any changes required by the advisor and the Graduate School, is submitted to the Graduate School office through ProQuest. For theses that include copyrighted material (for example, text already published in journal articles), copyright permission must be obtained from each journal and submitted to the Graduate School office with the dissertation. There is usually no need to get permission from co-authors, since it is usually the journal, not the authors, which owns the copyright.

4. Residence

The residence requirement is two years.

Progress

Students' progress will be reviewed by the Director of Graduate Study at the end of each semester, particularly after the end of their first year. Students may be asked to leave the program at the end of a semester if their progress is found to be unsatisfactory, at the discretion of the Advisory Committee. Satisfactory progress includes receiving grades of B- or higher in all courses, successfully joining a lab after the student's first semester, and demonstrating adequate research progress thereafter as determined by the Advisory Committee.

Information for first-year students

Prior to arriving on campus, first year students will be emailed information about orientation activities, registration, and class schedules. Upon arrival on campus, first-year students should stop by the Biochemistry Department. **It is mandatory that you attend the Orientation meeting scheduled for your program.** After arriving on campus, first-year students should stop by the Biochemistry Department Office/Division of Science Graduate Affairs Office (Ros/Kos 3-RK02) to check your mailbox (located in the hallway outside the Biochemistry office). Please bring your student ID, so that Natasha Baker can give you the appropriate card access. You will be required to **take online safety training** before being granted building access.

Workday

Workday is where you register for courses and also allows you to access information about your own student record. For example, you can [view your academic progress](#) or [check which required teaching training sessions you have completed](#). If you work an hourly job, you will also enter your hours there. There are many [job aids that explain how to complete tasks in Workday](#).

Transition from M.S. to Ph.D. Program:

Students who have earned an M.S. at another institution will be admitted as normal first-year students. Students in the Brandeis Biochemistry & Biophysics M.S. program who apply to and are accepted into our Biochemistry & Biophysics Ph.D. program may be transitioned into the

program and considered as third year Ph.D. students. Any Masters student who wants to transition into our PhD program will talk to their advisor, and then the Director of Graduate Study, in the Fall of their second year. A committee will make a decision on their admission as early as possible to expedite the transition to the Ph.D. These students must complete the same requirements as students who enter directly as Ph.D. students, with the following alterations to their timeline:

Matriculation date:

M.S. students will enter the Ph.D. program during the summer after their M.S. year and matriculate as Ph.D. students that summer, typically with a start date of June or July 1st. The start of stipend payments will coincide with their matriculation date. Any exceptions to this timeline must be discussed with and approved by the graduate committee.

Courses:

Courses taken during the M.S. year may count towards the Ph.D. course requirement, if the Director of Graduate Study approves the courses. M.S. Students who are strong candidates for the Ph.D. program are encouraged to take BCHM102 in the fall of their second year at Brandeis. Students should plan to take BCBP 200b in the Spring of their second year. These students are expected to complete the remaining classes as soon as possible after transitioning to the Ph.D. program.

Rotations and Selection of Dissertation Lab:

In most cases, M.S. students who transition to the Ph.D. program are expected to continue their research in the same lab in which their Master's Thesis was completed. Exceptions to this will be considered on a case-by-case basis. Should a lab change occur, the possibility of additional lab rotations before changing labs will be discussed on a case-by-case basis.

Master's Thesis:

For completion of the MS degree, students will submit a Master's thesis and give a talk together with the other BS/MS students at the beginning of May and then immediately transition into the PhD program.

Outside and Inside Examinations:

Students transitioning to the PhD will write and orally defend their inside proposition by July 1st and must complete their outside proposition by December 1st.

Resources for graduate students and ways to get help

At many points during your graduate career you will probably have questions you'd like to ask someone, great ideas you'd like to share, or concerns you'd like someone to address. Please know that there are many people here on campus to answer those questions, help, and support you. Before we go into specifics of who to ask for help, please know that the majority of people on campus are "responsible reporters." This means that they are obligated to share any information that has been disclosed to them regarding discrimination, harassment, or sexual misconduct with

the Office of Equal Opportunity. If you are hoping to have a confidential conversation about one of these topics, you will find a list of confidential resources later in this section.

Most issues can be best addressed by those closely associated with your graduate program or with the Division of Science staff and faculty so we encourage you to seek assistance from this group first. We recognize that sometimes there may be a particular person that you are more comfortable speaking with or that one faculty member may be holding multiple roles/positions, but we suggest that you reach out to for assistance in the following general order (see schematic at the bottom as well):

- **Your PI/Advisor:** Your first stop should be your PI/advisor, if you have chosen one by this point. Your advisor will have the most intimate knowledge of your research/program progress and career goals, and is here to help train and guide you. PIs usually have regular meetings with their students and this is a good time to bring up concerns. If you are in a program with lab rotations and you are still rotating, you should feel comfortable talking to your rotation PI.
- **A member of your committee (once you have one, if your program has advisory committees):** You are always welcome to reach out to any faculty member on your committee. While not tied to your progress as closely as your PI/advisor, they will be familiar with your progress in your program and will have sufficient background knowledge on your project and your goals to provide personalized support. Committee members will be especially good resources if you have concerns about some aspect of your project design or results. Also keep in mind also that while annual meetings with your committee may be required, you can call additional meetings at any time.
- **DGS (Director of Graduate Study, or chair of your grad program):** This faculty member oversees your grad program as a whole, and is here to support all students in the program. They will be extremely knowledgeable in the program's requirements and are also tuned in to the current GSAS and University policies. Early in your grad career when you have not yet chosen an advisor, it is the DGS's job to support you. Later on, the DGS may be a good person to contact if a few students from different labs have shared concerns. The specific faculty member who fills this role may change from year-to-year, so check with your program administrator or check your program website for the current DGS first.
- **Your program's Department Chair:** This faculty member oversees the department that your grad program falls under and is a step above your DGS. If you have concerns that aren't necessarily specific to your grad program but are relevant to the department as a whole, the chair may have good insight. Chairs are good to talk to if concerns are shared with other populations in the department such as staff, postdocs, or undergraduates. The specific faculty member who fills this role may change from year-to-year, so check with your program administrator or check your program website

for the current Chair.

- **The Head of the Division of Science:** This faculty member oversees the entire Division of Science, and works to support all of the departments and graduate programs within the sciences. The head of the Division of Science has frequent meetings with individual program and department chairs, as well as with leaders across the University, so they will be knowledgeable about current Division and University practices. They are here to support and advocate for the entire science community. Talk to them if people from different graduate programs or departments have a shared concern or to raise. In particular, concerns about research integrity should be brought to the attention of the Head of the Division of Science. As with the DGS, the faculty member in this role can change from time-to-time. In academic year 2024-2025, the chair of the Division of Science is Susan Birren

In parallel to these program-level and Division-level faculty resources, there are non-faculty resources within the Division who you can go to for help. The following are good places to go to for help:

- **The Division of Science Grad Affairs Office:** This office is the administrative home for most of the graduate programs within the Division of Science(Computer Science and Psychology are the exceptions). The staff here work closely with grad students and faculty to administratively oversee those graduate programs and to monitor student progress. The staff in this office know your program's faculty, are well-versed in your program's requirements and policies, and are up-to-date with the other sources of support on-campus. If you are unsure about who to talk to first, the DivSci Grad Affairs Office is often a good place to start as they can help you decide who to approach and how to have that conversation. Within this office, either Anna Miamis, Anne Lazerson, or Jane Theriault is the primary contact for your graduate program. You should also feel free to contact Maryanna Aldrich, who oversees this group.

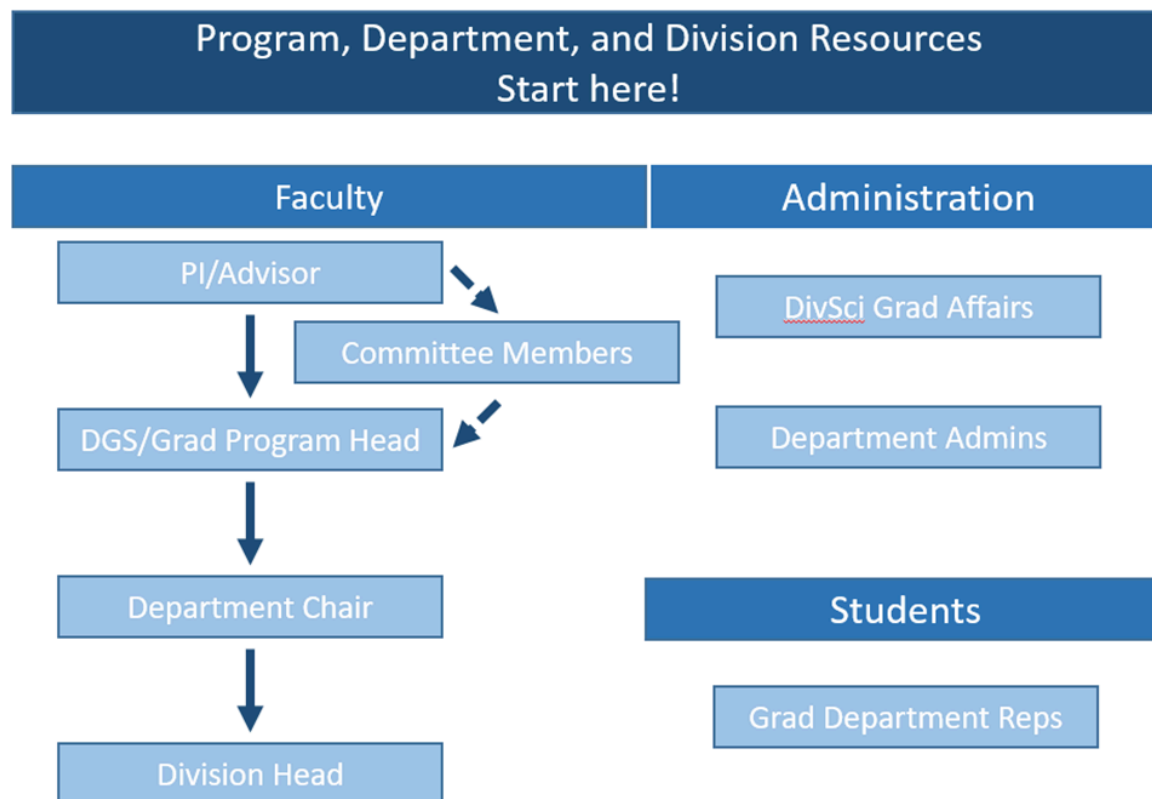
- **Your Department Administration:** These staff work in your department's office and are here to help their entire department community. These staff may be a bit less familiar with your graduate program requirements, but they know your department's faculty and any non-grad-program details about your department well. If you are in the Computer Science or Psychology graduate program, your department office serves the role described above for the DivSci Grad Affairs Office.

- **The DivSci Pre-Award Office:** If you are applying for grants or fellowships, please loop these staff in. They may be able to provide guidance and help you navigate the submission process.

- **Your program's Grad Department Representatives (GDRs):** These graduate students were elected to represent the student body in your graduate program. One of the roles of the GDR is to bring concerns from students as a whole to the program

faculty or to GSAS, so if you have a concern that you are comfortable discussing with your GDR it's a good idea to let them know. They cannot bring these concerns to the faculty to advocate for all students if they don't know about them, and there may be other students with similar concerns. Your GDRs may hold a student "town hall" once a semester or year to bring up issues, and this is a good forum to discuss some topics that may be weighing on your mind.

Below is a flow chart demonstrating the general hierarchy of sources of support:



Outside of the general hierarchy of Division of Science places to go to for help, there are various other entities on campus here to support students. These resources on campus are dedicated to supporting graduate students:

- **The Graduate School of Arts and Sciences (GSAS)**: GSAS oversees all graduate programs within the school of Arts & Sciences at Brandeis and is invested in the success of all graduate students in these programs. If you have a topic that you'd rather discuss with someone outside of the Division or want a non-DivSci perspective on, the staff in this office are a great resource for graduate students. GSAS is also a good resource if you are uncomfortable discussing a topic with any of the resources mentioned so far or if you have not made sufficient progress in those discussions. Depending on the topic that you have raised with faculty or administrative staff, they may have already contacted GSAS for advice/assistance on how to help or to handle

the next steps. GSAS and your program/department faculty or the Head of the Division of Science frequently work together to support students, resolve problems, and enact positive changes. Please visit their [staff directory](#) to explore the areas GSAS can help with. If you are in a research group with limited funding, GSAS provides conference and research awards for [PhD students](#) and [Master's students](#). They also strongly encourage students to [apply for external fellowships and grants](#).

- **[The Office of Graduate Affairs](#)**: This office is a home and source of support for all graduate students at Brandeis, including those studying at the Heller School, the Rabb School, or the International Business School. Graduate Student Affairs provides students with information and events about graduate life at Brandeis and community resources.
- **[The Graduate Student Association \(GSA\)](#)**: Supported by The Office of Graduate Affairs, the GSA is an independent student body that represents all graduate students and provides a platform for graduate students to raise issues and concerns and build community. If you have a concern about an issue affecting graduate students that extends past your program, department, and the Division of Science, the GSA is a good group to talk to. To connect with them, visit their website to see the current year's grad student executive committee.
- **[GSAS Professional Development](#)**: Here, you can set up appointments with the Professional Development team and can also access resources to help you with many aspects of the professional development and job search process. In addition, there are many profiles of GSAS alumni with insights into their career journeys.

There are some offices on campus that specialize in specific topics and who will almost always be the best resource for those topics:

- **[The Office of Research Administration \(ORA\)](#)**: ORA, which reports to the [Vice Provost for Research](#), can help with issues related to research integrity and compliance. If you want to discuss the possibility of research misconduct, you may wish to report things there directly.
- **[The International Students and Scholars Office \(ISSO\)](#)**: ISSO supports all of Brandeis' international students and scholars. This office determines visa eligibility and prepares and issues visa documents. If you ever have any questions about your Visa or any of the associated regulations (e.g. travel, CPT, OPT), you should reach out to your ISSO advisor. They can advise students on rights and responsibilities and provide guidance regarding issues that may impact your legal status. Their website also has a collection of useful information for international students.
- **[Student Accessibility Support](#)**: If you are a student with a disability and in need of academic or non-academic accommodations, this office can support you and help you navigate this process. The definition of a person with a disability is broad, and many students who do not think of themselves as students with disabilities may

qualify for support under the law. Even if you are not sure if you will qualify, you are encouraged to reach out to SAS.

As mentioned at the start of this section, there are some topics that responsible reporters on campus cannot keep confidential, and those are issues of discrimination, harassment, or sexual misconduct. The office on campus that addresses these issues is the [**Office of Equal Opportunity \(OEO\)**](#). OEO provides information regarding support resources, information about taking action (internal resolution processes and criminal action), inquiries and investigations into concerns, processes to address grievances, and training for the Brandeis community. Please visit their website for contact information and steps (and an online form) to file a report. You are welcome to contact a resource listed above for support or advice about these topics, but they will be obligated to share the issue with OEO.

If you would like to have a *confidential* conversation with someone on campus, the following are our on-campus confidential resources:

- [**The Brandeis Counseling Center \(BCC\)**](#)
- [**The Brandeis Health Center**](#)
- [**The Prevention, Advocacy, and Resource Center \(PARC\)**](#)
- [**The University Ombuds**](#)
- [**The Chaplains in The Center for Spiritual Life**](#)