



## **GRADUATE PROGRAM IN THERAPEUTIC SCIENCES GUIDELINES**

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## I. Overview

The Therapeutic Sciences Graduate Program (TSGP) offers advanced training appropriate for academic and research careers in the fields of biology and medical sciences with a focus on determining disease mechanisms and drug actions, and developing novel therapies. The program has two degrees: a PhD in Therapeutic Sciences; and a Masters degree (Masters of Science (ScM) or Arts (AM)) in Biotechnology. The program also includes MD/PhD students. The PhD and Masters students share many activities and experiences and function as one community, TSGP.

To fulfill the requirements of the PhD, students must earn an A or B in required and elective courses, pass a qualifying examination according to established schedules, produce at least one first-authored, peer-reviewed publication, complete and write and publicly defend a doctoral dissertation, and participate in the undergraduate and/or graduate teaching programs of the Division of Biology and Medicine.

To fulfill the requirements of the AM and ScM degrees, students must complete 8 credits at the 1000/2000 level with a grade of A or B. ScM students also must perform research with a research mentor, participate in thesis module workshops, prepare a written thesis, and publicly defend the thesis.

## II. Governance and Faculty

TSGP is jointly housed in the Department of Pathology and Laboratory Medicine (PLM) and the Office of Graduate Studies (OGS) within the Division of Biology and Medicine. It is administered by the PhD and Masters Program Directors (“directors of graduate studies” or “DGSs”), a standing Steering Committee for Masters, a standing Graduate Program Committee for PhD, an Admissions Committee, and an *ad hoc* Thesis Committee for each graduate student. A Graduate Program Coordinator handles organizational and administrative issues such as managing events, keeping track of records, expense reimbursement, appointment assignments, website updates, interfacing with the graduate school and registrar, etc.

The Steering Committee is a guiding body involved in policy and resource decisions for the Biotechnology Masters Program. This committee consists of the Senior Associate Dean of Biology, the Senior Associate Dean of Biology for Curricular Affairs, the Associate Dean for Graduate Studies, the Associate Dean of Masters and Professional Programs, the Director of Academic Assessment and Evaluation, the Chair of PLM, the PhD and Masters Program DGSs, and three TSGP senior faculty trainers.

The Graduate Program Committee is composed of the DGSs of the PhD and Masters programs, the Principal Investigators of any PhD training grants, the Director for Student Welfare and one to three other faculty, with broad representation, including at least one junior faculty trainer. The DGSs are faculty members appointed by the Associate Dean of Graduate Studies, or their designate, for a term of three years, renewable. The Graduate Program Committee is responsible for decisions related to PhD resource allocations and policy, admissions recommendations to the Office of Graduate Studies and the Graduate School, graduate curriculum decisions, assignment of students to training grants, and designation of faculty as trainers or members within the Graduate Program. Input from Graduate Program faculty and students also is solicited by the Graduate Program Committee.

The Admissions Committees oversee recruitment and admission of students to the PhD and Masters programs. The committee consists of the DGSs and three to five (senior, mid-level, and junior) faculty. The committee will review all applications and determine the applicants who will be interviewed. In consultation with the Graduate Program Committee, the Admissions Committee will admit the predetermined number of PhD and Masters

students. For the PhD program, admissions decisions will involve interviews of applicants by the Admissions Committee and by faculty trainers. Feedback from current students who host and interact with the invited applicants will also be considered in the admissions process.

The Faculty of the Graduate Program is divided, with respect to graduate training, into two categories, “members” and “trainers”. Members have an active research interest in the areas encompassed by the Program. They participate in the activities of the Program by involvement in an upper-level course, or by attending program seminars or journal clubs, or by serving on *ad hoc* committees. They may serve as thesis advisors for ScM students. Trainers are those faculty who may serve as thesis advisors for PhD students. Trainers must conduct an active research program and must be prepared to commit the time and effort required to supervise the student’s research. They are also expected to have the financial resources to support a PhD student and to support the student’s research project. When accepting a graduate student into the lab, trainers must make a commitment to provide funding for stipend, tuition, health insurance and fees until the student’s thesis is completed. Trainers also must commit to providing timely feedback to the student and the Directors of Graduate Studies about the student’s progress. In cases where progress is not satisfactory, this feedback must be documented and shared with the student and Directors of Graduate Studies in writing. As described below, the Program has a mechanism for feedback twice a year once the student has a Thesis Committee. The Program also requires that all students and mentors work together to agree on a Mentor/Mentee Compact at the end of their first year, once the student has committed to a thesis lab.

Potential trainers are proposed to the Graduate Program Committee by one of its members. The Committee makes its decision based on quality of the research, mentoring experience, funding status and a general fit of the research area with the focus of TSGP. After approval of the prospective trainer, a Director of Graduate Studies sends them a letter describing trainer responsibilities. The trainer list is reviewed by the Committee at least every three years, or more often as needed. New trainers must provide to the Graduate Program Committee (via the Program Directors) a summary of the academic and research guidance they provided to their student(s) at the end of their first year as a trainer for assessment of the training environment by the Graduate Program Committee.

### **III. Requirements for the PhD in Therapeutic Sciences**

The University requires 24 course credits for graduation at the PhD level, of which a maximum of 8 can be transferred from other institutions with permission of the Directors of Graduate Studies. Courses must be taken for a grade rather than on a satisfactory/no credit (S/NC) basis and students must earn a B or better. Students in the MD/PhD program can receive some credit for satisfactory completion of the first two years of the Program in Medicine. At Brown, each one-semester course is worth one credit, and the normal full-time load is 4 credits per semester; students must register for a total of 4 credits each semester to be considered full-time. However, graduate independent study (i.e., research, BIOL 2980) can be taken for up to 4 course credits per semester, depending on the number of other courses taken in the same semester.

## A. PhD Coursework

- BIOL 2250 Survey of Modern Therapeutics (Year 1, Semester 1); required
- BIOL 2170 Molecular Pharmacology & Physiology (Year 1, Semester 2); required
- BIOL 2980 Graduate Independent Study, research (All years and semesters); required
- BIOL 2025 Foundations in Statistics for Biology & Medicine (Year 1 or 2, Semester 2); required
- 3 Therapeutics-related Elective Courses (taken any year; approved by the Directors of Graduate Studies), examples of courses are below, but other courses within the Life Sciences can be considered. A complete and current listing of courses is available through [Courses@Brown](mailto:Courses@Brown).
  1. BIOL 2865 Toxicology
  2. BIOL 2860 Molecular Mechanisms of Disease
  3. BIOL 2410 Current Topics in Signal Transduction
  4. BIOL 2300 Biomolecular Interactions: Health, Disease and Drug Design
  5. BIOL 2260 Physiological Pharmacology
  6. BIOL 2167 *In Vitro* Models of Disease
  7. BIOL 2145 Molecular Targets of Drug Discovery
  8. BIOL 2135 Pharmacokinetics and Drug Design
  9. BIOL 2110 Drug and Gene Delivery
  10. BIOL 2010 Quantitative Approaches to Biology
  11. BIOL 1295 Fundamentals of Cancer Immunotherapy
  12. BIOL 1290 Cancer Biology
  13. BIOL 1070 Biotechnology and Global Health

Students who have obtained a graduate degree prior to joining the program can discuss transfer of course credit for elective courses with the Directors of Graduate Study. If the DGSs deem the course(s) transferable, then it is the student's responsibility to fill out the appropriate paperwork to have the course(s) officially transferred and applied to their official Brown transcript.

## B. PhD Research

- **Lab Rotations:** Three rotations are required in the first year and follow the same rotation schedule as other PhD Programs in the Division of Biology and Medicine. Students should register for BIOL 2980 Independent Study and should ask their DGS which section to choose. Each student will need to match with a Thesis Advisor (in one of the rotation labs) for their thesis research by the end of the spring semester. Arrangements for the fall rotation are begun in the summer before the start of fall classes, with the assistance of the DGSs. The other two rotations are arranged in the fall, with the help of scheduled meetings of interested faculty trainers with the entering students.

The timeline of rotations for the 2025-2026 Academic Year is as follows:

1. Rotation 1 : 9/22-11/21
2. Rotation 2: 12/1-12/19; 1/5-2/13
3. Rotation 3: 2/16-4/24

If a student would like to rotate with a trainer in Biomedical Engineering, the rotation schedule will need to be adjusted accordingly to end by April 15<sup>th</sup>. Arrangements in this case should be discussed with the TSGP Directors of Graduate Studies. For each rotation, it is essential that a Rotation Agreement between the trainee and mentor is signed and returned to the TSGP Program Coordinator during the first week that the rotation begins. A final report and grade for the rotation (Rotation Evaluation) should be submitted to the

Program Coordinator on the day that the rotation ends. The relevant forms can be found on the TSGP website.

- **Thesis Committee:** Once in a thesis lab, the student will develop a project and select a Thesis Committee, with potential members and a Chair to be approved by the Directors of Graduate Studies. The committee will consist of the Thesis Advisor, 3 other members of the Brown Faculty (which may include hospital-based faculty with a Brown affiliation), and an authority in the area of the thesis research from another institution. The Thesis Committee Chair cannot be the Thesis Advisor or the external member. In the event that there is sufficient cause to replace a thesis committee member (e.g., a faculty member leaves Brown, etc.), a request to replace the faculty member with another faculty member at Brown must be discussed with the DGSs and a request to change the member must be made in writing to the DGSs. The DGSs must approve all changes before the switch is considered official.

The Thesis Committee will meet: **once before the Qualifying Exam** to provide feedback on areas to study and on the general research outline; **once for the Qualifying Exam**; **at least twice a year for progress reports** (more often as needed if specific issues arise); **in a Pre-defense meeting**; and at **the Thesis Defense**. One of the two required progress meetings each year can be via email exchanges, but the other must be in-person or via Zoom or equivalent online platform. The outside member of the committee often only attends the Thesis Defense, but involving them earlier is advantageous for the student. The required forms can be found on the TSGP website. It is the student's responsibility to make sure that all required forms have been submitted to the Program Coordinator immediately following each milestone.

- **Qualifying Examination:** The Qualifying Exam must be passed by the end of the summer after the second year of graduate study. Failure to take the Qualifying Exam by August 31st (without prior approval for an extension) is grounds for placement on academic warning. This exam consists of both a written Thesis Proposal and an oral defense of the Thesis Proposal. In preparation for the Qualifying Exam, the student and their advisor must select a Thesis Committee, as described above.

**Thesis Proposal:** the student will develop and write a formal Thesis Proposal in close collaboration with the Thesis Advisor. The thesis proposal should be a maximum of 6 single-spaced pages in length, including figures and tables (bibliography is not included in the page limit). This document will be written in the style of an NIH predoctoral research grant proposal, including an abstract and sections on specific aims, background and significance, proposed methods and experimental approaches, interpretation of expected results, pitfalls and alternative approaches, preliminary data (although unlike an NIH grant in that extensive preliminary data are not required), and bibliography. It is suggested that the summary, background and preliminary data together make up approximately 2 pages in length, with approximately one page devoted to each of the specific aims including a detailed experimental plan. A final draft of the thesis proposal shall be provided to all Thesis Committee members at least two weeks prior to the date of the oral defense of the Thesis Proposal.

**Oral Defense of Thesis Proposal:** The oral defense (often called the "Prelim") consists of a 20-30 minute oral presentation of the thesis proposal by the student to their Thesis Committee, followed by questioning of the student and discussion of the proposal by the Committee. The Thesis Committee Chair, in consultation with the rest of the Thesis Committee, must complete and submit the Qualifying Examination Report, which can be found on the TSGP website. This form should include a thorough evaluation of the student's performance during the oral presentation and of the written proposal and any suggestions for improvement or revisions. It is the student's responsibility to bring this form to the oral defense and ensure that it is filled out and signed by the

committee members. The student must also make sure this form is submitted to the Program Coordinator and DGSs by the Chair of the Thesis Committee. The general format of the oral defense is as follows:

1. The student meets with the Thesis Committee in the absence of the Thesis Advisor to describe their experience in getting to this point, including any obstacles they may have encountered.
2. The Thesis Advisor meets with the Thesis Committee in the absence of the student to present their assessment of the student's progress and any barriers to that progress.
3. The student re-enters and gives the oral presentation of the research plan; the Thesis Committee members ask questions and provide some feedback and discussion during the presentation (the Thesis Advisor does not participate in the questioning, and does not answer the questions for the student, although they may help clarify a question if the student does not seem to understand it).
4. After the presentation, the Thesis Committee provides suggestions for improvement of the research plan (e.g., alternate experimental approaches) and feedback on the written Thesis Proposal.
5. The student leaves the room while the Thesis Committee (with Thesis Advisor present) discusses the student's performance and decides whether the student passes or fails the exam, or whether they pass with stipulations (a "conditional pass").

**Potential Outcomes of the Qualifying Examination:**

1. **Pass:** If the Thesis Committee recommends that the student “pass” the exam, no revisions to the Thesis Proposal are required and the student immediately advances to candidacy upon submission of the Qualifying Examination Report to the TSGP Program Coordinator and DGSs. The Qualifying Examination Report must provide a thorough evaluation of the student’s performance on the written proposal and oral presentation written by the Committee Chair in collaboration with the Thesis Committee.
2. **Pass with Stipulations (Conditional Pass):** If the Thesis Committee recommends that the student “pass with stipulations,” the Committee will devise a plan and a timeline for the student to correct all deficiencies and a means by which to assess that the deficiencies have been corrected. If the Committee deems the deficiencies “minor,” the student will remain in good academic standing. If the deficiencies are deemed to be “major” and/or the student does not correct the deficiencies according to the timeline, the student may be placed on academic warning with possible dismissal from the program. The Qualifying Examination Report must include details of the deficiencies and the plan and timeline to correct the deficiencies written by the Committee Chair in collaboration with the Thesis Committee. This plan should be agreed upon by the Thesis Committee and the student and must be submitted to the DGSs. Once the stipulations have been met and approved by the Committee, the student will advance to candidacy upon submission of the updated Qualifying Examination Report to the TSGP Program Coordinator and DGSs.
3. **Fail:** If the Thesis Committee recommends that the student “fail” the exam, the Committee will decide if the student will be re-examined at a later date and whether the student will be placed on academic warning. The final decision must be submitted to the Program Coordinator and DGSs by the Chair of the Committee.

In all cases above, the Chair will communicate the outcome to the student, summarize the Committee’s decision, and submit the Qualifying Examination Report to the TSGP Program Coordinator and DGSs immediately following the Examination.

- **Semi-annual Progress Reports & Student/Mentor Compacts**

**Semi-annual Progress Reports:** After satisfactory completion of the Qualifying Exam, the student is required to discuss their progress with the Thesis Committee twice per year and submit progress reports ("TSGP Committee Meeting Report" forms are on the TSGP website) to the Program Coordinator and DGSs. One of the two annual meetings can be via email exchanges (and is not required to be in-person), and the other must be in-person or via Zoom or similar platform. The purpose of the progress reports is to make sure all Committee members are aware of the student's progress on their thesis project and to ensure the student stays on track. It is the responsibility of the student to ensure these meetings are scheduled and held. It is also the responsibility of the student to provide a first draft of the report form to the committee, providing the information requested in the form (e.g., progress, papers published, and plans). The form can then be modified following the committee meeting, before submitting the final version to the Program Coordinator and DGSs. The Committee can request additional meetings (either via email or Zoom) as needed.

**Student/Mentor Compact:** All students are required to complete and submit (to the Program Coordinator) a Mentor/Mentee Compact in consultation with their Thesis Advisor once they have officially joined a thesis lab in their first year. This document outlines the expectations of the student and the expectations of the mentor. A brief summary is provided below, but the full Mentor/Mentee Compact can be found on the TSGP website.

#### FACULTY MENTORS/ ADVISORS

Advisors are vital to students' and faculty members' scholarly and professional development and to the intellectual excellence and vitality of any program. The best advising includes mentoring, which is understood as an active process by which advisors establish and foster structured and trusting relationships with graduate students by offering guidance, support, and encouragement aimed at developing their competence and character. Mentors work with graduate students to further develop their strengths, work through challenges, achieve academic excellence, and advance professionally in career paths of the student's choosing. While one faculty member typically serves as the student's principal academic advisor at any given point in the student's graduate experience, graduate students are encouraged to develop a network of mentors and work with their advisory committee members.

#### GRADUATE STUDENTS

Graduate students are responsible for working toward completion of their degree programs in a timely fashion with the goal of defending in the 5th year of graduate study. It is expected that graduate students in all programs will gain expertise in a particular area of study and, especially in PhD programs, seek to expand the knowledge of that disciplinary field by discovering and pursuing a unique topic of scholarly research. As professionals-in-training, graduate students should learn how to impart disciplinary knowledge through appropriate forms of instruction and publication and how to apply that knowledge to particular problems

- **Thesis Research**

Once a student has chosen and committed to a thesis lab, they are expected to dedicate themselves to their research full-time (outside of other program related events and requirements). Students are expected to remain in the chosen lab for the duration of their research and completion of the degree unless there are extenuating circumstances that have been communicated to the DGSs. Steps will be taken in collaboration with the DGSs, student and Thesis Advisor to resolve any concerns and ensure that the student has the appropriate mentorship and training to be successful in the chosen thesis lab. Any disagreements will be dealt with on a case-by-case basis in collaboration with the DGSs, the Associate Dean

of Graduate Studies, and any other relevant parties.

- **Doctoral Dissertation and Defense**

The Written Dissertation and Doctoral Defense are the final requirements for the doctoral degree. All TSGP students who intend to defend must schedule a meeting with the DGSs 9-12 months in advance of the expected date of defense. All students who are entering the 5th year of graduate study must meet with the DGSs in the summer before the 5th year to discuss plans for the upcoming academic year, including preparation of the required peer-reviewed publication, preparation of the written dissertation and planning of the oral defense. Any student who does not expect to defend and graduate by the end of the 5th year must meet with the DGSs and obtain written permission from the DGSs and Thesis Advisor for an extension. All requests for extension will be handled on a case-by-case basis and are not guaranteed.

All TSGP students are required to have a **pre-defense meeting** with their Thesis Committee at least one month but up to three months prior to their final defense. The thesis should be in near final form by this point and the student will make an oral presentation to the committee and be questioned about the project, thesis and relevant background. If the Committee decides the student is ready to finish the Thesis and defend, the student will schedule the Defense in preparation for graduation. It is crucial that the student work with the Program Coordinator on making final arrangements to defend and graduate. The student is responsible for abiding by the policies of the Brown University Graduate School for graduating with a PhD. Students should refer to the TSGP checklists located on the [TSGP website](#) for more information.

**Dissertation:** The student will write a Dissertation which consists of several chapters including an Abstract, Introduction, Methods, Results and Discussion. The results chapters can be intact published papers or submitted manuscripts, formatted for the thesis, with a first page of the chapter giving a complete citation and stating what contributions to the paper were made by the student and by other authors. If papers are used in lieu of results chapters, the other sections listed above (i.e., abstract, introduction, etc.) are still required but may be abbreviated. It is the responsibility of the student to follow all University guidelines for Dissertations which can be found on the [Graduate School Website](#). The written thesis must be provided to the Thesis Committee members at least two weeks prior to the Defense. Each student is expected to have at least one first-authored publication accepted in a peer-reviewed journal before graduation. The student must also submit a Dissertation Information Form to Academic Affairs Manager in the Graduate School, with a copy to the TSGP Program Coordinator and Co-DGSs at least 2 weeks prior to the date of the Defense. Once approved, the student and/or their Thesis Advisor will receive official paperwork from the Graduate School for the Defense.

**Oral Defense:** The Defense is held as a public seminar followed by a closed-door examination, with required attendance by the Thesis Committee, including its external member ("outside reader"). The format of the closed-door examination is similar to that of the Oral Defense of the Thesis Proposal during the Preliminary Exam. Once the closed-door examination of the candidate has ended, the candidate will be asked to leave the room so the Thesis Committee can determine the outcome. If all Committee Members are satisfied that the student has "passed" the Defense, they will sign at least two copies of the signature page, which has been provided to them by the student. A student can "pass" even if minor revisions to the written dissertation are requested by the Committee. If the Committee determines that the student has "failed" the Defense due to significant shortcomings in either the written thesis or oral defense, the Committee will provide the student with an explanation of the shortcomings in writing and determine whether the student should be placed on academic



warning or be dismissed from the Program.

When the Dissertation is in its final form, the student must work with the Program Coordinator to ensure that all of the required paperwork has been submitted for graduation. Students are responsible for knowing the deadline(s) for submission in a given semester. The list includes:

- Submit the signed copy of the signature page to Academic Affairs Manager in the Graduate School, and copy the Therapeutics Graduate Program Coordinator
- Submit the thesis electronically at <https://library.brown.edu/etd/>. Send the Graduate Program Coordinator an electronic copy of the final thesis.
- Obtain a Letter of Clearance from the Bursar indicating that all outstanding debts have been paid.
- Complete the Exit Documentation required by the Graduate School, which can be found on the Grad School's Dissertation Guidelines page under "Submission of the Final Copy".
- If the student is leaving Brown, turn in building keys, lab notebooks, electronic files that are property of the lab, and anything else they need to leave behind.

### **C. Other Required PhD Activities**

- Attend Monthly TSGP Data Club
- Attend Monthly TSGP seminars and lunch with the speaker.
- Teaching assistantship
- Present research results at scientific conference(s)
- Give 1st and 3rd year student talks.
- Have at least one first-authored, peer-reviewed paper accepted for publication by graduation
- Attend TSGP Orientation (1<sup>st</sup> & 2<sup>nd</sup> year students only)
- Attend Annual TSGP Retreat
- Attend and Pass RCR/R&R/IDP/Lab safety trainings
- Attend Fall Student/Trainer Meetings (1<sup>st</sup> year students only)
- Submit Mentor/Mentee Compact

### **D. Professionalism**

- All graduate students are expected to maintain a level of professionalism that is reflective of their status as both a student and an employee of Brown University. This includes, but is not limited to: addressing faculty, staff and fellow students with courtesy and respect, properly addressing each individual when speaking to them and/or addressing them in writing; responding to emails within 24 hours (unless there are extenuating circumstances such as an illness or a planned vacation)
- All graduate students are expected to maintain and uphold the practices that are specific to each lab including but not limited to: keeping track of all solutions, equipment, experiments and products of experiments and logging information as appropriate; keeping an up to date, neat, clean lab notebook including protocols, experimental details and data files; keeping a clean work environment and being mindful of the expectations of others and the rules/protocols of the lab.
- All graduate students are expected to follow and complete the requirements of the Program outlined in the guidelines. This includes, but is not limited to, attending monthly seminars and data clubs, attending all program-sponsored activities, completing required coursework, completing lab rotations and submitting required paperwork in a timely fashion.

### **E. PhD Financial Support**

All students offered admission into the Division of Biology and Medicine graduate programs are guaranteed 5 years of financial support including stipend, health insurance, and tuition and fees, contingent on making satisfactory progress toward the PhD degree. This support comes from a combination of resources including

teaching assistantships, Division fellowships, predoctoral training grants, research grants, and individual fellowships awarded both extramurally and/or through Brown. Any student who does not expect to defend and graduate by the end of the 5th year must meet with the DGSs and obtain written permission from the DGSs and Thesis Advisor for an extension. All requests for extension will be handled on a case-by-case basis and are not guaranteed. The Division of Biology & Medicine provides a transitional stipend to aid in relocation expenses in September of the first year. Furthermore, each student who obtains a competitive extramural individual fellowship (e.g., from NSF, NIH, Ford, etc.) is awarded an extra \$250 per month in Divisional stipend support as a reward for obtaining the external funding. In addition, the Office of Graduate Studies supports \$700 per year to cover travel expenses for a student to present their work at a scientific meeting (applications due a month before the conference), and TSGP provides some travel support for any student who is presenting their work in a poster or talk at a scientific conference (regardless of their year in the program). The Graduate School also provides up to \$1,000 per year for students presenting at international conferences. The Directors of Graduate Studies and Graduate Program Coordinator can provide more detailed procedural information.

#### **IV. Overview of the Masters Degrees in Biotechnology**

The Therapeutic Sciences Graduate Program offers Masters of Science (ScM) and Masters of Arts (AM) degrees in Biotechnology. Students may enter through the 5th Year Masters Program or the external degree program, which may require 1 to 2 years of study depending on the student's background. In both pathways, students may elect to fulfill the requirements of a thesis (ScM) or a non-thesis degree (AM). Every student admitted into the Master's program (ScM/AM) is reviewed for a partial merit scholarship, but these are limited. Private funds (loans, outside scholarships, etc.) make up the majority of funding.

For the 5th Year Masters Program, a student must apply prior to the end of their last semester of undergraduate study at Brown. For students fulfilling the requirements of research and a thesis, a letter of recommendation from a Brown faculty member willing to host the student in their lab is preferred. To be eligible for the 5th Year Masters Program, students must have successfully completed and fulfilled all requirements of an undergraduate concentration at Brown. As many as two graduate-level (1000/2000) courses taken at Brown as part of the student's undergraduate degree may be applied towards the requirements of the graduate degree as long as they are approved by the DGSs.

Non-Brown students must apply by completing the standard School of Professional Studies application and indicate their interest in the Biotechnology Masters (ScM or AM). Transfer of credit towards the ScM and AM Program from other institutions is not allowed.

Masters students are invited to attend the TSGP monthly meetings and many other activities described above for the PhD students such as seminars and data clubs.

##### **A. Masters of Science (ScM) Degree Requirements**

To satisfy the requirements of the ScM degree, students must complete an approved program of study consisting of a minimum of eight semester-long courses (eight tuition units). No more than three of the eight courses are to be for thesis research credit (Graduate Independent Study, BIOL 2980). Students must complete at least five structured, advanced-level (1000/2000 level) courses in biology or other sciences. These courses must be approved by the DGS. All students (5th year and non-Brown) pursuing an ScM degree must select a thesis advisor

by the end of their first month in the program and will perform research for the duration of their time in the program. Students are encouraged to have open conversations with their thesis advisor about the amount of time that should be dedicated to their thesis research and general expectations before joining a lab and must fill out and sign a mentor agreement with their advisor. It is expected that students are performing thesis research even if they are not signed up for graduate independent study. Thesis research progress will be evaluated each semester by the student's thesis advisor. If a student is not making satisfactory progress on their thesis, their thesis advisor may recommend to the DGS that the student be put on academic warning. In these cases, the DGS, thesis advisor, and the student will work together on a plan for the student to return to good standing.

In their terminal semester, students, in consultation with their thesis advisor, must choose a thesis committee which will consist of two members of the faculty and the thesis advisor. The list of faculty serving on the committee should be communicated to the DGS. Students must prepare a written thesis according to the Graduate School guidelines. The written thesis is due to the student's committee two weeks before the scheduled thesis defense. The final written Master's thesis must follow all the guidelines specified by the Graduate School and be submitted to the Graduate School by the deadline corresponding to the date of their degree conferral. The thesis defense will be an open presentation with the requirement that the entire thesis committee is present. The thesis defense does not require a closed examination session.

All students must attain a grade designation of B or better on their courses /credits counting toward their degree requirements. Courses/credits may not be taken on an S/NC basis. If a student does not pass their courses with a grade designation of B or better they will be put on academic warning and must take another credit to ensure they have passed eight credits. Students must also complete the Responsible Conduct in Research (RCR) course and lab safety trainings as appropriate. Students who cannot attend the course will be required to complete a replacement RCR course. If the RCR requirement is not fulfilled by the end of their first semester, the student will be placed on academic warning.

## **B. Masters of Arts (AM) Degree Requirements**

Students who elect to fulfill the requirements of a non-thesis degree will receive the AM degree. The AM degree consists of a minimum of eight semester-long courses (eight tuition units). These courses must be 1000/2000 level structured courses in biology and the other sciences. These courses must be approved by the Program Directors. All students must attain a grade designation of B or better on their courses /credits for the courses to count toward their degree requirements. Courses/credits may not be taken on an S/NC basis. If a student does not pass their credits with a grade designation of B or better they will be put on academic warning and must take another credit to ensure they have passed eight credits.

The Biotechnology Masters Program does not accept students into Brown's concurrent baccalaureate and Masters program.

## **C. Transitional Masters Degree**

The Therapeutic Sciences Graduate Program does not offer transitional masters degrees on the way to a PhD.

## **v. MD/PhD Degree**

Students in the MD/PhD Program may participate in the Therapeutic Sciences Graduate Program. These students must complete all of the TSGP requirements specified for the PhD degree. MD/PhD students may receive course credit for the first 2 years of medical school, but must take BIOL 2250 Survey of Modern Therapeutics in their first semester as a PhD student. Students may also be required to take other courses (e.g., Biostatistics) as appropriate and in consultation with the DGSs. MD/PhD candidates may complete their research lab rotations in the summers preceding their first year in TSGP if they choose.

## VI. Student Support Resources

The TSGP Graduate Program Directors should be informed of any disability or other condition that might require accommodation or modification of any of course procedures or other graduate program requirements. Students with this concern should register with Student Accessibility Services (SAS) and provide the relevant Graduate Program Directors with an academic accommodation letter from them. For more information, contact [SAS](#) directly.

Counseling and Psychological Services (CAPS) provides free confidential counseling services to students at Brown University. CAPS can be contacted directly by all Brown University students.

Numerous other student support resources are listed on the [Graduate School](#) website and the website of the [Office of Graduate Studies](#).

## VII. Leaves of Absence

For leaves of absence, the Therapeutic Sciences Graduate Program follows the guidelines of the Brown University Graduate School: <https://graduateschool.brown.edu/>

Applications for leaves of absence should be sent to the TSGP Graduate Program Directors for approval using the forms provided by the Graduate School and students should consult with the Associate Dean of Student Support in the Graduate School if they are considering a leave of absence. The Program Directors will consult with the Graduate Program Committee in evaluating the request. Students must use the standard form to request a leave and should attach a separate note explaining the reason for their request. The Graduate Program Directors should sign the form to indicate approval and forward it to the Graduate School for approval by the Dean. The guidelines and timelines of leaves of absence, and returns from those leaves, are provided at the above Graduate School website. If the student fails to appropriately inform the Graduate School of an intention to take a leave of absence, they will be considered still active and will be billed for tuition.

## VIII. Academic Standing

### Academic Standing

Each year the Therapeutic Sciences DGs evaluate the progress of each of the students in the TS PhD program and determine their academic standing. Each student is given a standing letter typically in May of each year, and more often as needed. The purpose of the standing letter is to provide feedback to the student on their accomplishments from this past academic year and summarize requirements for the upcoming year. Brown University has three types of academic standing and students will be notified of their status in the annual letter.

1. A student can be judged to be in *Good* Standing, and recommendations for the upcoming year will be provided,
2. A student can be judged to be in *Satisfactory* Standing, and in addition to recommendations for the upcoming year, tangible steps will be articulated to return to good standing, or
3. A student can be judged on *Warning* Status, in which case the student is placed on probation. In this latter case, in addition to recommendations for the upcoming year, tangible goals will be articulated that, if reached, would allow the student to return to good or satisfactory standing at the end of the next semester. However, if the student is not able to reach these goals, the student may be asked to leave the program at the end of the next semester. That decision will be up to the

DGSs, in consultation with other relevant faculty, including thesis advisors.

### **Warning and Dismissal**

Failure to fulfill any Program requirements in a timely fashion will result in a student being placed on warning. A student on warning may be dismissed from the Graduate Program. This dismissal may be for academic or non-academic reasons (e.g., academic misconduct). The Directors of the Graduate Program in consultation with academic advisors continually assess not only student academic achievement, but evidence of motivation, aptitude for bench work, and dedication to research, striving for excellence, intellectual engagement, responsibility, maturity, and participation in program activities. The DGSs will review each case for dismissal and place their recommendation before the Graduate Program Committee. Two thirds of the Graduate Program Committee will constitute a quorum and a decision to accept the Directors' recommendation will require a favorable majority vote. Appeal of such decisions is to the Dean of the Graduate School. Procedures relating to dismissal for academic misconduct are addressed separately in the Graduate School Handbook which can be found on the Graduate School website.

### **Reasons for being placed on warning status by the Program include, but are not limited to:**

- Earning a grade that is lower than a B in any course, including independent study (PhD and Masters) is sufficient to warrant further review of a student's performance and may constitute a student being placed on warning .
- Failure to complete the proper number of credits in the semester course load or for earning an INC in a course.
- Failure to take the PhD Qualifying Exam by the end of the summer after the second year of graduate study (i.e., August 31st), unless an extension has been approved by the Graduate Program Committee.
- Failure of a PhD student to complete 3 full lab rotations during the first academic year.
- Failure of a PhD student to be accepted into a thesis lab after 5 rotations.
- Unsatisfactory progress in the thesis research, as determined by the Thesis Committee (PhD), or thesis advisor (Masters)
- Failure to submit final undergraduate transcript(s) to the Graduate School (PhD and Masters)
- Failure to meet the expectations of the required TA-ship

A student placed on Academic Warning will receive a letter that describes the problems and specify requirements for return to good academic standing, as well as deadlines for meeting those requirements. If the designated requirements are not met by the specified deadlines, the student will be dismissed from the program.

### **In addition, the following specific circumstances, among others, can lead to dismissal:**

- Earning a grade that is lower than a B in any credits, including independent study (PhD and Masters) more than once.
- Failure to meet the requirements of a warning letter within the deadlines provided (PhD and Masters).
- Failing the PhD Qualifying Exam or failing to meet the requirements and deadlines to pass the Qualifying Exam after receiving a pass with stipulations (conditional pass).
- Failure to find a new lab within 2 months after leaving one's original thesis lab (PhD and Masters).

- Failing the PhD Doctoral Dissertation and/or Defense.

**Grievance Procedures:**

If a student believes a warning or dismissal is unjust, they may appeal the process according to the Graduate School grievance procedures: <https://graduateschool.brown.edu/> and [Masters.brown.edu](https://masters.brown.edu/)