

DGP

Driskill Graduate Program
in Life Sciences

Student Handbook
2023

Northwestern University
Feinberg School of Medicine

**Driskill Graduate Program in Life Sciences
2023-24 Academic Year**

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Appendix – TGS Learning Objectives for DGP

Abbreviations

DGP	Driskill Graduate Program in Life Sciences
GSTS	Graduate Student Tracking System
IBiS	Interdisciplinary Biological Sciences Program at Northwestern University
ILS	Introduction to Life Science Research
NUIN	Northwestern University Interdepartmental Neuroscience Program
TGS	The Graduate School

The DGP reserves the right to change, without notice, any statement in this publication concerning, but not limited to, rules, policies, curricula, and courses. The DGP reserves the right to implement new policies and procedures as needs arise. Students will be notified of changes in the handbook via email. Failure to read the information in the handbook or email updates does not excuse a student from knowing and complying with the handbook content. In addition to TGS and DGP policies, graduate students are subject to and should be aware of [University policies pertaining to students](#).

The Walter S. and Lucienne Driskill Graduate Program in Life Sciences (DGP) is a multi-departmental, multi-disciplinary doctoral training program designed to prepare students for a research career in modern biomedical sciences. Students enrolled in the DGP are eligible for a Doctor of Philosophy (PhD) degree conferred by The Graduate School (TGS) at Northwestern University.

Contact Information

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2023-2024 Northwestern University Academic Calendar

<http://www.registrar.northwestern.edu/calendars/academic-calendars/index.html>

2023-2024 DGP Course Schedule

Green Shading – Core course required for first year students

Blue Shading – Introduction to Life Science Research (ILS), required for first year students

Beige Shading – Required, non-credit Responsible Conduct of Research (RCR) course

Pink shading – Required in-person research credits

Fall	Winter	Spring	Summer
DGP 402 Fundamentals of Biomedical Sciences 1	DGP 404 Fundamentals of Biomedical Sciences 2	DGP 496-2 Introductions to Life Science Research (ILS) (Journal Club)	DGP 496-3 ILS Grant Writing
DGP 484 Statistics and Data Analysis for Life Scientists	DGP 425 Topics in Drug Discovery	DGP 420 Introduction to Pharmacology	
DGP 403 Advanced Immunology	DGP 430 Genetics (starting 2024)	DGP 456 Topics in Developmental Biology	
DGP 435 Signal transduction and human disease	DGP 440 Immunology	DGP 475 Virology	
DGP 442 Microbiology	DGP 433 Advanced Microbial Pathogenesis	DGP 485 Intro. to Data Science / Bioinformatics	
DGP 450 Tumor Cell Biology	DGP 460 Pharmacovigilance		
	DGP 486 Advanced Bioinformatics / Genome Informatics		
DGP 494 Colloquium on Integrity in Biomedical Research (Year 2 – Section 1; Year 6 – Section 2)	DGP 480 Molecular Basis of Carcinogenesis		
DGP 590 Research (Years 1+2) or TGS 500 Advanced Doctoral Study (Years 3+)	DGP 590 Research (Years 1+2) or TGS 500 Advanced Doctoral Study (Years 3+)	DGP 590 Research (Years 1+2) or TGS 500 Advanced Doctoral Study (Years 3+)	DGP 590 Research (Years 1+2) or TGS 500 Advanced Doctoral Study (Years 3+)

Course Requirements and Registration

Students should familiarize themselves with TGS [General Registration Policies](#) and bookmark the academic calendar linked above.

The Graduate School requires that all students complete nine graded courses (units). DGP students take at least 9 formal classes - 2 fundamentals core classes, statistics, 5 electives, and Introduction to Life Science

Research (ILS). If desired and appropriate, students may take more graded courses. Students must maintain full-time registration (at least 3 units) throughout their course of study. Students in the first 8 quarters (two years) of study should register for DGP 590 Research (up to 3 units) to meet the minimum registration requirement. After 8 quarters (third year and beyond), students should register for TGS 500 Advanced Doctoral Study to maintain full-time status. Research credits are expected to be completed in person on the Chicago campus.

First- and second-year students should register within two weeks of the opening of registration in CAESAR each quarter. This will enable course directors to know the enrollment in their classes as soon as possible and plan accordingly. First-year students must discuss course preferences with their academic advisor and obtain an approval signature on the appropriate form prior to registering.

DGP students will typically fulfill all course requirements within the first two years. Students may continue to take required classes during year three with permission. Students may register for non-required course work in any year. **Students may not DROP registration for any class after the deadline set by the Northwestern University Registrar.**

Advising

Students in the DGP have both an academic advisor (for the first year) and/or a research advisor.

Academic Advising

The DGP assigns a member of the Program Committee as each student's first year academic advisor. Academic advisors and first year students meet before the beginning of each quarter to discuss course registration, choices for laboratory rotations, and other academic matters. Each student's course and rotation selection must be approved by the academic advisor; each student will obtain the advisor's signature on the provided form each quarter and return the form to the DGP Office. Failure to obtain approval for course selections during the first year will result in probation by the DGP.

Students are encouraged to meet with their advisor during each quarter to discuss ongoing progress and formulate plans for acceptable academic progress. The academic advisor serves as the primary advisor until the student chooses a thesis lab. DGP administrators are also available for advising.

Research Advising

It is the goal of the DGP that all students identify a mentor, obtain outstanding research training, and complete their PhD requirements in a timely fashion. To facilitate a good training relationship, both student and advisor are encouraged to read and adhere to the principles described in the AAMC *Compact Between Biomedical Graduate Students and Their Research Advisors*. The AAMC Compact can be found [here](#).

Once a student joins a lab for thesis research, the lab head becomes the student's primary advisor from that time forward. Research advisors bear the main responsibility for monitoring the student's research progress and academic training. This responsibility is shared with the student's thesis committee. Importantly, the advisor is responsible for financial support (tuition and stipend) following the fellowship period.

The thesis committee's primary duty is to review the student's research progress and provide both scientific and personal advice and support. The committee is also responsible for evaluating the student's work and to report to the DGP whether the student is making appropriate progress towards completion of the PhD.

Faculty advisors and thesis committee members are encouraged to communicate to students any perceived difficulties or deficiencies openly and honestly so that the student may address and correct the problems.

Likewise, students are encouraged to communicate to their advisors any mentoring difficulties or deficiencies openly and honestly so that the advisor may address and correct the problems.

If at any point a student chooses to leave a lab, the student will be permitted to find another thesis home. The decision should be communicated to the DGP Office and faculty advisor. The DGP Office will aid the student as much as possible in finding a new home, including financially supporting the student for a period of up to 3 months. The student must secure a new lab home within three months or be subject to possible dismissal from the DGP. A student who changes labs must form a new thesis committee and present a thesis proposal within six months after joining the new lab. Situations in which the faculty advisor seeks to dismiss a student from the lab are discussed below.

Nondiscrimination Statement

Northwestern University does not discriminate or permit discrimination by any member of its community against any individual on the basis of race, color, religion, national origin, sex, pregnancy, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, citizenship status, veteran status, genetic information, reproductive health decision making, or any other classification protected by law in matters of admissions, employment, housing, or services or in the educational programs or activities it operates. Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. Further prohibited by law is discrimination against any employee and/or job applicant who chooses to inquire about, discuss, or disclose their own compensation or the compensation of another employee or applicant.

Northwestern University complies with federal and state laws that prohibit discrimination based on the protected categories listed above, including Title IX of the Education Amendments of 1972. Title IX requires educational institutions, such as Northwestern, to prohibit discrimination based on sex (including sexual harassment) in the University's educational programs and activities, including in matters of employment and admissions. In addition, Northwestern provides reasonable accommodations to qualified applicants, students, and employees with disabilities and to individuals who are pregnant.

Any alleged violations of this policy or questions with respect to nondiscrimination or reasonable accommodations should be directed to Northwestern's Office of Civil Rights and Title IX Compliance, 1800 Sherman Avenue, Suite 4500, Evanston, Illinois 60208, 847-467-6165, OCR@northwestern.edu

Questions specific to sex discrimination (including sexual misconduct and sexual harassment) should be directed to Northwestern's Title IX Coordinator in the Office of Civil Rights and Title IX Compliance, 1800 Sherman Avenue, Suite 4500, Evanston, Illinois 60208, 847-467-6165, TitleIXCoordinator@northwestern.edu.

A person may also file a complaint with the Department of Education's Office for Civil Rights regarding an alleged violation of Title IX by visiting www2.ed.gov/about/offices/list/ocr/complaintintro.html or calling 800-421-3481. Inquiries about the application of Title IX to Northwestern may be referred to Northwestern's Title IX Coordinator, the United States Department of Education's Assistant Secretary for Civil Rights, or both.

Academic and Research Integrity

Academic and Research Integrity is an essential feature of academic life. Breaches of this integrity are unacceptable and cannot be tolerated. The Graduate School provides specific procedures that will be followed in cases of allegations of a violation of academic integrity. This policy is available [here](#).

Any case of alleged academic dishonesty involving a student in DGP will be referred by the DGP to the Associate Dean of Student Affairs at The Graduate School.

Accusations of plagiarism in coursework, qualifying exams, thesis proposals or dissertations will be referred to TGS by faculty members and/or the DGP. Students found to have engaged in plagiarism may be dismissed by either TGS or the DGP.

The Northwestern Provost's Principles Regarding Academic Integrity can be found [here](#).

Entering DGP students are asked to read and sign the statement below:

I will respect the principles of Academic Integrity as described by the Northwestern University Provost and the Northwestern University Graduate School. I will not cheat in any way on any course exam, course assignment, or qualifying exam. I will not plagiarize in a course assignment, qualifying exam, thesis proposal, dissertation, or any other written document during my time as a graduate student at Northwestern University.

Any student who suspects or is witness to any acts of academic dishonesty has an obligation to report the act(s) to the relevant course director, the Director of the DGP, and/or TGS Associate Dean for Student Affairs.

DGP students are subject to the code of conduct detailed in the [Northwestern University Student Handbook](#). The NU Student Handbook requires a student to adhere to university-enacted policies, including those posted on any University websites, including but not limited to the site for the Office for Research Integrity. A student who violates University policy may be dismissed.

Research misconduct issues are investigated by the Office for Research Integrity (ORI). The Provost will determine final sanctions in consultation with TGS once a determination has been made as to whether there was research misconduct. ORI policy and procedures concerning research misconduct can be found [here](#).

Frequent and open communication between students and advisors is essential in preventing research misconduct, with particular emphasis on the regular review of lab notebooks and primary data. Data and related materials generated in lab cannot be withheld from the faculty advisor and must be provided upon request. Northwestern University [policy](#) indicates that the Northwestern University holds ownership of research data derived from sponsored research. Moreover, the Principal Investigator (PI) of sponsored research is responsible for ensuring proper management and retention of the research data owned by the University. Research data is described as all information in whatever form collected and/or generated during a sponsored research project, including records necessary for the reconstruction and evaluation of the results of research. Records are defined as recorded information of any kind and in any form including writings, drawings, graphs, charts, images, prints, photographs, microfilms, audio and video recordings, data and data compilations, and electronic media, including e-mail. Research data are to be accessible to members of the University community, external collaborators, and others as appropriate (e.g., for patent applications or journal submissions). Where necessary to assure needed and appropriate access (e.g., for research misconduct investigations), the University may take custody of research data in a manner specified by the Vice President for Research.

A faculty advisor who feels that a student is withholding data must notify the student and the DGP via email, itemizing what is being withheld. The student may ask for a meeting with the advisor and a DGP representative to discuss the request. The student will have one week to comply with the advisor's request for data. If the student fails to provide the requested data within one week, the advisor may immediately dismiss the student from the lab. A student who is dismissed from a lab for withholding data may petition the Program Committee for permission to seek a new thesis lab home. The Program Committee may choose to dismiss the student from the DGP or may allow the student an opportunity to secure a new thesis lab. Where appropriate, the Program Committee may allow a student up to three months to find a new lab and thesis advisor. Failure to secure a new lab in that time frame will result in dismissal from the DGP.

Given that data, reagents, methods, and any other materials that are developed in the lab are the property of the University and are under the control of the faculty advisor, students should devote all their time to work that is sanctioned by the advisor. Students may not use their time in the lab or university resources to develop projects, scientific or otherwise, that are not specifically approved by the faculty advisor. Students shall also not initiate or engage in research activities with collaborators or others outside the lab without the specific approval of the faculty advisor.

Students also shall not attempt to publish their work without the specific approval of the faculty advisor. Students and faculty will work together to construct appropriate manuscripts for publication. Final decisions regarding the content of manuscripts, as well as the timing and destination of manuscript submissions, will be made by the faculty advisor.

Social Media Policy

Students accepted to the DGP and current DGP students should be cautious in using social media such as Facebook, Twitter, blogging etc. Graduate students and faculty at Northwestern are asked to maintain the highest standards of conduct. After you are admitted to the DGP, enrollment remains contingent on your demonstration of this high standard of conduct, through sound judgment, personal perception, integrity, and accountability. Posting items that represent unprofessional behavior or that violate Northwestern University policies on social networking sites will result in disciplinary action.

Further guidance and tips on social networking can be found [here](#).

Program Requirements

First Year of Study

During the first year of study in the DGP, students will complete the following degree requirements:

- Core Courses; Introduction to Life Science Research (ILS)
- Additional elective courses
- Attendance at all Lectures in Life Sciences seminars
- Laboratory Rotations (3 total, one per quarter, in-person)
- Selection of a Research Advisor
- Choice of Research Cluster

Individual research clusters may have their own suggested courses. Students select their course work in consultation with the academic and research advisors.

1. Core biology courses and statistics

All students in the DGP complete two biological core courses: Fundamentals in Biomedical Sciences 1 and 2. In addition, students complete the DGP course in statistics. Students may **NOT DROP** their registration in a core course. Any student who drops a core class will be placed on probation by the DGP.

Students who enter the DGP with a master's degree may petition to opt out of one or two core classes. Details can be found in the Transfer Credits section below (see section on Graduate School Policies).

First year students are required to participate in the Introduction to Life Science Research class over two quarters. In the spring, students receive training in foundational skills that complement "bench-side" training (non-credit class). In the summer quarter, the class provides training in research proposal writing. Students will

receive 1 unit credit and grade by registering for ILS 496-3 in summer of year one. The grade represents a combination of the performance in both quarters of the ILS class.

2. Electives

The DGP provides access to interdisciplinary training in part by offering classes that span many areas of biomedical sciences. Students are encouraged to not only take classes within their scientific area, but also to take classes that will be broadly relevant to their research.

After completion of the core classes, the remaining required four graded courses will typically be selected from the DGP course catalog. Students may take IBiS or NUIN classes to satisfy elective requirements. Students may also select appropriate courses from other PhD programs (e.g., BME, Chemistry, ChBE) that are germane to their dissertation research with the approval of the academic (during the first year) or research (in subsequent years) advisor and the DGP Office. A maximum of two classes from Northwestern master's programs can count towards the four required elective classes.

Certain DGP classes have prerequisites and are intended for second year (or beyond) students and can be taken in the first year only with specific approval from the academic advisor. These include Advanced Immunology (403), Advanced Microbial Pathogenesis (433), Molecular Basis of Carcinogenesis (480), and Advanced Bioinformatics (486).

Students should discuss with their PIs which courses they plan to take when they first join their thesis lab in year one.

3. Lectures in the Life Sciences

Lectures in the Life Sciences (LLS) is the seminar series sponsored by the DGP. Lectures are presented by nationally and internationally renowned research scientists. First year DGP students are required to attend the LLS seminars.

4. Laboratory rotations and lab match

Laboratory rotations provide both the student and faculty mentor an opportunity to evaluate the potential for successful thesis work. From the student's viewpoint, it is important to identify a mentor, a project, and a lab environment that combined will provide the best possible scientific training. From the mentor's viewpoint, the rotation allows for an evaluation of work habits, interest, dedication, and focus. The goal of the process is to match each student with a mentor who is willing and able to guide the student throughout their graduate career. Students are strongly encouraged to visit several faculty labs before choosing any one lab for rotation.

Students are expected to complete three laboratory rotations, each ten weeks in length. Rotation schedules coincide with the beginning and end of classes each quarter (fall, winter, and spring). Prior to beginning each quarter, the student will meet with their academic advisor and obtain the written consent for rotation destination and class choices. Students who do not adhere to stated deadlines for establishing and beginning any rotation may be placed on probation by the DGP. Rotations are expected to occur in-person on the Chicago campus unless given permission to rotate in an IBiS-affiliated laboratory on the Evanston campus.

A. Rotation evaluation and written report

Five weeks into each quarter, students and research advisors will be reminded to meet for a check-in to align rotation goals, assess student/mentor fit, and work towards addressing any potential student or PI concerns. At the end of a rotation, the student and rotation advisor will meet to discuss the student's performance and the possibility of the student joining the lab at the end of the academic year. The research advisor will complete a Rotation Evaluation form, which can be found [here](#). **This evaluation is not confidential.** It will be kept in the

student's file and may be used as supporting material when the student applies for other rotations, external fellowships, training grant appointments, etc. At the end of each quarter, the DGP Director and Program Committee may use the rotation advisor's evaluation to determine acceptable academic progress.

Also, at the end of each rotation, the student must submit a written report (2 to 3 pages total) to the rotation advisor and the DGP Office that should include the following information: background and significance, methodology, results, and conclusions of the project. Students should discuss the report with the advisor to tailor the report to the specific circumstances and project of their rotation to make the report a useful training exercise. Both the evaluation form and the written report are due to the DGP Office two weeks after the end of the rotation.

B. Shortened rotation

In rare cases, during the mid-quarter check-in, either a rotating student or a rotation advisor may determine well before the end of a ten-week rotation that the lab will be a bad fit for the student. In such cases where the student or advisor feel very strongly that the lab cannot serve as a thesis home, the student should contact the DGP Office to discuss ending the rotation early.

Possible outcomes after a shortened rotation include:

- 1) beginning the next scheduled rotation early, anticipating spending more than 10 weeks in that lab, or
- 2) beginning a short rotation (at least 5 weeks long). This rotation may last past the end of the quarter but cannot be extended if it delays the start of the subsequent rotation. Students have one week to identify and start their new rotation. All students will complete 28 to 30 weeks of rotation in at least three labs.

C. Rotating with IBiS faculty

DGP students may complete one of the three rotations in a lab in the IBiS program on the Evanston campus. A rotation with IBiS faculty should be completed in the spring quarter. Students should discuss rotations in the IBiS program with an IBiS administrator prior to starting a rotation. If a DGP student chooses to conduct their thesis research in an IBiS lab, they must apply to transfer to the IBiS program. Students interested in a transfer should discuss the process and requirements with both DGP and IBiS administrators.

5. Advisor selection

Each student must complete three full rotations. Laboratory work in the summer prior to matriculation may also serve as an extra rotation for the purpose of choosing an advisor. However, this summer work cannot substitute for one of the three required rotations without specific permission of the DGP Director.

At the end of the rotations, each student provides the DGP Office with a list (in order of preference) of the faculty with whom they wish to do thesis research. Students are highly encouraged to discuss the possibility of joining a lab with the PI before submitting their list to the DGP Office. Faculty are notified of students wishing to join their lab and are given the choice of accepting or not accepting the student.

The choice of dissertation advisor should be made carefully and in consultation with the academic advisor, other faculty, and students as well as the potential research advisor(s). Making a "deal" with one faculty member before completing all rotations is not advised, as there is a real possibility that a subsequent rotation will prove to be a better match from both the student's and the faculty member's perspective.

6. Individual Development Plan

After joining a thesis lab, each student should meet with their new research advisor and begin to formulate a plan for the thesis project. To aid in this important activity, each student will prepare an Individual Development Plan (IDP) with their advisor using the form provided by the DGP [here](#). The student and advisor should also

read and discuss the [AAMC Compact Between Biomedical Graduate Students and Their Research Advisors](#). Students will turn in the completed and signed form to the DGP Office by the end of the summer quarter of the first year.

Additional resources for developing an IDP are available through [Science Careers](#) and [FASEB](#).

Students will update the IDP with their advisor each year at the time of the thesis committee meetings and submit a copy to the DGP along with the annual thesis committee form.

7. Requirements for academic progress in year one

The progress of each first year DGP student is reviewed at the end of each quarter by their academic advisor. To be in good academic standing, students must maintain a minimum overall GPA of 3.0 and successfully complete their laboratory rotations. Any student who does not maintain at least a 3.0 GPA will be placed on academic probation by the DGP and TGS.

When a decision to place a student on probation is made by TGS, the student and DGP Director will be notified in writing. A student placed on probation will be given at most two quarters (not including summer quarter) to resume satisfactory academic standing. TGS notifies students of probation status on a quarterly basis. During the probationary period, students will remain eligible to receive federal and institutional assistance (except when they have exceeded their degree deadline). At the end of the probationary period, progress will be reviewed. If a student cannot re-establish satisfactory academic standing during the two probationary quarters, the student may be excluded (dismissed) from TGS.

At the end of the spring quarter in year one, each DGP student's academic performance will be evaluated by the Program Committee for suitability to continue in the DGP. The Program Committee will review both grades and rotation evaluations in determining whether a student can continue. Students at this point with an overall GPA below 3.0 may face immediate dismissal. Alternatively, the Program Committee may choose to place the student on probation, with the possibility of dismissal later should the student not meet the GPA standard within a designated time. Students with an acceptable overall GPA but with a GPA below 3.0 in DGP classes will be placed on probation by the DGP and may face dismissal should the student not meet the GPA standard within a designated time. A student who receives two grades of C or lower at any point may be subject to dismissal. The Program committee may also choose to dismiss a student if the student's rotation evaluations suggest that the student is unfit for graduate work.

Students typically join their thesis research laboratories at the beginning of the summer quarter of year one. Any student who is not accepted in a lab after three rotations may be allowed to do one or two additional rotations in the summer of Year 1, contingent on approval by the Program Committee. The Program Committee may choose to dismiss a student who does not have a thesis lab after three rotations if the student's GPA is below 3.0 and/or if the student's rotation evaluations suggest that the student is unfit for graduate work.

A student who is given additional rotation time but who does not secure a thesis lab by the end of the summer quarter of the first year may be dismissed from the program. The student's academic record (grades and rotation evaluations) will be reviewed by the Program Committee and a determination made whether to dismiss the student or allow the student an additional 5 weeks of rotation in the fall to secure a thesis lab. If the student fails to secure a lab home after the fall rotation, they will be dismissed.

8. Research clusters

Students may choose to concentrate their studies in one of the nine research clusters listed below and described [here](#).

- Biotechnology Systems and Synthetic Biology
- Cancer Biology
- Cell and Molecular Biology
- Chemical Biology and Drug Discovery
- Developmental Systems and Stem Cell Biology
- Genetics and Genomics
- Immunology and Microbial Sciences
- Reproductive Science
- Structural Biology and Biophysics

The nine NULABS (Northwestern University Life and Biomedical Sciences) clusters are foci of research areas in the DGP and IBiS. Each cluster serves as an organization point for training activities in that area. These activities may include seminars, journal clubs, super-group meetings, research-in-progress meetings, symposia, poster sessions, etc. First year DGP students are encouraged to participate in activities of one or more clusters to supplement the exposure to scientific thinking that is obtained in the coursework. Each of the clusters may have a list of recommended coursework and additional training activities that cluster faculty members believe are critical to a student's training in that area.

At the end of the spring quarter of the first year, each DGP student will be asked to declare a primary cluster affiliation for purposes of enhancing their PhD training experience. Most often, the cluster choice will coincide with the area of research of the thesis advisor. It should be noted that many thesis advisors will be associated with more than one cluster. Therefore, although a student will declare a primary cluster affiliation, they can participate in multiple clusters as dictated by the thesis research. Students will be expected to participate in cluster activities for the remainder of their time in the DGP.

9. Transfers to the DGP from other Northwestern programs

During the first year, students enrolled in other PhD programs at Northwestern may apply for a transfer to the DGP. Students who are interested in a potential transfer must first talk to the DGP Office to learn more about the program and its requirements and to obtain permission to rotate within a DGP lab for the purpose of identifying a potential thesis home. Should permission be granted, students should contact DGP faculty that they are interested in, arrange for a rotation(s), and notify the DGP Office and their home program of their plans. Any laboratory rotations that are necessary for the student to find a thesis home will be funded by the student's home program. To formally apply for admission into the DGP, students must complete at least one rotation in a DGP lab and secure an agreement from the DGP faculty member for that student to join the lab for their thesis work. Prior to agreeing to take the student in their lab, the faculty must agree to assume the full financial and academic responsibilities of a thesis advisor.

Before approving any rotation and formal transfer, the DGP Office will review the student's academic credentials to determine whether the student meets admission standards. Students wishing to transfer must be prepared to provide letters of recommendation from their home department. The student must agree to have the DGP Office and faculty advisor contact the home department for information on the student's academic or scientific performance. The DGP reserves the right to deny permission to rotate or join the program.

Students beyond the first year may also apply to transfer to the DGP. Potential transfer students should first discuss this possibility with DGP Office and follow the procedure outlined above. The DGP does not provide funding for rotations or trial periods prior to transfer.

Second Year of Study

1. Course completion

During the second year of study in the DGP, students will complete any remaining courses to a total of nine units.

Second year DGP students must also complete the course on Responsible Conduct of Research (*DGP 494 Colloquium on Integrity in Biomedical Research, Section 1*). This is a zero-credit course and does not count towards the 9 required units. It is offered in the fall quarter.

2. Qualifying examination

The DGP requires that all students seeking to enter PhD candidacy must pass a Qualifying Exam.

Students with a GPA below 3.0 at the end of the winter quarter of Year 2 will not be allowed to take the Qualifying Exam, and the Program Committee will evaluate the student's overall performance in the DGP to determine suitability to continue in the program. Dismissal from the DGP may result. If the student is permitted to continue, the Qualifying Exam will be delayed. The student will be allowed one or two quarters to raise their GPA above 3.0.

The goal of the Qualifying Exam is to evaluate the student's qualifications to enter PhD candidacy. The DGP Qualifying Exam will occur in the spring of Year 2 and consist of 1) a written thesis proposal 2) an oral defense of the thesis proposal to the thesis committee. The thesis proposal will be in the format of an NIH NRSA grant application.

To pass the exam, students must demonstrate:

- 1) A knowledge base suitable to the work they are proposing, including an intimate knowledge of their specific area of research as well as in-depth knowledge of their field.
- 2) An ability to formulate a testable hypothesis, outline a set of specific aims needed to test the hypothesis, and propose reasonable approaches to achieve those aims.

2a. Formation of the Dissertation Committee

Each student will form a thesis committee in consultation with the advisor that will also serve as their qualifying exam committee. This committee will be instrumental in directing the thesis research over the next few years. Committee members should be chosen for their ability to help facilitate and evaluate the thesis research. The names of the thesis committee members, the committee chair, and the date of the qualifying exam oral defense must be submitted to the DGP Office for approval by March 1 of year 2.

The committee must consist of at least four faculty members (including the advisor), though committees of five members are encouraged and six are permitted. Student with co-mentors must have at least five members on their committee. Two of the thesis committee members, including the Chair, must be on The Graduate School list of Graduate Faculty. The committee must also include faculty from more than one academic department or division. Inclusion of faculty from other institutions is encouraged – those faculty may join committee meetings virtually. Faculty members with appointments in clinician-educator, team scientist, or research faculty tracks are eligible for membership on dissertation committees but cannot serve as Chair and are usually not Graduate Faculty. At least two of the committee members (including the advisor) should be drawn from DGP faculty. If a faculty member leaves the committee for any reason, that member should be replaced as soon as possible to maintain a committee of at least four members. If a committee member leaves the university, they can remain on the committee and no changes are needed so long as the committee still meets the minimum requirements. Any changes to the thesis committee (additions, deletions, or replacements) must be approved by the DGP Director.

The thesis committee chair will be a committee member (not the advisor) chosen by the student after consultation with the advisor and with approval of the full committee. The chair will be chosen prior to the first committee meeting. The chair must be a member of the DGP faculty and preferably a more senior member of the DGP faculty. Primary duties of the Chair include 1) directing meetings of the committee, 2) approving summary reports of all committee meetings on behalf of all committee members, and 3) transmitting a copy of these reports to the student and/or DGP Office.

Potential conflicts of interest may exist for committee members who are close family members of the advisor (i.e., spouse, children/parents, or siblings). For this reason, the DGP will not allow a close family member of the advisor to serve as committee chair. We urge students to be cautious about asking a close family member of the advisor to serve on the committee. There may be cases where a close family member may have appropriate expertise, but there could exist a potential or perceived conflict of interest of this committee member in the case of a conflict between the advisor and the student.

If a student joins a new lab after having passed the qualifying exam, they must form a new thesis committee and present a thesis proposal within six months of joining. The thesis proposal should be the same format, but the thesis proposal meeting will not be a qualifying exam.

2b. Overview of Qualifying Exam requirements and expectations

Timeline:

Each year, the precise calendar dates will be communicated in advance to students and faculty by the DGP Office. Approximate dates are below. Dates may be adjusted 1-2 days in either direction to accommodate the calendar.

- March 1** – The student will enter their committee members (and designate committee chair) in the TGS [Graduate Student Tracking System](#) (GSTS)
- April 1** – The student will email the date of the first committee meeting to the DGP Office
- No less than 2 weeks before the Committee Meeting** – Students will email the written proposal to committee and to the DGP Office
- July 1** – Student must complete their oral defense

Students who fail to turn in the written proposal two weeks before the meeting or fail to hold the thesis proposal meeting by July 1 will be placed on probation. Students encountering extreme difficulties in scheduling must notify the DGP Office well in advance of the April 1 deadline. Failure to meet this deadline, or violations of other DGP policies, may result in dismissal. Failure to attend a scheduled oral exam will place a student on probation and may result in failure.

The written qualifying exam will be passed through plagiarism detection software to verify the originality of the work. Students with knowledge of such cheating should report violations to the DGP Office.

Testing accommodations for students registered with [AccessibleNU](#) must be communicated to the DGP Office well in advance of exam start. Students with emergencies that impact their ability to complete the exam must notify the DGP Office as soon as possible.

Feedback

Students are allowed to receive feedback on the written document as well as their presentation to the committee for the oral defense. Students may use previous proposals that they have written (for training grants or fellowship applications). Although the student is allowed to receive feedback, the proposal should still largely be the student's work. **The student will write a contribution statement on the cover page of the exam, detailing the contribution of others to the work. As an example,**

“Aims were designed collaboratively between [student] and [advisor]. [Student] wrote the majority of the proposal with input of [advisor] on experimental design. [Advisor] and [senior lab member] edited a draft of the proposal and [student] completed the final draft using their suggestions.”

Written Document

The document is intended to be an NRSA-style proposal.

A. Proposal formatting

Overall Page limit — 1+6	
Specific Aims Page	1 page
Background, Significance, Innovation, Preliminary Results & Research Plan (including integrated figures and figure legends)	6 pages
References	Not counted in 7-page limit

Page and Font Formatting

- Acceptable fonts include Arial, Garamond, Georgia, Helvetic, Palatino Linotype, Times New Roman, Verdana.
- Font size must be 11-pt or larger (smaller text in figures, graphs, diagrams, and charts is acceptable if it is legible when the page is viewed at 100%). Some PDF conversion software reduces font size. It is important to confirm that the final PDF document complies with the font requirements.
- Type density must be no more than 15 characters per linear inch (including characters and spaces).
- Line spacing must be no more than six lines per vertical inch.
- Text color must be black (color text in figures, graphs, diagrams, charts, tables, footnotes, and headings is acceptable).
- Provide at least one-half inch margins (top, bottom, left, and right) for all pages.

Specific Aims page: The Specific Aims should succinctly describe the general area of study, the main question(s) addressed in the experimental aim, the rationale behind the choice of this experimental approach, and the significance of the study. Describe the problem being addressed (WHAT), its significance (WHY) and your overall approach to achieve your goals (HOW). Describe your hypothesis and the specific goals and approaches you will take to achieve the goals. This section should delineate (usually as numbered statements) what SPECIFIC goals your proposed experiments will address. An appropriate rule of thumb is that all the proposed aims should be independent tests of the overarching, central hypothesis. Aims should be of sufficient independence that one does not rely on the outcome of another. The Specific Aims page should be able to stand alone, and the reader should have a good sense of the proposal after reading just the Specific Aims page.

Background, Significance, Innovation and Preliminary Results

1 - 3 pages - Provide sufficient background for the proposal, in a clear, concise manner, so that the reader will not need to read the original papers. Provide strong rationale for why the proposed research is important and significant. This will usually be a link to human health and disease but may also be advances in technology or basic molecular understanding. Tell the reader what has been accomplished, what is still not known, and point out what is novel and technically and/or conceptually innovative in the proposal. In doing so, set up the context of what still needs to be accomplished in your area of interest that your proposal will address. Provide supporting evidence (your own preliminary data or those of your lab) that led to the hypotheses and that suggest the approach is logical and likely to succeed. The preliminary data figures and figure legends must be integrated into the text. The figure legends can be of smaller font than the text of the proposal (10-pt).

Towards the end of this section, the student should focus the reader's attention around one key question (the one addressed in the proposed aims), and the student should put forward a hypothesis – an unproved statement – as a premise for the proposed experimental aims that address this question.

Research Plan

3-5 pages - The research plan should describe the experiments used to achieve each one of the specific aims. The described experiments should be organized around a clearly stated hypothesis for each aim and/or subaim. Although the precise format of this section can vary, students should discuss: 1) the rationale/logic behind each major aim or sub-aim (why are you doing this experiment? What do you hope to learn from it? Why is this important to know?); 2) the experimental or methodological approach (overall design, rather than routine experimental details); 3) expected/anticipated results, interpretations, conclusions and their significance; 4) potential pitfalls; and 5) alternative approaches. Give careful thought to and describe significant controls and control experiments. In cases where innovative technologies will be used, describe the plan in sufficient detail so that the reader can evaluate it. A timetable and ordering of priorities are also a good thing to include.

Students should strive to ensure that the document meets the requirements for rigor and reproducibility expected in fellowship applications set by the NIH. The research strategy section should describe rigorous, well-controlled experiments that consider all relevant biological variables, use authenticated biological and chemical resources, and apply appropriate statistical tests for data analyses.

Students are encouraged to create original figures that present models or summaries. Students may also include preliminary data in this section to support the proposed experimental design, their technical capabilities, etc.

References

To ensure in-depth knowledge in the proposed field of research, students are required to read at least 50 of the most important papers in the field of interest as a necessary antecedent to writing the proposal. If such papers are not referenced in the document (as may occur in some cases), they should be placed in a distinct reference list immediately following the bibliography.

Submission of the exam

Submission of the qualifying exam written document after the stated deadline may result in a Failure of the exam. All files should be submitted as PDFs. Submitted documents that cannot be opened on DGP computers or do not meet the format instructions may also result in a Failure.

Once submitted, all qualifying exam documents will be analyzed by the DGP (using software available in Canvas or other sources) for plagiarism. Plagiarism from any source, either published or unpublished, is prohibited. This includes, but is not limited to, the work of other students in classes, qualifying exams, or thesis proposals. Students who submit documents that contain substantial plagiarism may be subject to a failure on the qualifying exam. In addition, any case of alleged plagiarism involving a student in DGP will be referred to the Associate Dean for Graduate Student and Postdoctoral Programs at TGS according to the policy [here](#).

Oral Exam

The total time for the oral exam is typically two hours but may go longer, so students should reserve a room for three hours when scheduling the meeting with the committee, virtual meetings are permissible if agreed to by all participants. The student will prepare a presentation (20-25 minutes) that will generally follow the outline of the written document.

- A. Introduction – focus the audience's attention on the broad/general question(s) early in the talk.
- B. Provide strong and polished overview of the present state of the field of interest while emphasizing significance/importance of this research.

- C. Identify key questions in the field and explain the rationale behind focusing on a specific question.
- D. State your hypothesis.
- E. Explain your experimental approach, expected results, pitfalls and alternative strategies, etc.

Students are welcome to show their own preliminary data as well as appropriately cited figures or data from the published literature or their lab.

Questions during the oral exam may be comprehensive in nature to allow the committee to ascertain whether the student has mastered the knowledge base required to conduct the proposed experiments and to understand the background and significance of the proposal. The Committee will very likely ask questions throughout the talk, but they also may save questions until the end. ***The student should be prepared to answer questions that relate to their research area as well as to the techniques they propose using, papers they cite, and other areas of research that may inform or be informed by their work.*** The research advisor(s) may not ask or answer questions during the examination unless asked directly by another committee member.

Committee Conference:

Both at the beginning and after the presentation and questioning has concluded, the student will be asked to leave the room and the committee will discuss the written document and/or oral exam. The committee will then decide whether the student has demonstrated sufficient knowledge in the general area of research and of the proposed experiments.

Expectations:

A. The document should be the best paper written to date in a student's academic career.

B. The questioning in the exam is expected to be rigorous because the area of study is the student's chosen field of research and thus the student should be the expert in the room on the subject. Students should be aware that they may be asked questions to test the limits of their knowledge and that not every question has a known answer.

Evaluation of Performance:

The DGP Qualifying Exam evaluation system allows the committee to provide detailed and direct feedback to the student and advisor. All comments will be summarized by the examination committee chairperson and provided to the student and the DGP Office. The evaluation, as recorded on the form, will address the criteria below.

Criteria for Grading the Written Examination

Background, Significance, and Innovation

- Is the background concise and relevant to the proposal?
- Is the significance of the work clearly defined?
- Is the relevant literature reviewed and critically evaluated and are primary references (as opposed to review articles) cited where appropriate?
- Is the proposed project technically and/or conceptually innovative?

Preliminary Data

- Is there preliminary data from the student or the student's lab to support the main hypothesis of the proposal? If not, is it well supported by the literature?
- Is there evidence that the student and/or the student's lab has the appropriate expertise to conduct the proposed experiments? If not, is there a plan for collaboration?
- Are the data presented of high quality?

- Please note: As the exam is conducted before the end of the second year, extensive amounts of preliminary data are not required. Rather than focusing on the amount of preliminary data generated by the student, the committee should focus on how well the preliminary data (whether from the student or the lab) support the proposed project and their quality.

Experimental Aims

- Is there a clearly stated and acceptable hypothesis?
- Do the proposed experiments adequately test the hypothesis?
- Does each of the experiments have a rationale?
- Are the proposed experiments feasible, properly controlled, and of reasonable scope?
- Are the experiments prioritized and do they follow a logical progression?
- Does the proposal predict all potential outcomes of the experiments?
- Does the proposal address possible pitfalls, and are alternative experimental approaches proposed when necessary?
- Are the experiments merely descriptive or do they address mechanism?

Written Communication Skills

- Is the proposal clearly written and carefully edited, and does it comply with the conventions of proposal writing?

Rigor and Reproducibility

- Does the document meet the requirements set by the NIH for rigor and reproducibility?
- Does the research strategy section describe rigorous, well-controlled experiments that consider all relevant biological variables?
- Do experiments use authenticated biological and chemical resources?
- Are appropriate statistical tests for data analyses applied?

Additional Criteria for Grading the Oral Examination

General

- Does the student possess a fund of knowledge, both specific and general, that would be expected of a graduate student who has completed the first two years of classes in the student's chosen field?
- Is the student able to modify the proposal considering criticisms and suggestions of the committee?

Background, Significance, and Innovation

- Is the student familiar with and able to critically evaluate the pertinent literature?
- Does the student have an appreciation of how the proposal relates to the current state of the field?
- Is there a convincing argument that the proposal is technically and/or conceptually innovative?
- Is the student able to respond to questions that draw on the background of the proposal or the published literature?

Experimental Aim

- Is the student able to clearly state an acceptable hypothesis?
- Is the student able to describe experiments that adequately test the hypothesis?
- Does the student understand the rationale for each of the proposed experiments?
- Does the student understand the technical aspects of the proposed experiments as well as their feasibility and scope?
- Is the student able to design appropriate controls?

- Is the student able to anticipate the outcomes of the experiments and design alternative experimental approaches when appropriate?
- Is the student able to respond to questions about the experimental approach, outcomes, pitfalls and alternative approaches?
- Is the student able to modify experiments or propose new ideas in response to questions from the committee?

Oral Communication Skills

- Is the student able to engage in a positive scientific discussion with the committee?
- Is the student able to verbally express sophisticated scientific concepts?

Possible Qualifying Exam Outcomes

Based on both the written proposal and the oral defense of the written proposal, the qualifying exam committee will assign one of these four outcomes: pass, incomplete, remediation, or fail.

I. A grade of **Pass** means no additional work is required and indicates that the student has:

- 1) written and defended a proposal that meets the criteria described above,
- 2) mastered sufficient skills in experimental design, scientific writing, and public speaking such that further examination is not required, and
- 3) demonstrated sufficient knowledge in both the narrow and broad fields of their research.

In this case, the committee will recommend that the student be admitted to candidacy.

II. A grade of **Incomplete** is assigned when the examining committee feels a student has deficiencies that can be corrected by the student within a short period of time. Such deficiencies may lie within the written and/or oral sections of the exam. The committee may request resubmission of the written proposal, reexamination with an oral defense, or both. The exam committee chair will provide clear instructions for correcting identified problems and specify a due date (not to exceed one month from oral exam) for these corrections through the exam evaluation form. Students are encouraged to talk with any or all members of the examining committee if there are any questions about the problems to be addressed. Upon further evaluation, the Incomplete grade will be changed to either a Pass or Remediation.

III. A grade of **Remediation** is assigned when the examining committee feels the student does not demonstrate a minimum proficiency in the written proposal, oral defense, or both. This grade implies that the student cannot correct the identified deficiencies without extensive remedial training. Student and Advisor will still submit a remediation plan for approval by the Program Committee within two weeks of being notified of Remediation requirement. The remediation plan should include identification of the critical deficiencies as well as a plan for correcting them. It should include additional training with the advisor or advisor-surrogate and may include other training requirements such as additional coursework. Time frame for remediation will be no more than 6 months. If the Program Committee finds remediation plan inadequate, they can stipulate additional requirements. If Advisor does not support student remediation, or the student and/or advisor do not agree to meet remediation requirements stipulated by the Program Committee, the student will be assigned a grade of fail and dismissed from the program.

After remediation, the student must pass the Qualifying Exam outright (no Incomplete) on the second attempt. The Program Committee will determine whether the second exam document will be written on the student's other submitted topic if that topic was approved by the committee. If the second topic was not approved, or if the Program Committee requires, the student will submit two new topics for approval. The examining committee for the second exam may consist of up to two original members with new member(s) to be named

by the DGP. In addition, the exam will be monitored by a member of the Program Committee. Failure of the exam on the second attempt will result in dismissal and no appeal to DGP will be allowed.

IV. A grade of **Fail** will be assigned in the following circumstances:

IV-a. Remediation process fails

If the Advisor does not support student remediation, or the student and/or advisor do not agree to meet remediation requirements stipulated by the Program Committee, then the student will be dismissed from the program.

IV-b. After the remediation process

If the examining committee feels the student does not demonstrate a minimum proficiency in the written proposal, oral defense, or both after the remediation process is completed the student will have failed the exam.

IV-c. Severe academic integrity violations or significantly late or improper submission of the written document

Under these circumstance, students and advisors will need to appeal to the Program Committee for permission to retake the exam. If the appeal is granted, the Program Committee will determine whether the student will write a document based on the second topic or will be asked to submit new topics. As this is the first oral exam for the student, a grade of Incomplete will be allowed. Nevertheless, failure of the exam on the second attempt will result in dismissal and no further appeal to DGP will be allowed.

In cases in which the three exam committee members do not reach a unanimous decision on Pass or Fail, the committee members will submit their comments to the exam chair, who will then assemble a detailed final report indicating the votes and opinions of the committee members. The final decision on the outcome of the exam will be made by the Program Committee, after reviewing the report from the exam committee. In such cases, the DGP will communicate to the student and advisor the decision and will pass on the committee report. Students who are given a Pass without a unanimous exam committee vote will be encouraged, with input from their advisor, to develop a plan to address any deficiencies identified by the committee.

Third Year of Study and Beyond

1. Admission to doctoral candidacy

Admission to the DGP and TGS does not constitute or guarantee a student's admission to candidacy for the PhD degree. Admission to candidacy is contingent upon the recommendation of the student's department or program and approval of the Graduate Faculty.

DGP students typically enter candidacy by the fall quarter of their third year. Admission to candidacy requires completion of at least eight graded courses and passage of the Qualifying Exam. Following admission to candidacy, each student typically spends two or more years conducting research and writing and defending a thesis before earning the PhD.

2. Student seminar requirements

Developing oral presentation skills is an important component of graduate student progress. During their time at NU, DGP students must present:

- a. One full (30-60 minute) seminar that is advertised and open to a broad audience. These seminars typically occur as part of a departmental or program-related seminar series.
- b. Either a second full seminar **OR** at least three talks of shorter duration presented to a limited audience. These could include, but are not restricted to, short talks at national or international meetings, talks in interdepartmental groups based on specific research topics research groups in departments or divisions, etc. One short talk may be substituted for an external poster presentation.
- c. A final, formal openly advertised seminar to publicly defend the thesis.

Students must fulfill the requirement before graduation.

3. Teaching responsibilities

Teaching is an important aspect of graduate training, as most scientists are likely to work in teaching environments throughout their professional lives. Students are required to serve as teaching assistants for at least one quarter during their studies. Teaching assignments may be in either undergraduate classes on the Evanston campus or in graduate classes on the Chicago campus. Assignments are made by the DGP Associate Director in consultation with course directors. Student preferences for teaching opportunities will be solicited and considered before assignments are made. The teaching assistantship usually occurs in the third year of study. Students who fail to satisfactorily complete the teaching assignment may be placed on probation by the DGP. The student will be given a new assignment by the DGP Director. A second failure to complete the teaching assignment may result in dismissal.

4. Annual thesis committee meetings

Following admission to candidacy, satisfactory progress in thesis research is monitored in several ways. Foremost, the advisor will meet with the student on a regular basis, and the student should present research progress in frequent lab meetings. Students should seek specific evaluation, feedback, and direction from their advisors on a regular basis to monitor their own progress.

Students are required to meet at least once each year (within a 12-month period) with their dissertation committees in years 3 and 4. Starting in year 5, students are required to meet every 6 months to ensure progress towards graduation. The student is responsible for ensuring that the DGP Office receives a copy of a complete Progress Report, which includes 1) the Committee Meeting Report, the student's 2) research summary, 3) updated CV, and 4) Individual Development Plan after every committee meeting (IDPs are only required once per 12-month period). The research summary, CV, and IDP should be submitted to the dissertation committee at least one week before the committee meeting. After each dissertation committee meeting, a committee representative summarizes the discussion and recommendations of the committee, and the committee chair signs the DGP annual committee meeting report form. This annual progress report is forwarded to the DGP Office and kept in the student's file. Both student and advisor should also keep a copy of the report. The written meeting report will serve as the official programmatic acknowledgement and notification of adequate academic/research progress to the student, the advisor and TGS.

Students and their advisors will review and update their Individual Development Plan (IDP) each year and submit a copy to the DGP along with the annual committee report form.

Beginning in year four, students will schedule a time to meet privately with the DGP Assistant or Associate Director. These short annual meetings will provide students a confidential opportunity to discuss research, academic, professional, or personal issues. They will also help the DGP collect important feedback on the thoughts and concerns of students.

Any student who does not hold a committee meeting in each 12-month period following the thesis proposal meeting will be subject to probation by the DGP. Permission to delay the meeting beyond the 12-month deadline requires permission from the DGP Director.

5. Refresher course in Responsible Conduct of Research

Students remaining in the DGP during a sixth year of study will be required to attend a refresher course in the Responsible Conduct of Research.

Failure to make adequate academic progress

Students who fail to make adequate progress at any stage are subject to dismissal. The Program Committee may evaluate a student's performance in the program at any point.

1. Progress prior to qualifying exam and/or thesis proposal

Following the rotation period, students enter a thesis lab. As stated above, the lab head at this point becomes the student's primary advisor. Research advisors bear the main responsibility for monitoring the student's research progress and academic training, although adequate progress in course work (GPA at or above 3.0) during this period will be monitored by the Program Committee. Before the formation of a thesis committee, the advisor, perhaps with input from other lab members, will evaluate the student's progress in the lab. As most students are inexperienced at this point of their training, efforts should be made by the advisor to meet regularly with the student to clearly communicate all research expectations and to carefully monitor progress.

If an advisor determines that a student has failed to make adequate progress, the advisor should document specific failures in writing, meet in person with the student and communicate the necessary changes that will satisfy a determination of adequate progress. A copy of this document should be transmitted to the DGP. A reasonable time frame, such as three months, should be provided for the student to make corrections in their research progress. If after this period, the advisor determines that changes or progress are not adequate, the advisor will notify the DGP and meet with the student to inform them of the desire to dismiss the student from the lab. If an advisor feels that a student who has been dismissed from the lab presents severe problems that will jeopardize completion of the PhD in any lab, they will communicate these concerns to the DGP. The grounds for dismissal and any additional faculty concerns will be reviewed by the Program Committee. The Program Committee may choose to dismiss the student from the DGP or may allow the student an opportunity to secure a new thesis lab.

In cases where the Program Committee approves, the DGP Office will aid the student as much as possible in finding a new home. The student has three months to secure a new lab home or be subject to possible dismissal from the DGP.

2. Progress following thesis proposal

It is the thesis committee's responsibility to evaluate a student's work and to report to the DGP whether the student is making appropriate progress towards completion of the PhD. In a case where the committee determines that a student is not making adequate progress appropriate for the stage of their graduate career, the committee will complete an evaluation report that indicates the specific deficiencies.

Following a committee meeting report that indicates a lack of progress toward completion of the degree, the advisor will inform DGP in writing of the problem and submit copies of other supporting documentation. Such documentation might include, but would not be limited to, written communication with the student outlining the problem areas, email correspondence between the advisor and student, notes of private or lab meetings at which the student was informed of problems with their work, or any other such materials that notify the student of problems in their performance and progress. If such documentation does not exist, at this time the advisor should notify the student and the DGP in writing of any problems in their performance and progress.

The advisor will meet with the student's dissertation committee in the absence of the student to formulate a plan for improvement. This plan will be communicated to the student in writing and should include the

scheduling of another committee meeting within three to six months. The student may meet with the committee members in the absence of the advisor to learn firsthand the expectations of the committee. Importantly, such a meeting allows the student to articulate their view of the problems, some of which may be due to the advisor.

If at the next full meeting (within six months) the committee determines that the student has failed to make adequate progress, the committee will complete an evaluation report indicating the failure. The advisor will notify the DGP Director of their intent to dismiss the student from their laboratory. The DGP Director will make sure the appropriate documentation is in place and procedures have been followed. The advisor can then elect to dismiss the student from the laboratory without further obligation.

The DGP Director will advise the student on their options. A student who is dismissed from a lab for academic reasons may petition the Program Committee for permission to seek a new thesis lab home. The Program Committee may choose to dismiss the student from the DGP or may allow the student an opportunity to secure a new thesis lab. Where appropriate, the Program Committee may allow a student up to three months to find a new lab and thesis advisor. Failure to secure a new lab in that time frame will result in dismissal from the DGP. The TGS policy on adequate academic progress and dismissal (exclusion) can be found [here](#).

3. Satisfactory academic progress after completing experimental thesis research

A student who has completed all experimental research and is no longer working on the thesis project may in some cases depart the lab prior to completing all requirements. Typically, such students will be in the process of writing the dissertation. A student who is working full time on their thesis and/or a manuscript is not considered to have left the lab. The advisor and student must notify the DGP that the student plans to leave the lab before completing all requirements. Before leaving the lab, the student must obtain "Permission to Write" from their thesis committee. A student who does not have a first author publication at the time of leaving the lab must, at a minimum, submit a complete manuscript draft to their advisor before leaving the lab. The student should remain in contact via email with the advisor and the DGP Office to update progress on their work. The student will not be eligible for stipend or salary from the lab, and must remain registered in TGS 512 during fall, winter, and spring quarters. TGS does not require registration in summer quarter; however, the summer quarter is counted in the time limits below.

The student must complete and defend the dissertation within two quarters (six months) of the date on which a student leaves the lab. If the student does not complete the thesis requirement by the six-month deadline, they will be considered to not be making adequate academic progress and will be placed on probation by the DGP for up to two quarters. If the student has not completed the thesis requirement by the end of the probation period, they will be subject to dismissal from the program.

If the student does not have a first-author publication accepted by six months after leaving the lab or six months after successfully defending their thesis, the student must re-convene the thesis committee to discuss progress towards publication. The thesis committee should at this time discuss a petition to graduate without first-author publication if acceptance does not seem imminent. If the student still does not have an accepted publication by one year after leaving the lab or successfully defending their thesis, the thesis committee will reconvene with a Program Committee representative present. The Program Committee representative will be there to discuss the petition process to graduate without a first-author publication if acceptance is not imminent. Program Committee representative will also report back to the Program Committee on the progress of the student's publication.

The Program Committee will discuss the student's progress towards publication and make a recommendation to the student and the committee. The Program Committee may choose, but is not limited to, the following options: 1) to recommend that the student and advisor and/or committee submit a petition to graduate without a publication; 2) to recommend the committee with the Program Committee representative meet again in a proscribed amount of time (i.e., 3-6 months); 3) to place the student on academic probation for a period of 2 quarters (6 months) for failure to make satisfactory academic progress. If a student is placed on probation and

the publication requirement is not met or an exemption is not granted by the end of the probation period, the student may be dismissed by the Program Committee.

Probation

The DGP will place students on **probation** for various violations of program policies. These include but are not limited to:

- Failure to obtain academic advisor approval for course selections during the first year
- Failure to complete any required core class
- Failure to maintain a minimum GPA of 3.0
- Failure to adhere to deadlines for establishing and beginning a rotation
- Failure to properly submit the qualifying exam topics or proposal by the stated deadlines
- Failure to complete thesis proposal meeting by the stated deadline
- Failure to fulfill the seminar requirement
- Failure to adequately fulfill the teaching requirement
- Failure to hold an annual thesis committee meeting
- Failure to complete the dissertation requirement within six months of leaving the lab
- Failure to provide advisor with draft manuscript within six months of leaving the lab
- Failure to respond in a timely fashion to communications from the DGP, thesis committee, or advisor

Any student who engages in behavior that is contrary to the professional conduct described in the AAMC Compact, the DGP Student handbook, or the Northwestern University Student Handbook, may be subject to probation by the DGP. The Program Committee may evaluate a student's performance in the program at any point. Dismissal from the DGP is a possible outcome for any student who is the subject of DGP probation.

A student whose overall grade average is below B (3.0 GPA) or who has more than three incomplete (Y or X) grades is not making satisfactory academic progress and will be placed on academic probation by TGS. When a decision to place a student on probation is made by TGS, the student will be notified in writing, along with the program's Director of Graduate Study, and will be given at most two quarters (not including summer quarter) to resume satisfactory academic standing. TGS notifies students of probation status on a quarterly basis. Other issues that can result in academic probation by TGS can be found [here](#).

Student Conduct Issues

1. Disruptive behavior

As stated in the *Compact Between Biomedical Graduate Students and Their Research Advisors*, students are expected to maintain a high level of professionalism, self-motivation, engagement, scientific curiosity, and safety and ethical standards. DGP students are also subject to the code of conduct detailed in the [Northwestern University Student Handbook](#).

If student acts in a manner that disrupts normal lab, classroom or cohort function, the advisor and/or affected parties should notify both the student and the DGP Office in writing of the problem behavior and request a meeting of the student, advisor if needed, and DGP representative(s) to identify ways to remedy the problem. If appropriate, support staff from another University office(s) can also be included in this meeting. If, after this meeting, the student does not correct the behavior in a timely manner, the advisor may notify the DGP Director in writing of the details of the continuing problems and submit a petition for permission to dismiss the student from the lab. The DGP Director will meet with the student, the advisor, and any relevant parties to make a final determination on dismissal.

If a student's behavior is more than simply disruptive, additional actions may be warranted. If a student is being abusive or threatening (in person or through written communications) or if a student acts in a violent manner towards people or property, the advisor will notify the DGP and may immediately temporarily exclude the student from the laboratory. Exclusion from the lab will remain in place pending further investigation and possible disciplinary action by the DGP, including permanent dismissal from the lab. The advisor and/or the DGP will also contact appropriate University officials, including the Behavioral Consultation Team, University Police and/or the Dean of Students Office, to investigate the behavior and help determine any appropriate sanctions to ensure that the student's behavior does not further impact any members of the lab or broader community. As outlined in the Northwestern University Student Handbook, consequences for such behavior may include dismissal from the University.

A student who is dismissed from a lab for the behavior described above reasons may petition the Program Committee for permission to seek a new thesis lab home. Upon reviewing the relevant information, the Program Committee may choose to dismiss the student from the DGP or may allow the student an opportunity to secure a new thesis lab. When appropriate, the Program Committee may allow a student up to three months to find a new lab and thesis advisor. Failure to secure a new lab in that time frame will result in dismissal from the DGP.

Any faculty, students or staff who observe behavior that disrupts the university community should notify the Behavioral Consultation Team, the DGP Office and/or TGS immediately. Cases in which a student's communications or actions suggest that the student may harm themselves or others will be referred to the Behavioral Consultation Team and/or Northwestern University Dean of Students Office.

2. Absence from the lab

DGP students should consider their participation in their own training as a full-time commitment. Each student should develop appropriate work habits (work hours during weekdays, weekends, nights; arrival time, departure time; meeting attendance, seminar attendance, etc.) that are set in consultation with their thesis advisor. Advisor and lab expectations for work habits should be discussed upon joining the lab in conjunction with a review of the *Compact Between Biomedical Graduate Students and Their Research Advisors* and the completion of the IDP.

See the [Vacation and Absence Policy](#) below for more details. Extended absences from the lab that are not approved by the advisor may result in termination of stipend during the absence and can also be grounds for dismissal from the lab.

3. Research misconduct

All students are expected to adhere to the highest standards of ethical research. If a student's advisor makes a formal allegation of research misconduct against a student to the Office for Research Integrity (ORI), and if ORI determines that an Inquiry Committee will be formed to review the allegations, the student's advisor may dismiss the student from the lab. If an advisor is informed that a student has been referred to ORI by another party and is the subject of an Inquiry or Investigation Committee, the student's advisor may dismiss the student from the lab. A student who is dismissed from a lab for misconduct allegations will be given up to three months to seek a new thesis advisor and lab home. Failure to secure a new lab in that time frame may result in dismissal from the DGP.

If ORI finds that a student has engaged in research misconduct, the student may be dismissed from the DGP. The student will also be subject to any sanctions determined by appropriate university officials.

Graduation Requirements

Detailed instructions for graduation and related forms can be found [here](#).

1. Publications

Sole first author

The awarding of the PhD from the DGP requires the student to have published (or have in press) at least one first author, peer-reviewed, original research paper in the primary literature (i.e., not a review article) that contains substantial data stemming from the student's dissertation research.

A paper that is submitted and reviewed (but not published or in press) can fulfill the requirement if the reviewers' and editor's comments indicate that only minor editorial revisions (formatting, additional discussion, reference corrections, etc.) are needed before acceptance. A submitted paper that requires substantial changes (e.g., additional experiments or resolution of disagreement between the reviewer(s) and the authors concerning experimental interpretation) will not fulfill the requirement. The student and advisor will submit the reviews and editor's comments to the DGP Office. Determination of whether the student has met the publication requirement with a paper needing minor revision will be at the discretion of the DGP Director.

Co-first authors

A paper on which a student is a co-first author will not automatically fulfill the requirement, but co-first authorship can meet the publication requirement in many cases. As with a sole author publication, the student's contribution should represent both a substantial amount of the work of the paper as well as a significant portion of the student's thesis. There are two characteristics of co-first author papers that will make approval likely: 1) if there are only two co-first authors, and 2) if the publication comes late in the student's career and represents a major portion of the thesis project. In all cases, approval requires that the student and advisor first explain to the thesis committee the student's contribution to the paper and the proportion of the thesis represented in the paper. If the thesis committee determines that the student's contribution meets the spirit of the requirement, they will petition to the DGP to allow the publication to meet the requirement. The thesis committee members should indicate their approval (or disapproval) to a petition by initialing the appropriate boxes on page 3 of the Thesis Defense form. Specific comments from the thesis committee may also be included in a petition package. Petitions to allow a co-first author publication to meet the requirement may be approved by the DGP Director or may be passed to the Program Committee.

Exemption from requirement due to extenuating circumstances

If the student has not met any of the above publication conditions at the time of the dissertation defense, the student and advisor, with agreement of the thesis committee, can petition the DGP Director and Program Committee for an exemption to allow the student to graduate prior to completion of the requirement. The petition should include a letter from the student and advisor providing a compelling explanation for why the body of work in the thesis has not been able to meet the publication requirement thus far, and specific plans for a successful publication. It is preferred that a manuscript has been submitted and gone through at least one round of review for the thesis committee to comment on the likelihood of publication after revision. The current manuscript draft, manuscript reviews and author rebuttals (if applicable), as well as a copy of the student's current CV should be included in the petition package. Unanimous consent of thesis committee is preferred but not required to submit a petition. The thesis committee members should indicate their approval (or disapproval) to a petition by initialing the appropriate boxes on page 3 of the Thesis Defense form. Specific comments from the thesis committee may also be included in a petition package.

The exemption petition package should be submitted via email to the DGP Office. As the Program Committee will need to meet for discussions, any petition must be submitted at least four weeks before the PhD materials submission date published by TGS for each quarter. The Program Committee expects that such exceptions will be granted only rarely.

A student with a paper under review who leaves the lab or university prior to completing the publication requirement will not officially graduate until all requirements are fulfilled.

2. Permission to write dissertation

The thesis committee will be responsible for determining when a student has met the research requirements necessary to submit a completed dissertation. This is a multistep process, as the committee meets at least once per year to monitor student progress and provide direction towards meeting research goals.

When a student and advisor determine that all or most of the experiments required of the thesis have been completed, the student will convene the thesis committee to request permission to write the dissertation. This is usually done within six months of the anticipated date of final completion.

The student will submit to the committee and to the DGP an outline of the proposed dissertation, including a list of the likely figures and tables. At the meeting, the student will present a comprehensive overview of the research they have accomplished and plans to accomplish prior to graduating. Based on the dissertation outline, the figure and table list and the oral summary, the thesis committee will determine whether the body of research is sufficient and consistent with a PhD degree or whether additional experiments are necessary. If additional work is required, the extent and nature of this work will be listed on the report form. In some situations, the remaining work may be judged to be so extensive or ill-defined that completion is not possible in the near future. The meeting will have three possible outcomes:

- (i) **Approval** —the completed work is of sufficient quality and significance to support a PhD thesis. This option will be used when the student's body of work is essentially complete. Signed approval from the committee will then be provided at the end of the meeting.
- (ii) **Conditional** —additional experimentation is necessary to complete a dissertation, but the student should be able to complete these experiments within the next six months. This option would be used when the student has already completed substantial and significant research but when a few experiments are required to bring the work to conclusion. Signed approval from the committee will be obtained after the additional work is completed or after the student provides an accounting of their attempts at completing the additional work and an explanation of why the additional work could not be completed. Committee approval at this stage may not require an additional meeting, although a follow-up meeting can be requested by any committee member prior to the student receiving signed approval.
- (iii) **Incomplete (Reschedule)** —The student's graduate work remains incomplete and considerable progress is necessary before a dissertation can be written. The meeting should be rescheduled once substantial progress has been made.

If a student does not yet have a first author publication in press at the time the thesis committee grants permission to write the dissertation, a plan for completing the publication requirement before graduation must be included on the committee report form. The plan should include the likely date of submission of a paper and indicate what will be the student's expected participation in any revisions for resubmission.

Note that even when "permission to write" has been granted, the committee reserves the right to withhold approval of the dissertation at the time of the defense meeting in cases where the committee decides that the student has in fact not completed required experiments.

Permission to Write may also be revoked prior to the defense if new information is discovered that was not known or available at the time of the meeting and would fundamentally alter the committee's decision to grant permission to write.

3. Dissertation and final examination

The student will list the thesis committee members on the Final Exam Form in the [Graduate Student Tracking System](#) (GSTS). If any members have been added or have left the committee since the thesis proposal,

approval must be obtained from the DGP Director. Note: research advisor(s) must be listed as committee members on the form.

Once the student's body of work is judged by the committee to be adequate for a PhD thesis and permission to write is granted, the student will complete the writing of the dissertation. Once the dissertation is finished, the student will convene the committee for the final defense.

The student must provide a final version of the dissertation to their advisor with sufficient time for feedback and editing before the scheduled defense date. The advisor must approve the final version before it is submitted to the committee. The student must then provide the committee with the final version of the dissertation at least two weeks before the earliest possible defense date. Once the student provides the committee with a **final, completed** document, the committee will:

- Evaluate the thesis to determine if it is acceptable in style and content to proceed to defense
- Convene a private meeting with the student for a discussion of the research and the dissertation
- Determine whether the student should present their final seminar to the university community
- Submit their decisions to the DGP and TGS via the electronic approval of the Final Exam Form in GSTS

This final committee meeting will consist primarily of a discussion of the written document and a discussion of the broad aspects of the student's work. Given that the student has presented the entirety of their work at the Permission to Write meeting, it is not necessary for the student to give a presentation reviewing all the work.

Committee members should convey any desired revisions to the dissertation to the student in writing and indicate an expected date for completion. If the dissertation requires more than minor corrections (typos, etc.), the committee members should not indicate their approval on the Final Exam form they are satisfied that the document is in the final form. Both minor and major revisions must be confirmed by at least one member of the committee (typically the student's advisor) and indicated by their approval of the Final Exam form in GSTS.

Note that the committee reserves the right at the time of the defense to withhold approval of the dissertation. This may include cases where the committee decides that the student has not completed required experiments, has submitted a written document that is insufficient in content or style, or has failed to provide an adequate defense of the work.

The DGP Office will review the committee's decision. If all DGP requirements have been met, the DGP Office will approve the student's graduation by approving the Final Exam form in GSTS. However, final approval may be delayed if the publication requirement has not been fully met.

A final thesis seminar is also required for graduation but cannot be presented without permission from the thesis committee. Students should expect to make any corrections to the written document that are suggested by the Committee before the public seminar.

Scheduling the final examination and the public seminar is the responsibility of the student and the members of the committee. The date of the examination should be early enough to allow the student sufficient time to meet the published deadlines for submitting the completed dissertation and all supporting materials to TGS.

All forms should be completed prior to, or at the same time as, the dissertation is submitted.

4. TGS requirements

Every candidate for the PhD degree must present a dissertation that gives evidence of original and significant research.

The TGS [Academic Calendar](#) provides the final dates for submission to TGS of the documents required to entitle a student to receive the PhD degree in June, August, March, or December. A student who wishes to submit a dissertation should file the required documents below. These forms should be submitted via TGS Forms in GSTS (see the Forms for Current Graduate Students page).

Application for Degree
PhD Final Exam Form

Students are encouraged to complete these additional forms:

[The Graduate School PhD Exit Survey](#)
[Survey of Earned Doctorates \(SED\)](#)

Dissertations are submitted electronically to TGS via ProQuest. Formatting instructions are available [here](#). If the dissertation does not conform to these instructions, it will not be accepted by TGS.

Once the dissertation is submitted, a Student Services Representative will review the formatting and confirm via email that the dissertation is acceptable or if changes need to be made.

5. TGS Dissertation Embargos and Acknowledgement Policy

Dissertation Embargos Policy: Doctoral dissertations may be embargoed upon request of the author and endorsement by the dissertation's director. For authors concerned with the publication issue, ProQuest and the University Library offer several embargo options to meet the needs.

Dissertation Editing Policy: All dissertators should consult with their advisors about appropriate forms of assistance before assistance is rendered. Dissertations should acknowledge assistance received in any of the following areas:

- Designing the research
- Executing the research
- Analyzing the data
- Interpreting the data/research
- Writing, proofing, or copyediting the manuscript

Failure to do so constitutes grounds for an academic integrity violation. This would normally be indicated in the acknowledgement section of the dissertation.

Related and Dual Degrees

Dual Degree Requirements

The DGP includes two dual degree programs leading to the PhD and Master of Public Health (MPH) or the PhD and Master of Science in Clinical Investigation (MSCI). Applications are accepted directly for the PhD-MPH program (L21PH) through the TGS on-line application. Applications for the PhD-MSCI (L22PH) are currently taken from DGP students starting their first year. Students in these dual degree programs are required to complete only six PhD courses. Credit for two electives is given for master's level classes. All other PhD requirements (qualifying exam, thesis proposal, dissertation, etc.) must be completed in the same time frame as PhD-only students. Students in these programs should check with the MPH or MSCI administrators for full details on current master's requirements. Further information about these programs can be found at [here](#) (MPH) and [here](#) (MSCI).

It is important to remember that students in L21PH and L22PH are admitted to formal dual degree programs, with the full expectation that they will complete both degrees. The PhD and MPH or MSCI are to be awarded simultaneously. Whereas a dual degree student who chooses not to complete the master's degree requirements will be allowed to continue in the DGP for completion of the PhD, any dual degree student who leaves the DGP before completing the PhD requirements will not be allowed to continue in the respective master's program. Students who complete the MPH or MSCI requirements will not be granted the master's degree prior to completion of all PhD requirements. Graduation will be simultaneous for both degrees, even in cases where the master's degree requirements are fulfilled in time for an earlier graduation date. Completion of the MPH or MSCI, however, may follow the awarding of the PhD. A student who withdraws from the dual degree program prior to completing the PhD requirements will not be allowed to continue with MPH or MSCI work, transfer to the MPH or MSCI programs, or receive the MPH or MSCI.

Students interested in pursuing a second degree that is not part of an existing dual degree program (i.e., ad hoc combined degree) should speak with the DGP Office to ensure that TGS and DGP policies do not preclude dual enrollment. See TGS policies [here](#) for additional information.

Students who are earning a Masters degree should consult with their Masters program for information on how to apply for the degree to be awarded. This should be completed ahead of the Masters degree completion form due date for the quarter in which they are graduating.

MSTP Requirements

Students who enter the DGP as part of the Medical Scientist Training Program (MSTP) are required to complete three PhD courses. All other PhD requirements (qualifying exam, thesis proposal, dissertation, teaching experience, etc.) must be completed. MSTP students will complete their qualifying exam and teaching requirement in their first year of graduate study. They will complete the thesis proposal in the fall quarter of their second year.

Master of Science Degree

The Driskill Graduate Program in Life Sciences provides a Master of Science (MS) degree option for students in good standing who, due to special circumstances, are unable to complete the PhD program. It is appropriate to acknowledge the accomplishments of these students, and the awarding of a master's degree will have a tangible benefit to their future employment and career prospects. A student seeking this degree, in addition to having successfully completed all required courses and having passed the Qualifying Exam, must have:

- 1) completed the thesis proposal process successfully,
- 2) held at least one annual thesis committee meeting after the thesis proposal, and
- 3) completed sufficient research towards their PhD to write a master's thesis.

Students who have not had a thesis committee meeting beyond their thesis proposal must convene their committee to present their research progress and request permission to petition for a master's degree.

Advanced students who are dismissed from their lab (see page 18-19) may either seek a new lab or petition for a master's, provided they meet the requirements above.

Any student considering this option must discuss the decision with their PhD advisor and members of their thesis committee before proceeding, as the master's committee will be drawn from members of the PhD committee.

Instructions

1. Petition

A student in good academic standing who wishes to obtain a terminal master's degree will first submit a petition by email to the Director of the DGP. The petition must include:

- A brief explanation of why the student does not wish to continue in the PhD program.
- An outline of the research that will be included in the thesis.
- The names of at least two members of their current PhD thesis committee who will serve as the master's committee. In most cases these names will include the PhD advisor, indicating the advisor's approval of the process.

The email petition should be copied to the master's thesis committee members.

The Program Committee will consider both the nature of the circumstances and the quality of the research in determining whether the student will be allowed to write a thesis and continue to seek the MS degree. Permission to pursue the degree will be only granted to a student whose body of research will reasonably result in a master's thesis.

In the absence of financial support by their PhD advisor, a student seeking the master's degree may petition the DGP for a maximum of two months stipend support.

Once permission to seek a master's degree has been granted, the student must complete and defend the dissertation within one quarter (three months) of the date of approval. If the student does not complete the thesis requirement by the three-month deadline, they will be considered to not be making adequate academic progress and will be placed on probation by the DGP for up to one quarter (three months). If the student has not completed the thesis requirement by the end of the probation period, they will be subject to dismissal from the program.

2. Graduate School Requirements

A student who receives permission to proceed from the Program Committee will use GSTS to:

- Complete the Application for Degree Form, choosing the MS option.
- Complete the Maters Completion Form, listing their committee members and thesis title.

3. Thesis and Oral Defense

A student who is granted permission will submit a master's thesis to a committee comprised of at least two members of their original PhD thesis committee. A member of the Program Committee will also read the thesis and participate in the oral defense. The thesis, approximately 25 to 50 pages, will include the following elements:

1. Abstract
2. Introduction with Background and Significance
3. Materials and Methods
4. Results
5. Discussion
6. References

The student must submit the thesis to the committee at least two weeks before a scheduled meeting in which the student will present their work and defend the thesis. The committee will then determine whether the written document and oral defense are sufficient to warrant the degree. Revisions to the document or

additional meetings may be required. Upon notification by the committee that the student has submitted a suitable thesis and passed the oral defense, the DGP Office will approve the appropriate master's completion forms and notify TGS. The MS will be awarded by TGS at the next graduation date.

Dual degree students (PhD-MPH, PhD-MSCI) who choose to leave the PhD will not be allowed to complete the corresponding master's degree portion of their dual degree but may petition for the general MS degree as detailed above.

The Graduate School Policies

Transfer Credits

TGS does not provide direct course credit for graduate level work completed at another institution. However, the DGP may reduce a student's required course load by a maximum of two courses based on suitable graduate courses. For consideration, such courses must have been taken within the last three years prior to enrollment at Northwestern, and a grade of B or better must have been earned. The DGP Office will evaluate the student's graduate transcript and the syllabi from relevant courses to make a recommendation to the DGP Director. In addition, the syllabi will be reviewed by the relevant DGP course directors to determine equivalency to DGP classes. Upon approval by the DGP, the student may be allowed to opt out of a maximum of two classes, either core or elective classes. To meet TGS's required number of letter-graded classes, the student will then be enrolled in DGP 499 Independent Study for a maximum of two units.

Registration

Per the continuous registration policy, all doctoral students must be registered at Northwestern University in each of the fall, winter and spring terms until all degree requirements have been completed, including dissertation submission to TGS. Any student not registered for TGS 500 or DGP 590 during a fall, winter, or spring quarter who is actively working towards degree completion must register for TGS 512. Students receiving funding in the summer quarter must also register for summer. Full-time registration is required for use of University facilities, access to the Student Health Service, and insurance coverage. Any alterations in the residency timeline can be managed through Leave of Absence requests.

Leaves of Absence

A DGP student who needs to interrupt their progress towards the degree may petition for a leave of absence. TGS policies on leaves of absence can be found [here](#).

Students should be aware that ongoing research projects require advanced planning and carry an expectation of steady progress. Communication between a student and advisor, both before and during a leave, will help minimize disruption of expected progress. A student who is considering applying for a leave of absence should discuss the leave with their research advisor at least 30 days before the anticipated start date. The student should also indicate, as accurately as possible, the anticipated date of return. This discussion will help the advisor make plans for changes in funding, continued progress of the project during an absence, required changes in personnel, etc.

For all three types of leave, the student must also notify the DGP and their advisor of the planned return at least six weeks prior to the expected return date. Students on leave are encouraged to keep in touch with their advisor on a regular basis, and to be responsive to communications from the DGP or the advisor.

A student who takes a leave of any length should be aware that the research project they are working on might be substantially changed by the time of the return. Return to the same project cannot be guaranteed.

Moreover, a student who is absent for an extended period may not be able to return to the same lab, due to changes in funding, personnel, or other unforeseen events in the lab. Any student on leave for an extended period will be allowed to return to the DGP and will receive financial support if they need to transition to a new lab home. This process typically takes three months or less.

Completion in Nine Years

TGS requires that all students successfully complete their Ph.D. within nine years of matriculation. Students who do not complete degree requirements by the established deadlines will not be considered in good academic standing and will be placed on probation. TGS registration policies and timeline can be found [here](#).

English proficiency requirement

All international PhD students whose primary language is not English are required to fulfill TGS's spoken English proficiency. Students may fulfill this requirement in one of 4 ways:

- **Score 26 or higher on the Speaking Section of the TOEFL iBT.** Students who score 26 (out of a possible 30) on this section of the TOEFL internet-based test fulfill the English proficiency requirement and are not required to participate in English proficiency testing at Northwestern.
- **Score 65 or higher on the Versant English Test.** The Versant test is administered to all incoming international PhD upon entering Northwestern. Those who score lower than 65 (out of a possible 80) are given the opportunity to re-take the test in a later quarter and continue to participate in Versant testing roughly every 6 months until they have fulfilled the English proficiency requirement. Based on Versant score, certain students may be required to participate in services offered by Northwestern's [English Language Programs](#). *Students who score 63 or 64 on two separate Versant tests will be considered to have fulfilled the English proficiency requirement.*
- **Score 50 or higher on the SPEAK test.** The SPEAK test is offered twice per year and is available only by department request. Students who score 50 or higher (out of a possible 60) fulfill the English proficiency requirement.
- **Pass a teaching demonstration at the conclusion of LING 480.** Linguistics 480, The Language of Teaching and Teachers, is a course co-taught by faculty from Northwestern's English Language Programs and the Searle Center for Teaching Excellence. It allows students to work on improving their English proficiency while preparing them to be effective teachers and TA's. Students who demonstrate the required level of English proficiency during a teaching demonstration at the conclusion of the course fulfill the English proficiency requirement.

Appeals to TGS

A student who is dismissed from the DGP for any reason may appeal the decision to TGS. To appeal a program decision, students should submit a request in writing to the attention of the Director of Student Services within ten days of the date of the program's final written determination of dismissal to the student and include any supporting materials at that time. If no appeal is filed within the ten-day appeal period, the program's decision becomes final and not subject to appeal.

Appeals are reviewed by the Dean of TGS (or their designate), who may request additional information from, or a meeting with, the student and/or program before making a final decision. The Dean's decision will be made within 30 days of the submission and will be communicated in writing to both the student and the program. When resolution cannot be achieved within 30 days, students and programs will be informed in writing of the delay and the final disposition will be achieved as quickly as possible. The Dean's decision is final in both

program and TGS dismissals except for academic dishonesty/misconduct findings, where the student has 10 days to appeal the Dean's decision to the Office of the Provost. This policy can be found [here](#).

Vacation and Absence Policy

The DGP recommends that each student be allowed two weeks of vacation time each year. Appropriate time on and around holidays is not counted in these two weeks. Additional time away from the lab should be negotiated with the advisor.

In all cases, students must discuss with and get permission from their advisor for any absences from the lab, including vacations, well in advance. Extended absences from the lab that are not approved by the advisor may be grounds for dismissal from the lab. Students requiring extended absences should apply for a Leave of Absence.

Students should notify their advisor in a timely manner when they cannot be in lab due to unexpected sickness or emergencies.

International Travel

Graduate students traveling internationally under university-sponsorship or support must abide by the health and safety requirements detailed by the [Global Safety and Security office](#). Students are required to purchase [GeoBlue Global Health Insurance](#).

Student Council

The DGP Student Council (StuCo) was formed in 2013 to give input and advice to the DGP Office and help set the agenda for student town hall meetings. Student representatives from years 1 through 5+ are nominated and elected at the beginning of each calendar year; each representative serves 2 years. StuCo meets with DGP Leadership at least once per quarter. Student town hall meetings, which are open to the entire DGP student body, are held at least twice each year.

StuCo's mission as envisioned by its members and DGP leadership is to 1) actively engage the student community to identify student needs or areas of concern, 2) advocate for the needs of DGP students by communicating regularly with DGP leadership, and 3) collaborate with DGP leadership when possible to generate new initiatives that address student needs or improve the training experience of students.

Financial Support

University Fellowships and Scholarship Regulations

Fellowships and scholarships are funded by general University appropriations, endowments, and other outside sources. All awards are based upon merit.

Students who receive fellowships or scholarships from Northwestern should be engaged in programs of study leading to the PhD degree. Every fellow and scholar in TGS must:

- inform TGS of any other sources of University-based support, including research assistantships,
- refrain from remunerative work, unless a written request for a waiver is approved by TGS after a thorough review of the circumstances, and
- adhere to all regulations as stipulated in the TGS Policy, Program and Course Catalog.

If any of these conditions is violated, financial support may be withdrawn by TGS or the DGP.

Fellows and scholars are not expected to teach or assist in laboratories in return for their awards, except when such duties are required of all doctoral students in the program. University support may be adjusted if a student receives an external award. A student who is offered both a University Fellowship and an external award is expected to accept the outside support and should consult TGS before a decision is made.

DGP Fellowships

DGP Fellowships support entering DGP students for the first 18 months of study and include tuition and stipend support as well as NU student health insurance.

Students who enter the DGP with funding of their own will be able to reserve one year of fellowship to be used at a later time. Such awards include but are not limited to an NSF GRFP award, a Fulbright Scholarship, or other national or international awards that pay all or part of the stipend and tuition.

Note on Tax Withholdings

Students can find information and tools for estimating tax withholdings [here](#).

Teaching Assistantships

The DGP may support a limited number of students as Teaching Assistants. Teaching Assistants are expected to conform to the same standards that apply to fellows and scholars as described above.

Research Assistantships

Support as research assistants is determined by individual faculty members. Faculty members may choose to adjust a research assistant's salary if the student has any other sources of support.

Travel Grants for Scientific Meetings

The DGP will provide a travel grant to any student in years 4 and beyond. This can be taken as a onetime \$1000 grant, or two \$500 grants for separate meetings. Eligible students must be first author on the meeting abstract and must be presenting primarily their own work (oral or poster). Students can only receive \$1000 total while at Northwestern. MSTP students are not eligible for DGP travel grants. Instead, MSTP should contact the MSTP Assistant Director for access to travel funds.

A student and advisor may petition the DGP to use the funds before year four if special circumstances warrant and the DGP budget allows.

The travel grant application, found [here](#), consists of: completed application form, listing the meeting, dates, abstract title, authors, oral or poster, and signatures of student and advisor; abstract; estimate of costs for meeting registration, travel, room, and incidentals; and copy of notice of acceptance to meeting or indication as to when the notification will arrive. The student will provide a chart string into which the DGP can deposit the funds.

Students applying for DGP grants should also apply for additional travel grants or awards from other Northwestern University sources. Non-competitive travel grants are available from TGS, and travel awards are available from the Robert H. Lurie Comprehensive Cancer Center and the Center for Reproductive Science. All students conducting relevant research are eligible for and encouraged to apply to these travel awards regardless of their application for a DGP travel award.

Driskill Research Awards

Driskill Scholar Award. Two students each year will each receive a \$750 award to recognize outstanding research achievement. Nominees can be drawn from students currently in their 4th year (PhD) or 3rd year (MSTP) and beyond. Students must be active (not yet graduated) on the date of the award. Students are nominated by their faculty advisors.

Driskill Alumni Award. Two recent graduates will each receive a \$750 award in recognition of their outstanding research achievements. Nominees can be drawn from students who graduated between December of two years prior and August of the current year. The criteria for DGP nomination are that the student published at least one first author, highly impactful and influential paper that largely formed the basis of the dissertation. Nominating letters should reference any additional commentary (e.g., News & Views) that resulted from the paper. However, commentary is not a requirement. Students who receive a Driskill Scholar Award will not be eligible to receive the Driskill Alumni Award.

Bonus for individual fellowships

The DGP will provide a bonus to students who secure funding through an individual fellowship from outside Northwestern. The bonus will consist of a one-time payment of 10% of the first year's stipend. Eligible awards include, but may not be limited to, NSF Graduate Research Fellowship, NIH NRSA award, American Heart Association fellowship, American Cancer Society fellowships, HHMI International fellowship, and other similar individual fellowships.

The bonus will be processed in the month in which the award is activated. Students must submit a Notice of Award to the DGP Office.

Students who come to the DGP with an individual fellowship will receive the same bonus in September of their first year.

Student Loans & Emergency Loans

Student loan funds are available to help finance the cost of education. International students are not eligible for federal student loans. A student should consider loan funds as a supplementary resource rather than the primary means of financing an advanced degree.

Emergency Loans are available from The Graduate School to assist during unexpected short-term financial situations. More information on loans and emergency loans can be found [here](#).

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Program: Driskill Graduate Program in Life Sciences

Graduate Program Goals/Mission Statement:

We seek to provide students a challenging and supportive environment in which to develop into a scientist. Students should learn fundamental biological principles, develop critical thinking skills, and enhance both oral and written communication skills. Students are expected to generate a body of work that contributes to new knowledge in their field.

Learning objective(s) <i>Students should be able to...</i>	Milestone/ Requirement /Capacity	Assessment Strategies and Criteria* <i>How do we know this objective has been achieved? What criteria do we have to measure success?</i>
Comprehend fundamental biological principles	Coursework	Successfully complete coursework, including core classes, with a cumulative GPA of at least 3.0.
Develop critical thinking skills	Research, proposals, experimental design and analysis	<ol style="list-style-type: none"> 1. Coursework includes proposal writing for many electives. Students are required to take a course on proposal writing, which must be passed. 2. Qualifying exam consists of developing a research proposal. Student must write the proposal and defend to a faculty committee. 3. Student needs to develop a thesis proposal and submit to their committee for approval. 4. Student must conduct original research. Students are expected to design and analyze their own experiments as they advance through the program. Progress is tracked by the advisor and thesis committee.
Develop oral communication skills	Seminar requirement, thesis committee meetings and defenses	<ol style="list-style-type: none"> 1. Each student is required to present their work orally at least 3 times during their graduate career. Venues may be internal (student research clubs, department seminar series, etc.) or external. 2. Student must orally defend their proposal as part of their qualifying exam. Faculty committee

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		<p>determines whether the student was successful in defending their proposal and gives the student feedback.</p> <p>3. Student must present their ongoing work to their thesis committee on at least a yearly basis. Thesis committee evaluates the presentation and provides feedback.</p> <p>4. Student must orally defend their thesis proposal. Thesis committee determines whether the student was successful.</p>
Develop written communication skills	Qualifying exam, thesis proposal and committee meetings, thesis, publication	<p>1. Qualifying exam written proposal is evaluated by a faculty committee and feedback is provided.</p> <p>2. Thesis proposal is submitted to the thesis committee for evaluation. Thesis committee provides feedback to the student.</p> <p>3. For each yearly committee meeting, students must submit a written report of their research so far and plans for the future to be evaluated by the thesis committee.</p> <p>3. Student must communicate their research in their dissertation. Dissertation is evaluated by the thesis committee.</p> <p>4. Students must publish at least one first author, peer reviewed research publication.</p>
Contribute to their field	Thesis, Publication	<p>1. The thesis committee evaluates the written thesis to determine whether it constitutes a significant contribution to the student's field of research.</p> <p>2. Students must publish at least one first author, peer reviewed research publication.</p>

*Please attach any existing criteria or rubrics for assessment models/milestones/requirements.