RUSH UNIVERSITY

Integrated Biomedical Sciences

PhD Student Handbook

DIVISION OF TRANSLATIONAL SCIENCE
2026-2027

The Division of Translational Science

At the Division of Translational Science (DTS) within Rush Medical College, we have created an environment that fosters innovation through an interdisciplinary approach to scientific discovery. Our students not only learn leading-edge scientific techniques but also, perhaps more importantly, critical thinking and analytical problem-solving skills that will serve them no matter their next steps after earning their MS or PhD degrees. Students who select the DTS as their home for graduate education are committed to scientific advancement through research and will become the next generation of thought leaders. Through rigorous training, customized curricula, and hands-on experience, students will become alumni who have strong connections and networks and are well-prepared to enter the scientific and clinical workforce where they will solve complex problems and lead organizations that will chart the future.

Mission

The mission of the Division of Translational Science is to advance the frontiers of biomedical science through innovative education, cutting-edge research, and interdisciplinary collaboration. By offering a PhD program in Integrated Biomedical Sciences, a master's program in Integrated Biomedical Sciences, a master's program in Biotechnology, and a master's program in Clinical Research, we strive to cultivate a dynamic and inclusive environment that nurtures scientific discovery, critical thinking, and professional development. Our goals are to: 1) Provide rigorous and comprehensive graduate education that equips students with deep expertise in biomedical sciences, biotechnology, and clinical research; 2) Foster creativity and collaboration across disciplinary boundaries to solve complex biomedical challenges; 3) Promote strategic and impactful research that addresses critical health issues and advances medical science; 4) Ensure diversity and inclusivity within our academic community to enrich the educational experience and enhance scientific innovation; and 5) Prepare graduates for successful careers in academia, industry, and healthcare by offering contemporary professional development and career planning resources. By fulfilling this mission, the Division of Translational Science aims to develop leaders who will drive scientific progress and improve human health globally.

Vision

The Division of Translational Science at RUSH University envisions becoming a global leader in biomedical education and research, recognized for our commitment to scientific excellence, interdisciplinary innovation, and transformative impact on human health. We aspire to create an environment where diverse perspectives and collaborative efforts converge to drive breakthroughs in biomedical sciences, biotechnology, and clinical research. Our graduates will emerge as pioneering leaders equipped to address the most pressing health challenges, advance medical knowledge, and improve the quality of life for communities worldwide. Through our dedication to fostering critical thinking, creativity, and professional growth, we aim to shape the future of healthcare and scientific discovery.

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Overview of Academic Program

Integrated Biomedical Sciences PhD

The PhD in Integrated Biomedical Sciences is designed to educate science professionals for leadership in biomedical research and academic positions, as well as to provide career path education relevant to their specialized fields. Since collaborative interdisciplinary teams of scientists perform most biomedical research; our doctoral program emphasizes an integrated interdisciplinary approach to biomedical research. Graduates of this program will perform high-quality, impactful biomedical research at colleges and universities, government agencies, hospitals, nonprofit agencies, and in industry. Students in the program will work at the bench with faculty and scientists to generate new knowledge in the fields of biomedicine using sophisticated research methods. As a part of the program, students are required to demonstrate their knowledge of core and concentration-specific courses and pass a comprehensive preliminary examination as well as candidacy (dissertation proposal) examination based on their research proposal. Students will design and conduct research that culminates in a dissertation, and they will disseminate their scientific findings through scholarly presentations and publications.

Integrated Biomedical Sciences PhD: Program Objectives and Student Learning Outcomes

Program Objective 1: Provide a rigorous biomedical science education that builds core knowledge, strengthens analytical and interdisciplinary skills, and prepares students for independent research.

Student Learning Outcomes 1: Demonstrate mastery of foundational biomedical science knowledge and uphold ethical principles in the responsible conduct of research.

Courses contributing to PO1/SLO1: DTS-502, DTS-503, DTS-506, DTS-500, DTS-519, DTS-611, DTS-507

Program Objective 2: Develop students' research competencies through structured critical inquiry and scholarly communication by guiding the formulation of rigorous biomedical research proposals and fostering effective collaboration within multidisciplinary teams for research execution and dissemination.

Student Learning Outcomes 2: Demonstrate advanced understanding of their research area, apply analytical and interdisciplinary skills to design and interpret experiments, and produce clear scientific writing and oral presentations, including a coherent and defensible research proposal.

Courses contributing to PO1/SLO1: DTS-698, DTS-546, DTS-525, BTN-525, DTS-520, DTS-595

Program Objective 3: Enable students to conduct original, hypothesis-driven research, disseminate their findings through professional outlets through sustained mentoring, and a successful dissertation defense.

Student Learning Outcomes 3: Conduct independent, hypothesis-driven research, disseminate their findings through professional presentations and publications, that contributes new knowledge to the biomedical sciences.

Courses contributing to PO1/SLO1: DTS-699, DTS-594, DTS-595

Integrated Biomedical Sciences PhD: Curriculum

The core curriculum, which is common to all students, builds knowledge and skills in research theories and methodology, data analysis and statistics, laboratory applications and skills, and the molecular and cellular sciences basic to health and disease. These courses will provide systematic exposure to the contemporary process of scientific discovery and will serve as the basis for the remainder of the curriculum.

First Year

Fall Term

- DTS - 502 Advance Cell Biology Credits: 2
- DTS - 503 Advance Molecular Biology & Gene Regulation Credits: 2
- DTS - 506 Biomedical Ethics Credit: 1
- BTN - 525 Experimental Design & Disease Modeling Credits: 2
- DTS - 525 Biomedical Informatics: Genomics & the Microbiome Credits: 1
- DTS - 546 Principles of Biostatistics I Credits: 2
- DTS - 698 Pre-Dissertation Research Credit: 1

Spring Term

- DTS - 698 Pre-Dissertation Research Credits: 3

and take 2 from the following cognate courses:

- DTS - 500 Advanced Musculoskeletal Biology Credits: 3
- DTS - 507 Advanced Immunology & Immune System Dynamics Credits: 3
- DTS - 519 Advanced Neurobiology Credit(s): 3
- DTS - 611 Advanced Cancer Biology and Therapeutic Mechanism Credits: 3
- DTS - 620 Microbial Pathogenesis Credits: 3

Summer Term

- DTS - 698 Pre-Dissertation Research Credits: 9

Note. *Course enrollment is a self-registration procedure. Thus, it is expected students know in advance what course to take/enroll and for how many credits. Always confirm your options with the Program Director and check the Rush University registration policy that details course registration and registration adjustments for courses.*

Note: *Pre-Dissertation research rotations are integral to the core curriculum. It is encouraged that students complete rotations in at least two different laboratories.*

Second Year

Fall Term

- DTS - 520 Biomedical Science Journal Club: Critical Analysis & Discussion Credit: 1
- DTS – 698 Pre-Dissertation Research Credits: 8

Spring Term

- DTS - 520 Biomedical Science Journal Club: Critical Analysis & Discussion Credit: 1
- DTS - 594 Fundamentals of Grant Writing for Scientific Research Credit: 1
- DTS - 595 Fundamentals of Scientific Manuscript Writing Credit: 1
- DTS - 698 Pre-Dissertation Research Credits: 6

Summer Term

- DTS - 698 Pre-Dissertation Research Credits: 9

Note: *there is no DTS-520 during the Summer-terms.*

Third to Fifth Year

Each Semester

- DTS – 520 Biomedical Science Journal Club: Critical Analysis & Discussion Credit: 1
- DTS - 699 Dissertation Research Credits: 2

Students are expected to register for a minimum of 20 CrHs of core curriculum classes (including 8 CrHs of DTS-520), minimum of 6 CrHs of research area-specific courses and a minimum of 54 CrHs of dissertation research (DTS-698 and DTS-699) as required for graduation.

While registration to research courses appears similar in years one through five, the nature and character of the research changes and the student passes through a number of milestones towards completion of the PhD.

Integrated Biomedical Sciences PhD: Program Progression

Year 1: Classes, Research Experience & Comprehensive Examination

The goal of the course work in the first year is to expose the student to the biomedical sciences to enable them to design and approach a research problem from molecular, cellular and organ system perspectives. This broad-based approach to disease is the core of the Integrated Biomedical Sciences Program. The students will also gather research experience in 1-3 laboratories to enable them to choose a lab/research area where they will perform their dissertation research. It is encouraged that students complete rotations in at least two different laboratories.

Research Area Specific Coursework

For graduation, students will need a minimum of 6 credits of research area specific coursework that they select. Each student should take two advanced courses. Courses should be taken in the spring semester of the first year.

Comprehensive Examination

The goal of the comprehensive exam is to determine whether the student is prepared to start and succeed in their dissertation research. At the end of the 1st year of study, students will sit for an oral examination to test their mastery in the content of the 1st year experiences. A committee will be arranged by the Program Director with minimum of 2 additional faculty members. The Committee will select a high impact published paper and the students will be responsible for answering questions about the content of the paper and any questions related to the paper's discipline (or anything else relevant to area of study). The scientific paper will be handed to the students 3 weeks in advance. A favorable vote from at least two members of the committee is required to pass the comprehensive exam.

At the end of their 1st year of study, students will also select their area of research and their research advisor.

Year 2: Classes, Research Experience & Candidacy Examination

The remaining coursework will be a combination of Writing and Journal Club Courses. Students will also start their research in the lab where they can work on their dissertation research.

Journal Clubs

Journal clubs are a great way to foster scientific discussions outside of a formal classroom or lab settings. During Pre-Dissertation and Dissertation Research rotations, the students' participation in every lab and Departmental academic activities like data or journal clubs is expected. In addition, students are required to attend Departmental seminars. Thus, journal club/seminar is part of your training and is not optional.

Candidacy Examination

The selection of a research advisor will significantly influence the student's selection of a research area of interest. The goals of the second year are to learn the relevant laboratory techniques and to develop a research proposal in conjunction with their research advisor. The research project will advance knowledge in a specific discipline and yield first-author scientific publications for the student.

The student, with the advisor's suggestions, must select a five-member dissertation advisory committee and defend the proposal in front of the committee by the end of the second year. Please refer to the Policy on Dissertation Committee Composition below, under DTS Policies. The composition of this committee should be submitted to the Program Director and should be approved through consultation with the DTS Advisory Committee. Once the committee convenes, it will choose a chairperson who cannot be the student's primary advisor.

For the Candidacy Examination, the student's research proposal should include one page for

hypothesis & specific aims and six pages of research strategy, following the format of an NIH F31 grant (https://researchtraining.nih.gov/programs/fellowships/F31). Students are discouraged from using AI of any kind for their F31 writing (please see below about AI use under DTS Policies). The student must provide a copy of the proposal to the dissertation advisory committee at least two weeks before the exam. All members of the committee and the Program Director must be present at the Candidacy Examination either in person or remotely (via phone or electronic media). The written proposal and its oral defense in front of the dissertation advisory committee constitutes the candidacy examination. Passing this examination means the student is a candidate for the PhD degree.

If the student does not complete the Candidacy Examination by the end of the Summer-term of their second year, they will be placed on probation during the fall of their third year. If the student has not taken the examination by the end of the term of probation the student will potentially face dismissal. Since the advisor shares in the responsibility to ensure student academic progress, including completion of program milestones in a timely manner, advisors of students who do not take the candidacy examination by the end of fall term of their third year will not be allowed to take a new student into their laboratory for the subsequent two years.

Admission to candidacy is a demonstration of confidence that the student will successfully accomplish the remaining requirements of the program. Students failing to achieve admission to candidacy may apply for the coursework and completed research toward a related Master of Science degree upon recommendation by the dissertation advisory committee.

Year 3-5: Research Progress/Publications/Dissertation

For evaluation of progress in years three through five, the student will be evaluated during the Pre- and Dissertation Research Courses. A meeting with the student and their mentor (and possibly the Program Director), for this purpose, will take place at the end of each term to discuss the student's progress and a Pass/No Pass grade will be determined for that term.

The research advisor monitors the day-to-day progress of the student. The Dissertation Advisory Committee will meet with the student and evaluates the student's presentation on progress at least every six months to monitor progress and to approve any changes to the proposed research project. They may meet more frequently, especially after the approval of the student's research proposal. The committee meetings will consist of an oral presentation of research progress by the doctoral student. This oral presentation will be followed by a discussion of progress and career development. A detailed written account of progress will be distributed by the student to their committee prior to each meeting. The Chair of the committee shall summarize the minutes of the meeting focused on actionable items to be used as a guide for the next meeting. The document is shared with the program director, the student, and members of the committee.

The student's assessment continues by outcomes listed above with emphasis on the growth of research and communication skills centered on oral and written communication. For this, the student is expected to attend national meetings, make presentations, posters etc. and become a part of the scientific community. Likewise, the student should be submitting research articles for publication in peer-reviewed journals. The Integrated Biomedical Science PhD Program requires that the research project yields at least one first-authored research article submitted for publication in a scientific peer-reviewed journal. The submission for publication requirement is necessary for graduation. The Dissertation Advisory Committee will continue to assess student progress on the aims and determine when the student has completed his/her dissertation research

through examination at their Data Defense. When the dissertation work is deemed to be complete, the Dissertation document is prepared, and the dissertation is publicly defended (See Data Defense and Dissertation Document and Presentation sections below).

Individual Development Plan (IDP)

The student will be able to work collaboratively with other scientists, physicians and health care professionals to give and obtain feedback concerning the approach to research problems, data analysis and implications of research.

The work environment in basic and clinical science is evolving. Students should be aware of the many different types of opportunities available in the workplace and need to prepare themselves for the opportunities and challenges that they will encounter when they graduate. In addition to the research and the coursework, the students are encouraged to create an individual development plan (IDP) each year to define their areas of interest, skills and values.

Students will review their IDP yearly with their research mentor, to refine their career interests and define their gaps in knowledge or skills that can be pursued in the following year. By the time of graduation, students should have used the IDP, along with mentorship and experiential or other training opportunities to refine their career path.

Dissertation Document, Presentation, and Approval

The student is expected to write a dissertation (format approved by the Center for Academic Excellence) and present the work in a public forum attended by the Dissertation Advisory Committee, the Program Director, university faculty, and students. The dissertation defense shall be a public, live oral presentation (not pre-recorded), by the student on the main aspects of the research reported in the dissertation, followed by questions, comments, and discussion by the audience.

The Chair of the Dissertation Advisory Committee shall act as the moderator of the open discussion and shall have the discretion to decide whether questions are relevant to the topic of the dissertation. Immediately following the public presentation, the committee and student shall enter in a closed session to test the student's knowledge and serve as the final examination for approval of dissertation and degree conferral. The chair of the dissertation advisory committee shall act as the moderator of the discussion, with each member given an opportunity to ask questions, except for the advisor who shall remain as an observer in this examination.

The student may be asked to make revisions of the dissertation document by the Committee before final approval. The student must notify the Registrar's Office of impending completion of the degree by the submission of an Intent to Graduate Form at the beginning of the final term. Prior to completion, the student should consult with the Center for Academic Excellence to ensure that the dissertation is formatted correctly. Specific formatting guidelines are required as set forth by the Center for Academic Excellence.

All students will be required to submit the dissertation to ProQuest for publication through the Center of Academic Excellence (CAE) to be eligible for graduation.

Minimal Credit Hours Required for the PhD Degree

The PhD in Integrated Biomedical Sciences should be completed in five years and requires completion of 80 credits distributed as follows: core courses (minimum of 20 CrHs out of which 8 should be of DTS-520 Journal Club), research area specific coursework (minimum of 6 CrHs), and dissertation research (minimum of 54 CrHs). Students must also pass the comprehensive examination (at the end of year 1), a candidacy examination (at the end of year 2), a data defense and a final dissertation defense examinations (public dissertation defense; at the end of year 5) and submit a first-authored, scientific, peer-reviewed manuscript on their research project. Students also must submit their approved dissertation to ProQuest through Rush Library.

The core curriculum, which is common to all students, builds knowledge and skills in research theories and methodology, data analysis and statistics, laboratory applications and skills, and the molecular and cellular sciences basic to health and disease. These courses provide systematic exposure to the contemporary process of scientific discovery and will serve as the basis for the remainder of the curriculum. Advanced students entering with a Master of Science (MS) degree in a biomedical science or a Doctor of Medicine (MD or DO) degree may have satisfied the requirement for some of the core courses based on their prior records. Therefore, some core course requirements may be waived (by special permission to receive transfer credits) and the requirement of core course hours can be compensated by taking extra hours of or Pre-Dissertation research. These students may be able to complete the degree in a shorter time-period, provided that they progress through all other program requirements. IBS MS students who enter the IBS PhD Program will also be on a separate plan of study which is determined by the Program Director.

All students will be required to complete a minimum of 54 credits of Pre-Dissertation and Dissertation research. Dissertation credits in the Division of Translational Science involve laboratory-based research required for completion of the dissertation, and include training in various types of skills including: analyzing published data; developing a research proposal; learning and applying advanced methodologies and statistical data analyses; developing skills to write and potentially submit a pre-doctoral training grant application; practicing presentation skills to disseminate one's own research findings in national conferences; writing a research publication; and developing and defending a dissertation project.

Integrated Biomedical Sciences PhD: Procedures

Research Opportunities

The research areas of interest for the Integrated Biomedical Sciences PhD program are translational cancer research; cardiovascular and respiratory biology; immunity, inflammation and infection; functions and disorders of the musculoskeletal system; and functions and disorders of the nervous system. These concentration areas are supported by qualified faculty from Rush University who have ongoing research accomplishments in these areas. They come from academic departments as well as clinical departments, which enables students to select from a variety of individuals with basic and clinical expertise to serve on their advisory committees and guide them through their projects.

Research Advisor Selection

During the first year the student will select up to three laboratories for research rotations (DTS-698, Pre-Dissertation Research). Based on these rotations, the students will identify their laboratory of interest and submit a ranked list of 3 potential Research Advisors to the Program Director. The Program Director, in consultation with the potential advisor(s) and the DTS Advisory Committee, will approve the advisor-student matches. Students are encouraged to complete rotations in at least 2 different laboratories. However, students who enter the program committed to a particular laboratory (and funded by the research advisor's grants) can do all three lab rotations in that laboratory. Likewise, students who enter the program with a designated interest in a particular advisor, can conduct a lab rotation in that lab and if they select to match with this advisor and the selection is approved, they can continue the remaining of the lab rotations in that laboratory. All advisors must meet the criteria established by the Division of Translational Science policy and procedures.

Advisory Committee

Please refer to the Policy on Dissertation Committee Composition below. The Chair of this Committee, who cannot be the student's research advisor, will be chosen at the first committee meeting and will preside at all subsequent meetings and arrange for the timely completion of the dissertation work. In addition, the Chair of Committee will serve the purpose of ensuring integrity of process and will contact the Program Director if anything develops or warrants DTS attention. The Dissertation Advisory Committee strives for consensus in all its actions. A majority vote of the Committee's membership, however, is sufficient for all activities except the final approval of the dissertation. In addition to the research advisor and committee members, the Program Director may serve as an ex officio member of the committee for the first and last of the meetings. The purpose of having an ex officio member is to monitor the quality of the examination experience.

Data Defense and Dissertation

In the candidate's final year, a dissertation data defense will be presented to their dissertation advisory committee, demonstrating that satisfactory progress has been made on the project to justify the completion of all experiments and to start writing their dissertation. The Data Defense should be considered the final committee meeting before the Dissertation Defense and should take place six to four months before the Dissertation Defense.

Upon completion of the data defense and writing of the dissertation, the student will provide the dissertation to their committee at least two weeks prior to their Dissertation Defense. The public defense will be comprised of a public one-hour presentation attended by the dissertation advisory committee and faculty and students at the University, followed by a question/answer session with the audience.

The dissertation advisory committee then meets in a closed session to examine the candidate and approve the dissertation. Typically, the meeting immediately follows the public presentation. The committee strives for a consensus, but the dissertation can be approved with a majority vote. The awarding of the PhD degree requires the demonstration of a capability for independent research and a contribution to scientific knowledge. Like the candidacy examination, all members of the committee must be present at the dissertation defense either in person or virtually.

Since the submission of a first-authored research manuscript to a peer-reviewed journal is required for the degree, the degree is not awarded until this requirement is met.

Tuition Scholarship and Stipend

Accepted doctoral students receive a competitive University-supported stipend and tuition scholarship or could be supported by a faculty member with NIH federal grants or other external sources. The stipend and tuition scholarship are renewable each year provided that the student is making satisfactory progress towards the degree. Outside employment is not acceptable as it interferes with the time and effort necessary to complete the program.

Division of Translational Science Academic Policies

The Division of Translational Science follows University-wide policies and procedures and reviews program-specific regulations. However, the Division of Translational Science reserves the right to make substantive changes in its programs after a student has matriculated. Students will be informed in writing if any requirements are changed. Students re-entering the Program after an absence will be guided by policies and procedures in effect at the time of re-entry.

Course and Examination Policy

The Division of Translational Science maintains rigorous standards for course and examination policies to ensure academic integrity and consistency across all programs. These policies are essential to uphold the quality and fairness of the educational experience for all students. Specifically, the Course Director is responsible for distributing a course syllabus to all enrolled students at the beginning of each course. The syllabus must adhere to the format specified by the University Curriculum Committee and include detailed information on course objectives, content, schedule, assignments, grading criteria, and examination policies. All course and examination policies outlined in the syllabus must align with DTS guidelines. Course Directors must ensure that their policies are consistent with the division's standards and provide a clear and comprehensive guide for students. All exams must be proctored to prevent academic dishonesty and ensure a fair testing environment. The Course Director must specify the procedures for proctored exams in the course syllabus, including the format, timing, and any special instructions. Proctors must be present during all exams to supervise students and enforce exam rules. The Course Director is responsible for arranging proctors and ensuring they are adequately trained to monitor exams effectively. Any breaches of examination policies or incidents of academic dishonesty must be reported immediately to the Course Director and handled according to DTS and university procedures. Students are expected to adhere to these policies, and any violations will be addressed according to the established disciplinary procedures.

Pass/No Pass Grades

Required courses are usually taken for letter grades (grades are A, B, C or F), although some maybe offered as pass/no pass (P/N) option with approval from the program director. Research hours are graded using the P/N option.

Good Academic Standing

To remain in good academic standing, students must earn a B (3.0) or better in core and cognate courses, meet the requirements of their Program and maintain a cumulative 3.0 GPA. PhD students must be in good academic standing to be admitted to candidacy and to graduate. Students who fail to remediate their deficiencies within one academic term or are placed on probationary status a third time, are subject to dismissal by the Division of Translational Science.

Academic Difficulty

The students have the responsibility to inform the Program Director of their academic deficiencies and regain good academic standing. Monitoring of this situation resides within the Program Director’s purview. The Program Director also monitors the progress and promotion of students and gives approval to award students' degrees.

Academic Probation

Probationary conditions are defined in Article VII, Section 6 of the University Rules for Governance and the program's Student Handbook.

i. The Registrar's Office will notify the Program Director when a student's cumulative GPA falls below 3.0. The Program Director will then email the student with a confirmation receipt to inform them of their change in academic standing to probation, followed by an in-person meeting.

ii. If a student fails to meet other program requirements, the Program Director will notify the Division Head. The Division Head will inform the students by email with confirmation of receipt of their change in academic standing to Probation. This correspondence will be included in the student's permanent file.

Dismissal

Students can be dismissed if they fail to meet program requirements or go on academic probation for a third time. As the Program Student Handbook and the University Catalog outline, students may be dismissed for academic misconduct or non-academic reasons. Procedures follow Article VII, Sections 6 and 7 of the University Rules for Governance as applies to the Division of Translational Science. Letters of Dismissal or Administrative Withdrawal come from the Division Head. These decisions are made in consultation with the Program Director and the Division of Translational Science Advisory Committee, and the student must receive adequate notice of such an impending decision. The Division of Translational Science Advisory Committee will recommend the Division Head for final action.

Student Appeals Policy

Any student of the DTS may appeal a final course grade, failure on a comprehensive or candidacy examination, or failure of the dissertation defense. A student may also appeal an unreasonable delay in their graduation from the University. A student may appeal a Dismissal or Administrative Withdrawal as stated in Article VII, Sections 6 and 7 of the University Rules for Governance. Course grades can be appealed directly through the Course Director. Comprehensive or candidacy exam failures, failure of a thesis/dissertation, and dismissal for other reasons can be appealed through the DTS Advisory Committee following the steps below:

i. The student must initiate the appeal process within fourteen (14) calendar days of the event that precipitated the appeal. The student will submit a written statement to the DTS Advisory Committee requesting consideration of their case (convened in Step 2). The student must provide the following in the written statement:

- Cause for probation or dismissal, e.g., failure of thesis/dissertation.
- Action being requested.
- Justification for the request.
- An outline of the efforts and actions already taken to obtain consideration of the request;
- Copies of this written statement must be sent to the Program Director and the thesis/dissertation advisory committee Chairperson as appropriate.

ii. The Chair of the DTS Advisory Committee will convene an appeals committee comprised of non-conflicted voting members of the DTS Advisory Committee. The appeals committee will include a student representative from a program different from the appealing student. If a member of the DTS Advisory Committee is conflicted, that member may be replaced with a non-conflicted faculty who is not a member of the DTS Advisory Committee. Faculty considered conflicted include the student's Program Director and those evaluating the student's academic status. Conflicted faculty will not be on the appeals committee but can be invited to present to the committee. The appeals committee will meet within fourteen (14) days of receiving the student's written request to appeal. The appeals committee will submit a report with a recommendation to the Division Head within five working days of the committee's meeting.

iii. Within fourteen (14) days of receiving the appeals committee's recommendation, and upon discussion with the student and others as appropriate, the Division Head shall reach a final decision and notify each party. The conclusion reached by the Division Head is final. A designated appeals committee member will document the discussions and outcomes of all meetings in this appeal process. At any step in the process, the student may withdraw the appeal by written notification to the DTS Advisory Committee with a copy to the Division Head. In the event of a dismissal decision, a student may continue to enroll until the appeal process is completed or the student withdraws the appeal.

Student Transfer Policy

1. **Request for separation of Student and Research Mentor:**
   The individual, whether Student or Research Mentor, requesting the termination of mentor-mentee relationship should submit a request to their Program Director in writing, including the reason for the request. The Program Director should work with the parties involved to assess whether remediation steps can be taken. If not, the Program Director should submit the request to the DTS Advisory Committee. The Advisory Committee will deliberate and inform the Head of DTS of their decision. DTS will inform the Program Director of the outcome of the request. The Program Director shall then notify all parties involved and DTS for record keeping.

2. **Request to transfer the student to a new Research Mentor:**
   The request for transfer should come from the prospective the new Research Mentor and undersigned by the student. The request should be submitted in writing to the Program Director, which should include:
   a) Conditions of transfer
   b) PhD students: A signed letter of commitment by the new Mentor and their Department Chair to support the student's stipend and fringe benefits until the student graduates from the program.
   c) MS students: A description of continuation/extension of the studies

   The Program Director should submit both documents to the DTS Advisory Committee for decision. The Advisory Committee will deliberate and inform the Head of DTS of their decision. DTS will inform the Program Director of the outcome of the request. The Program Director shall then notify all parties involved and DTS for record keeping.

   Note: It is encouraged that Steps 1 and 2 are listed in the same request.

3. **Student's plan-of-study and project in the new lab:**

These are determined by the Mentor and the Student. The Mentor must notify the Program Director in writing if any changes in plan-of-study (including course work or graduation date) are foreseen. Those changes shall be approved by the Program Director.

4. **Dissertation/Thesis Committee composition:**

It is determined by the Mentor and the student.

If changes are made to the composition of the Dissertation/Thesis Committee, a request for approval will be submitted to the Program Director. After approval, the Program Director will notify the DTS Advisory Committee about the composition of the Dissertation/Thesis Committee.

5. **Presentation of the new project:**

The Mentor, the Student, and the Dissertation/Thesis Committee will be involved.

Format of presentation:

a) If the Student did not defend a proposal for the previous project, a proposal on the new project needs to be delivered as usual in the PhD/MS program.
b) If the Student passed the proposal for the previous project: A written proposal is not required, but the Student must schedule a meeting as soon as possible with the Dissertation/Thesis Committee to present their plan for the project, including discussion of aims, any preliminary data, and approach.

The Dissertation/Thesis Committee then, after deliberation, approves the presentation and decides on continuation of the project.

Full-time Enrollment

Full-time enrollment is required of all Integrated Biomedical Sciences students. Full-time students must register for at least nine credits each term or at least two credits when enrolled in thesis and dissertation research courses. At the time of graduation, the student must be enrolled in the program. Outside employment is not allowed during the years of the program, since it interferes with the successful completion of the student's studies.

Residency

Ph.D. students in the Integrated Biomedical Science Program must fulfill all requirements for graduation within five full-time enrolled academic years. If a student surpasses these time constraints, they must formally request an extension for graduation. This request must identify the reasons for the extension and provide a written plan with reasonable deadlines for completion. This document will be co-signed by the student's advisor and Program Director and submitted to the DTS Advisory Committee. The DTS Advisory Committee will then vote on whether to accept the extension or not (passed by a simple majority). The financial ramifications of the extension need to be determined before the request is approved.

Voluntary withdrawal and Leave of Absence

Voluntary withdrawal refers to a student-initiated, permanent departure from the university without expectation of the student's return. Any student withdrawing from the university must give formal notification by completing a petition for withdrawal, which requires the student to obtain specific signatures. The petition for withdrawal form may be obtained from the Office of the Registrar or online. In DTS, the student should also inform their Program Director and the Advisory Committee in writing of their intent to withdraw. They should be aware that if they withdraw during the last three weeks of any term, they will receive grades in the registered courses.

After matriculation to Rush University, a student may not arbitrarily cease registration without notice and must petition for a leave of absence if they cannot attend a term but wish to remain enrolled in their academic program. A leave of absence is a temporary suspension of studies granted to an eligible student for whom an approved time limit has been set and a specific date of return established.

Any student wishing to go on a Leave of absence must give formal notification by completing a petition for leave of absence form that may be obtained from the Office of the Registrar or online. In DTS, the student must also petition to the Advisory Committee in writing. The petition should be signed by the student and the Program Director. The petition should also contain the planned length of LOA and the plan to return to the program. The decision by the Advisory Committee will contain the approved length of the LOA and the conditions to return to the program as well as a Plan-of-Study to graduate from the program.

An approved Medical Leave of Absence may be generated by the student, or by the DTS Head's Office and must be accompanied by documentation from the student's health care provider and/or an independent

evaluator who must attest to the student's inability to participate in the curriculum due to a medical condition.

In general, the student is required to return by the approved date. If unable to return as agreed, the student is required to contact the Program Director a minimum of two weeks prior to the beginning of the expected term of return and discuss the options open to them. A request to extend a LOA is subject to the same review and approval process as the original. A new clearance form must be completed.

Students intending to return from an approved Leave of Absence must complete and submit the required Return from Leave of Absence form to the Registrar. Students must satisfy the conditions of the LOA before re-entering and must comply with all policies, requirements and course sequences in effect at the time of re-entry. Students returning from a LOA must register during the designated priority registration period.

Student Accommodation

Students who wish to submit a request for accommodations are encouraged to do so upon acceptance into the program, however, applications for accommodations may be submitted at any time. Accommodations cannot be retroactive, so the Office of Student Accessibility Services recommends students submit requests and complete the intake process early. All requests are reviewed and determined in a timely manner. The process for requesting and receiving accommodations can be found through the following link:
Requesting Accommodations at Rush University | Office of Student Accessibility Services | Rush University

Harassment and Discrimination

University Policies, including harassment and discrimination, apply to DTS and are described in the Rush University catalog. It is the student's responsibility to become familiar with these policies.

Extension of Program

The Integrated Biomedical Sciences PhD program is residential. PhD students must fulfill all requirements for graduation within five full-time enrolled academic years. If a student surpasses these time constraints, they must formally request an extension for graduation. This request must identify the reasons for the extension and provide a written plan with reasonable timeline and deadlines for completion. This document will be co-signed by the student's advisor and Program Director and submitted to the Division of Translational Science' Advisory Committee. The Advisory Committee will then vote on whether to accept the extension or not (passed by a simple majority). If the request is rejected, the student can submit an appeal as outlined in the division's Policies and Procedures document. Following the approval of the extension, the student is expected to fulfill all remaining requirements within the time limit defined in the extension permission. A subsequent extension request may be submitted by the student if necessary—the financial ramifications of the extension need to be determined before the request is approved.

Students-at-Large

By permission individuals with an accredited bachelor's degree or its equivalent may have the option of taking IBS courses as a non-degree student, prior to application to a degree program. The policy regarding the transfer of student-at-large credits can be found in the Academic Resources and Policies section of the DTS catalog.

Readmission

Any student who has voluntarily withdrawn from the University may apply for admission to the

Program. A re-entering student should apply to the program and must meet the conditions for re-enrollment, and all policies, requirements, including course sequence in effect at the time of re-entry. Application deadlines may vary by program.

Academic Progression

The Integrated Biomedical Science Programs are explicit and clear about regulations concerning academic policies and procedures surrounding comprehensive, candidacy and final examinations when they are required. Students must become familiar with the regulations and expectations of their chosen program. These regulations and expectations are included in this handbook within the sections devoted to each program. The student is responsible for understanding the regulations, and monitoring changes that may occur during their tenure in the program.

Policy on Dissertation Advisory Committee Composition

The student, with the advisor's suggestions, must select a dissertation advisory committee (DAC) that is composed of a minimum of five (5) faculty members.

The list of committee members should be submitted to the Program Director and the composition of the DAC should be approved through consultation with the DTS Advisory Committee.

DAC Composition Policy – Division of Translational Science

The composition of the Dissertation Advisory Committee (DAC) must meet the following requirements established by the Division of Translational Science:

- The committee must include a minimum of five members: the advisor(s) and four additional faculty members who possess expertise relevant to the student's research area. Each voting member must hold a doctoral degree (PhD, MD, or dual MD/PhD).

- The primary advisor must be a faculty member within Rush Medical College (RMC).

- Out of the four additional members, at least three must also be faculty members within RMC.

- The fourth member must be external to RMC but must hold a faculty appointment in another college within Rush University or at an accredited academic institution in the United States.

- Additional members, including an expert from abroad, may be added to the DAC if warranted by the dissertation project as voting or non-voting members, depending on the scope and requirements of the Dissertation project.

Policy on Co-Advisors:

Co-advisors are permitted when justified by the nature of the dissertation research. Examples include:

1. Two RMC faculty members with complementary expertise may serve as co-advisors for interdisciplinary research projects.

2. If a primary advisor leaves RMC but wishes to continue advising a student, they must secure an on-campus RMC faculty member to serve as co-advisor and oversee the student's day-to-day progress.
3. A newly appointed faculty member with no prior advising experience may be assigned a co-advisor with relevant expertise, as recommended by the DTS, for their first student.

DAC Meetings and Chairperson Selection

Once the committee convenes, it will choose a Chairperson who must not be the student's advisor or co-advisor. The first committee meeting should be the dissertation proposal, which must take place no later than the end of the student's second year in the program.

Following the successful approval of the dissertation proposal, the DAC is required to meet every six months to monitor and evaluate the student's progress.

Honor Code, Academic Honesty and Student Conduct

The Division of Translational Science and its programs follow the University policies on academic honesty and the University statement on student conduct. Each student is expected to always conduct themselves in a professional manner — a manner that conforms to the ethics of the profession and which instills confidence in one's abilities as a working scientist. Irresponsible, unprofessional or unethical behavior, as determined by Rush University honor code may result in dismissal from the program. The college and its programs will not condone cheating in any form. Allegations of cheating will be reviewed by the program director following internal DTS policies. If merited, the report will be forwarded to the Dean of Rush Medical College.

DTS Policy on Responsible Use of Artificial Intelligence

Artificial intelligence (AI) programs and generative AI (genAI) are potentially valuable tools for teaching/learning, research and its dissemination. However, as with any tool, users must know how to use it correctly and appropriately within community standards of conduct and understand its limitations.

The following guidelines apply to all graduate students, and those faculty, and trainees who participate in coursework, assessments, thesis, and dissertation research, and scholarly dissemination derived from educational activities. By following these guidelines, users can integrate AI into their academic pursuits responsibly, enhancing their research and learning while maintaining integrity and avoiding academic misconduct.

Guiding Principles

AI tools may **support learning** but cannot replace educational programs that are designed to facilitate critical thinking and knowledge acquisitions. This is especially critical when a trainee is learning. Further, to optimize use of AI in the future, a trainee needs to navigate it not the other way around, which in many cases can show generic responses without deeper analysis. Trainees must take responsibility for work generated. Importantly, using public AI tools may expose confidential data to the public domain; therefore, the user must ensure confidentiality.

1. **Responsibility**
   - The user retains full responsibility for the content, accuracy, interpretation, and originality of all academic and research work.
   - The user is responsible for any plagiarism violation that may have created through using AI.

- The user is responsible for ensuring that AI tools do not replace intellectual contributions or scientific judgment.

2. **Transparency**
   - Any use of AI must be clearly and accurately disclosed.
   - Undisclosed use of AI constitute academic and/or research misconduct delineated in University Policies.
3. **Integrity of assessment and research**
   - AI use must not compromise fair evaluation, authorship standards, data integrity, or the responsible conduct of research (RCR).

Education and Oversight

- Course syllabi must clearly outline acceptable and unacceptable use of AI.
- Instructors must use AI responsibly when developing and delivering courses, including grading.
- Students must **retain all drafts of all documents** (for example, OneDrive version control, sequentially numbered files, Word track changes, or similar features) to demonstrate that their work is original.
- Failing to follow this policy will result in consequences outlined in the University and System policies referenced below.

Permitted and Prohibited Uses of AI

1. Coursework and Homework

Examples:

Permitted (unless restricted by the instructor):

- Brainstorming and outlining
- Supporting literature searches with independent verification
- Grammar, style, and formatting support

Prohibited:

- Generating complete answers submitted as original work
- Completing problem sets or take-home exams unless explicitly allowed

2. Assessments (Quizzes, Exams, Graded Assignments)

- Use of AI is prohibited unless explicitly authorized.
- Violations may be treated as academic dishonesty.

3. Thesis and Dissertation Research

A statement describing AI use should be included in the thesis or dissertation (e.g., in the methods or acknowledgments sections).

Examples:

Allowed with disclosure (unless restricted by research advisor/mentor):

- Editing (e.g., written documents, posters, presentations) for clarity, organization, and written English
- Reference management and formatting
- Background summarization *as a starting point*, not a substitute for reading primary literature
- Drafting presentation slides and figures. Content must be driven by student's research data.

Not allowed:

- Generating concepts, hypotheses, interpretations, or conclusions
- Writing primary scholarly sections
- Analyzing data without student comprehension and verification

Data Protection and Confidentiality when using AI

- Confidential, unpublished, or human-subject data must **not** be entered into public AI tools.

- Violations breach NIH data protection (IRB protocol, PHI) and human subjects regulations (HIPAA, FERPA, etc.)

Applicable policies
Policy Number: UAC0039, Generative Artificial Intelligence for Rush University
Policy Number: UAC0013, Academic Honesty and Student Misconduct
Artificial Intelligence Policy for RUSH System.

Amendment to manuscript submission requirement for PhD graduation
The Integrated Biomedical Science PhD Program requires that the research project yields at least one first-authored research manuscript based on the student's own dataset and submitted for publication in a scientific peer-reviewed journal.
The submission for publication requirement is necessary for graduation but in unusual circumstances, submission requirement may be waived.

Policy on Shared First Co-Authorship in Dissertations
In cases where two students share first co-authorship on a manuscript, the chairs of both students' dissertation committees must confirm that the publication explicitly delineates each student's individual contribution. Furthermore, each dissertation must include only the student's own data. If data from the co-author is used to complete the narrative, it must be clearly acknowledged as originating from the other student, with appropriate attribution for copyright and authorship purposes.

Student Government
The Student Council is the sanctioned student governmental body in the DTS.
Future chapter in P&P for student representation:
Student Advisory Committee (SAC)
i. Purpose:
The Student Advisory Committee (SAC) consults with the Head of the Division of Translational Science (DTS), or their designees, on matters affecting students across all programs. The group ensures that student perspectives are represented in decision-making processes and fosters an open dialogue between students and the administration.
ii. Key Responsibilities:
- **Consultation:** Offer input and advice to the Head of DTS on policies, initiatives, or issues affecting students when requested.
- **Feedback Collection:** Collect and share feedback from students in their respective programs, ensuring a variety of student voices are heard.
- **Communication:** Serve as a liaison between the student body and DTS leadership to promote transparency and collaboration.

Initiative Support: Engage in the development or review of student-focused projects, events, or policies within the Division.
iii. Accountability:
The SAC will report directly to the Head of DTS and, as necessary, provide recommendations and insights through verbal feedback or written reports.
iv. Membership:

- The SAC will include one student representative from each master's program and two PhD students (one representing years 1-2 and the other representing years 3-5). Their mandate lasts for one academic year.
- Members are elected by their peers as stipulated in section v.

v. Student Advisory Committee (SAC) Nomination and Election Process

- Students interested in serving on SAC should nominate themselves by the deadline specified by DTS. As part of the nomination process, candidates must submit a brief statement (no more than half a page) explaining their reasons for running. Submission is solicited by the Manger of Academic and Student Affairs of DTS.
- Once all nominations are received, DTS compiles and distributes the list of candidates to students for voting. After the voting process is complete, DTS announces the elected SAC members.

vi. Meeting Schedule:

Depending on requests or emerging student-related issues, the committee will meet as needed.

Commencement Participation Policy

Participation in the University Commencement Ceremony is a **privilege** and must be **earned** by completing all academic and programmatic requirements for graduation. Commencement represents the culmination of a student's academic journey, and participation should reflect successful completion, not intention to complete. Students and mentors are expected to plan accordingly to ensure eligibility.

Participation will only be granted under the following conditions:

- To participate in Commencement, PhD students must have completed the following by the **end of the Fall semester**:
    - Passed their **Data Defense** meeting.
    - Created a **CAE profile** for dissertation submission.
    - Met with their **Program Director** to schedule all remaining milestones for completion in the Spring semester, including:
        - Submission and revision of dissertation draft to CAE.
        - Final dissertation submission to CAE.
        - Schedule of **public and private defenses**.
        - Submission of a first author manuscript based on their dissertation work: Note: While students may be permitted to participate in commencement upon completion of all other requirements, the degree **will not** be awarded until documentation of manuscript submission is received.

The **dissertation defense** is the final academic requirement and must be completed to participate in Commencement. Students who have not successfully defended their dissertation will not be permitted to take part in Commencement ceremonies.

Rush University: Academic & Institutional Policies

Please use the link below to review the University Catalog, which serves as a great resource for information about the campus, student programs, academic policies and more.

https://www.rushu.rush.edu/student-life/student-affairs/office-registrar/university-catalog

All students are expected to land on a final schedule during regular registration. Thus, monitor your registration each semester. The Rush academic calendar must be consulted to know the time window for registration.

https://www.rushu.rush.edu/student-life/student-affairs/office-registrar/academic-calendars

Course enrollment is a self-registration procedure thus, it is expected students know in advance what course to take/enroll and for how many credits. Always confirm your options with the Program Director and check the registration policy that details course registration and registration adjustments for Rush University courses.

Course registration:
UAC0042 Registration (new policy) replaces UAC0011 (Late Registration)

Appendices

- Integrated Biomedical Sciences Program Contacts
- Milestones and Mentor Agreement: PhD Program
- Milestones and Mentor Agreement Table
- Forming a Dissertation Advisory Committee
- First Dissertation Advisory Committee Meeting Materials
- Materials for subsequent Dissertation Advisory Committee Meetings
- Dissertation Preparation
- Guidelines for the PhD Defense

Appendix 1
Integrated Biomedical Sciences Program Contacts

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IBS Program Director

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Head of the Division of Translational Science

Appendix 2

Milestones and Mentor Agreement: IBS PhD Program

The Milestones table is provided for the purpose of informing students about the academic milestones that they will be expected to reach in order to earn their PhD degree, and when they are expected to complete these milestones in order to make satisfactory progress through the program. Students who are not making satisfactory progress will be placed on academic probation and may be dismissed from the program. Additionally, the IBS Program requires a mentor-mentee agreement form to be reviewed and signed by both the research advisor and student.

Academic Advising

New students are encouraged to seek advice from the IBS Program Director. Once a student selects their dissertation advisor, this faculty member will take over the main advising role, although the Program Director will continue monitoring the student's progress through the program.

Academic advising includes the following elements that are designed to ensure that students remain in good academic standing and make satisfactory progress through the program. Students and their advisors are mutually responsible for working together to ensure that the student accomplishes the following:

- Assemble the Dissertation Advisory Committee with guidance from the advisor.
- Meet with the advisor and advisory committee every 6 months or more often.
- Select appropriate area-specific courses based on degree requirements and suggestions from the student's advisory committee.
- Review and understand all the degree requirements and progress consistently with the expectations of the program, reaching milestones according to the timeline provided on this form; work with the student's Advisory Committee or Program Director if modifications are necessary.
- Meet regularly with the advisor to clarify the timetable for completing any remaining course requirements, examinations, and other requirements.
- Understand the requirements for the writing and successful defense of the dissertation.
- Benefit from experiences and information provided by the advisor to optimize the student's career opportunities and success. To that end, the student is encouraged to complete an Individual Development Plan (IDP) annually and discuss it with their mentor.

Degree-Completion Checklist for Students

- Maintain active student status. Full-time active student status is defined as 9 credits per term, exception is Dissertation research which is 2 credits for full-time enrollment.
- Successfully complete all Milestones listed on the subsequent page.

Requirements for Students in the IBS PhD Program Table

Milestone	Expected Time of Achievement
YEAR 1	
Complete laboratory rotations (3)	End of First year, Summer-term
Take Comprehensive exam	End of First year, Summer-term
Identify a potential Research Advisor, submit up to 3 names for approval	End of First year, Summer-term
Complete the PI/Advisor & Research Project Approval Form	End of First year, Summer-term
YEAR 2	
Complete pre-candidacy course requirements	First year (Fall & Spring); Second year (Spring)
Identify a Dissertation Advisory Committee, submit names, affiliations & areas of expertise for approval	Submit no later than 45 days into Summer-term of Second year
Write Dissertation Proposal (F31 format)	Submit to the dissertation advisory committee at least 2 weeks before the first meeting during the Second year, Summer-term
Take Candidacy exam	End of Second year, Summer-term
YEAR 3-5	
Hold Dissertation Advisory Committee meetings	At least every 6 months
Submission of Predoctoral grant (F31, AHA etc.) (encouraged but not required)	End of Third year, Summer-term
Pass Data Defense exam (Can begin to write the dissertation)	Four to six months before final defense
Notify the Registrar's Office of impending completion of the degree (intent to graduate form)	Beginning of the Final term
Write a dissertation (format approved by the Center for Academic Excellence, multiple submissions are required by CAE)	Start as early as possible
Defend Dissertation (Public & Private)	1 month prior to graduation check dates
Fill out the dissertation approval form to be sent for signatures	After successfully defending the dissertation
Submit the signed dissertation approval form with the dissertation final version to ProQuest (through CAE)	Dates given at the beginning of term
Complete all degree requirements including submission of first-authored scientific paper	Within 5 years of admission

Appendix 3
Forming a Dissertation Advisory Committee

Requirements

The proposed composition of the Dissertation Advisory Committee must follow the Policy on Dissertation Committee Composition (see page 14).

Guidelines for a Strong Dissertation Advisory Committee

In addition to the above requirements, other factors to determine if the committee composition is appropriate for the student. These include:

- Representation of faculty with expertise in the student's study area(s) of research.
- Breadth of the committee as indicated by the inclusion of Rush University Medical College faculty whose primary expertise lies outside the student's major area of research.
- Breadth of the committee as indicated by inclusion of faculty from outside Rush University.
- Familiarity of the included faculty with the requirements and policies of the Division of the Translational Science and the student's program.
- Availability of the faculty for regular committee meetings. Students are required to meet a quorum of the committee (four members or more) at least once every six months.

Chair of Dissertation Advisory Committee Responsibilities

Overview: The Chair of the Dissertation Student Committee plays a pivotal role in bridging the Division of Translational Science (DTS) through the Program Director and the student's dissertation advisory committee. This position requires effective leadership, strong organizational skills, and a commitment to supporting the academic and research progress of PhD students.

Key Responsibilities:

Committee Leadership: Lead and facilitate the dissertation advisory committee meetings every six months, ensure productive discussions and decision-making processes during meetings, guide the committee in providing constructive feedback to the student.

Communication and Coordination: Serve as the primary liaison between the DTS Program Director, the student advisory committee, and the student, maintain clear and consistent communication with all stakeholders, ensure that the committee's recommendations and decisions are effectively communicated to the Program Director and other relevant parties.

Post-Meeting Reporting: Prepare and submit a detailed post-meeting report within two weeks following each committee meeting. The report should address the strengths and weaknesses of the student's project and performance, any milestones completed, and future milestones to be achieved. **Form to fill out:** Committee Meeting Summary Form. This form is to be sent by email to all committee members including the advisor, student, Program Director and to DTS_Forms@rush.edu with the student's name in the subject line.

Documentation and Compliance: Maintain accurate and up-to-date records of all committee activities and decisions and communicate them to DTS.

Dissertation Advisory Committee Meeting

The purpose of the committee meeting is to give and receive feedback on the student's experimental approaches, interpretations, and goals.

Often students delay scheduling a meeting because they feel that they do not have enough new data. Such delays are counterproductive to a timely graduation. The committee can be most helpful when things are going slowly or are not working according to plan.

Regular meetings with the Committee will keep its members abreast of a student's goals and gives the Committee an opportunity to suggest new approaches, experiments, etc. that could move the work forward. Delaying committee meetings slows down progress. The first advisory meeting should take place within the Summer-term of the 2nd year. This committee then will oversee the student's progress for the remainder of the graduate education.

How to Schedule Advisory Committee Meetings

The best way to contact the committee members and set up a meeting is through support personnel of the student's mentor or by sending an email or Doodle Poll directly to committee members. Contact the Manager of Research & Academic Affairs in the Division of Translational Science to reserve a room for the meeting. Most Advisory Committee meetings take one to two hours.

PRO TIP:

Start working on scheduling a meeting two months in advance. It can be a challenge to identify a time when all committee members are available. However, it is possible to hold the meeting with one member absent (except for the candidacy, the data defense and the dissertation defense meetings), provided that the advisor approves and the committee member who will be absent agrees to miss the meeting. After the meeting, it is the responsibility of the student to update the absent member. All committee members are expected to be present at the dissertation defense.

Reserving a Meeting Room or Scheduling Virtual Meeting

Remote meetings can be scheduled via a virtual platform. The Manager of Research & Academic Affairs in the Division of Translational Science can assist in setting up virtual meetings.

After the room or virtual meeting has been scheduled, a calendar invitation should be sent to the committee members with the date, time, and room number (or meeting code). It may be helpful to send a reminder to email prior to the scheduled committee meeting date.

Appendix 4

First Dissertation Advisory Committee Meeting Materials

I. A written, student's proposed research plan following the NIH F31 fellowship format should be distributed to the committee members minimum 2 weeks before the meeting date.

- This should include one-page hypothesis & specific aims and six-pages of research strategy.

II. It is expected that your presentation include the background of the project, specific aims, data gathered (by that point), research plans for the next six months, and the project's long-term goals. (It is not necessary to have excessive data at this stage.) The emphasis should be placed on the plan for the next six months.

III. The presentation slides.

- It is advisable that the number of slides in the oral presentation be limited to what is necessary to communicate the overall idea of the proposal. The student should review the presentation and slides with their advisor prior to the committee meeting.

IV. Prepare a PowerPoint (or similar) presentation that:

- Introduces the committee to the project. Details are not as important as context—why is this an interesting area? What are the key questions? How will the project address one or more of those questions? Do not assume that the committee members know all of this already.
- The student should explain the progress to date. Avoid the use of jargon specific only to the subfield. For each experiment, tell the committee why it was done, what was done, and what was observed, and what it means.
- Provides a plan for the work over the next six months. If a key experiment demonstrating the feasibility of the approach has not been completed, the committee may ask to meet with the student earlier to discuss progress.

Just a reminder to send your proposal and progress materials to your committee members at least **two weeks before every meeting** so they have time to review. And make sure everything is revised and approved by your advisor/mentor before you present or submit.

Appendix 5

Subsequent Dissertation Advisory Committee Meetings

Materials for subsequent Dissertation Advisory Committee Meetings

The following documents are to be submitted for the subsequent meetings.

I. Pre-Meeting

The student should prepare a follow-up report to the proposal, focusing on major action items and important considerations requested at the previous committee meetings. Further, this should be followed by a simple description of the accomplished goals, and the goals for the next six months. Solicit input on this progress report from your research advisor before it is sent out to the committee. The Committee should receive the statement at least three days before the meeting.

II. Post-Meeting – Prepared by the Committee's Chair as described before.

How to get the most out of your Committee.

Students should make the decision to take charge of the committee meeting. This may be a major shift in mindset, if the student is used to following everything that supervisors have told them. It is true that the committee may have more experience than the student, but this is the student's research work, education, and it affects their career. The student is not at the mercy of the dissertation advisory committee. The Division of Translational Science gives a student the opportunity to learn how to become an independent researcher, and they have the right to speak up for themselves if they disagree with their supervisor or committee members.

Draft an agenda and a desired outcome for the meeting.

It is not enough to prepare a presentation about the progress, and "hope" that the committee will approve it. Professors are busy, and it is a rare occasion when all committee members can come together. The best way to make use of this time is to be very clear about the agenda for the meeting.

Before the meeting: make a list of all the topics to be covered and be clear where guidance from the committee is needed.

What is needed to move the dissertation forward? What are the requirements to finish it?

The more clarity a student gets from their committee about their expectations, the easier it will be to make progress. Professors appreciate that a student took the initiative to go through the details of their work to get feedback.

Share the most important results with the committee members before the meeting.

There should not be any surprises during the committee meeting. If a student presents unexpected results or the committee members disagree with each other on major topics, the meeting can turn chaotic. Ideally, all committee members should be aware of what to expect, the purpose of the

meeting is to make sure everyone is on the same page, and to discuss details of the research and upcoming milestones. The best way to ensure that the meeting goes smoothly is to meet individually with each committee member to discuss the results. Another option would be to share the results over email and ask for feedback. If there are any disagreements, a student should attempt to resolve them before the meeting by speaking with their advisor to ensure that the meeting goes smoothly.

During the meeting: Clarify the agenda including how much time will be spent on each part.

Send out the agenda to the committee members beforehand, but also remind them of the topics to be covered before beginning the presentation.

If several topics need to be discussed or multiple decisions made, the student should indicate approximately how much time to spend on each topic.

This will give committee the opportunity to ask questions or address any additional topics they would like to cover.

Respectfully guide committee members back to the agenda if they go off on tangents.

Some professors, especially if they are passionate about their research, may go off topic. They might talk about their own research or previous students.

If the topic they bring up is not relevant to the agenda, acknowledge their opinion respectfully (use a phrase such as "Thank you for sharing that, I will keep it mind") and then gently guide them back to them to the agenda.

A student may feel intimidated if they need to interrupt a conversation between two professors but should remember this meeting is to discuss their project and be successful in the Program.

If committee members realize that they need to discuss something unrelated to the thesis, rest assured that they will find the time to talk about it after the committee meeting.

A student's job is to make sure they stay on the agenda and get their questions answered, and the Committee gets the information they need to help move the project forward.

Wrap up the meeting with an action plan.

End each meeting with a summary of what was discussed, agreements that were reached, and an action plan for next steps. The student's action plan needs to have "actionable" items, specifically what milestones they will work towards after the meeting, and approximate timelines. If it's not the final committee meeting, also set an approximate date for the next meeting.

Committee Meeting Reports

There is Committee Meeting Summary Form involved. When the examination is complete and the student has the instructions from the committee, the Chair writes about the meeting and any action items or specific follow-up needed by the student to be used as a guide for the next meeting. This form is to be sent by email to all committee members including the advisor, student, Program Director and to DTS_Forms@rush.edu with the student's name in the subject line.

Subsequent Advisory Committee Meetings

The purpose of meeting with the advisory committee at least every six months is to make sure that the student is making steady progress toward milestones and the completion of the dissertation. These meetings are important and are required. Missing this important milestone can result in

academic probation. The meetings are for THE STUDENT – not the advisor. It is the student's responsibility to keep them on track.

For each committee meeting, the student should prepare a ~45-minute talk summarizing the background of the project, the research goals and the progress toward those goals. The student should review the presentation with their advisor prior to the meeting. The content of the talk should largely follow the written research summary that was submitted to the committee in the pre-meeting update. It is helpful for the student to remind the committee members of any new publications, courses completed, etc.

Review the specific experiments that have been done since the last meeting and end with the goals for the next six months. Focus on the major goals for the research work. Advisors should be consulted on making the slides. All data should be clearly labeled. Diagrams illustrating the experiments are often helpful. This will be good practice for preparing the elements of publications and of the thesis or dissertation. Please, add references and acknowledge source of data if not own-generated.

The committee is likely to ask additional questions to initiate a discussion of the quality of the data, the student's interpretation of them, alternative approaches to the problem. Take notes of experiments, alternatives, criticisms, etc. that are offered by the committee during this time, as this discussion is intended to help the student. The committee meeting will likely last 1-1.5 hrs.

At the conclusion of each meeting, the student should have a clear understanding of the committee's recommendations for future experiments, data analyses, etc. Do not leave a committee meeting without obtaining such a clear view. Do not hesitate to ask for clarification of the committee's recommendation(s) and make sure, with the advisor's assistance, that there is a consensus among the committee members regarding such recommendations.

For each meeting, the student must send his or her pre-meeting Student Progress Update to the committee members at least three days before the meeting.

Remember, these goals are not contracts; they are simply to help the student plan the next six months. The goals need not all be met before scheduling the next committee meeting. The committee expects that unforeseen problems or changes in the direction of the student's research will occur. An important function of the committee is to help the student to rise to meet these challenges.

Appendix 6
Instructions for Preparation of the Dissertation

BASIC REQUIREMENTS

The three most important requirements for preparation of the dissertation are:

1. The dissertation must be an original document written by the student.
2. The dissertation must be clearly written, grammatically correct and free of typographical errors.
3. Students may not simply bind their publications together in lieu of writing a thesis, but a separate, complete document should be produced describing their completed work. Material from their previous publications or the work of others may be included if it meets the requirements below.

Students are encouraged to contact the Center for Academic Excellence (CAE) well in advance of submitting the thesis if they have questions. Students should review the CAE Rush Formatting Manual here https://www.rushu.rush.edu/rush-experience/student-services/center-academic-excellence/cae- manuals-handouts-and-tools

Inclusion of material previously published *by the student*

The spirit of the dissertation is that it is the student's own work, which can be complex in this age of team science. Work taken from publications authored or co-authored by the student may be included in the thesis, but the following rules apply:

- Keep in mind that the student's Advisor will be asked to confirm that the student contributed substantially to any text or figures included in the thesis.
- If the work is already published, copyright release from the publisher must be secured.
- If the dissertation includes text or a figure which is part of the student's publication, but the work was done by someone other than the student, permission must be obtained from the individual and explicitly noted (e.g., "Used with permission…") in the text or figure legend, as appropriate, and the role played by the other individual must also be clearly acknowledged in the text/figure legend.
- The *Introduction* (first chapter) and *Discussion* (last chapter) of the dissertation must be the student's own work and **not taken verbatim** from any publication.
- *Materials and Methods* and *Results* sections may include text and figures taken verbatim from the student's previously published work. The complete reference and permission of the copyright holder to use the material must be cited.
- Students may use their publication(s) to form the basis of a chapter(s) -- the following rules apply:
- Note at the start of the chapter "This chapter is based upon (insert full citation)" and cite the permission of the copyright holder (usually the publisher of the journal) using the language provided by the journal.
- The text must be modified to the same style as the rest of the thesis – there should be good continuity (i.e., flow) between all chapters of the thesis and between each section of a chapter.
- It is permissible to include text from the publication's *Introduction* and *Discussion* in the chapter (note that this is different from the *Introduction* and *Discussion* of the dissertation , which must be the student's own work and not taken verbatim from any publication, as mentioned above).

- The student is responsible for obtaining any necessary permission that is required to use previously published work. Journals' websites will likely provide specific guidance for obtaining such permission. Please note that this process may take several weeks.

Inclusion of the published work *of others*

- Textual material taken from publications ***not*** authored by the student may be included if it is indented 1/2 inch from the left margin, single-spaced, and properly referenced at the end of the text and in the bibliography.
- Any reproduced text should generally be limited and have a clear purpose other than substituting for text that would normally be expected to be written by the author of an original thesis.
- Figures from the work of others also may be included if clearly indicated, permission gained and referenced in the figure legend.
- The student is responsible for obtaining any necessary permission to use figures or text from the copyright owner and submitting it along with the thesis.

Appendix 7

Guidelines for the PhD Defense

- The purpose of the defense is to provide a consistent and complete evaluation of the dissertation and the student's understanding of the research, as well as the student's ability to report information to the scientific community in a well-organized and professional manner.

- The defense consists of two parts: a public and closed presentation on campus. In the public defense, the student will make a 45 to 60-minute oral presentation, including a detailed description of the background, hypothesis, rationale and corresponding approach/methods, results, and conclusions appropriate to the research. This will be presented to the audience live, not pre-recorded. Following the presentation, the student will respond to questions from the audience.

- Immediately thereafter, the Advisory Committee will examine the student on the thesis in a closed meeting. The student's Advisory Committee Chair will serve as moderator of the closed meeting. The student will be expected to respond to questions from those attending on any aspect of the written dissertation or the material presented at the public presentation.

- The Committee may conclude that the student has passed, or it may require additional research, modifications to the dissertation, and/or another defense.

- Following a successful defense or successful completion of the recommendations of the Committee, the Committee Chair, Research Advisor or student will submit the *Results of the Defense* and a copy of the final thesis to the Program Director within 7 days of the defense or completed edits. The student and all members of the student's committee must be copied on any communication.

- Fill out the Dissertation approval form to be sent for signatures. The Dissertation approval form will be routed to everyone listed via DocuSign by the Manager of Research & Academic Affairs. After the student has been notified that the approval form has been signed by all parties, the student must upload the completed form and approved final thesis to ProQuest. The Center of Academic Excellence is in charge of checking format and also checking for plagiarism and for scientific misconduct through image duplications.

- The next form is the Degree Approval Form and that is given to the Manager of Research & Academic Affairs by the Registrar's Office. This form will also be sent out via DocuSign for degree conferral.