Table of Contents

MISSION STATEMENT

The mission of the Graduate Program in Pathobiology and Translational Biosciences is to develop our students into independent scientists prepared to pursue a diversity of careers. The end goal is for our graduates to be capable of elucidating the mechanisms and origins of human disease at the molecular and/or organismal level. Additionally, the Graduate Program will provide students the opportunity to translate mechanistic insights gained at the bench to clinically relevant applications. Robust collaborations with faculty from Pathology and other disciplines, as well as other graduate students and alumni allow, us to keep the Pathology Graduate Program at the forefront of the continuously evolving biomedical sciences.

PROGRAM GOALS STATEMENT

To prepare our graduates to be capable of elucidating the mechanisms and origins of human disease at the molecular and /or organismal level.

To have students graduate with a Ph.D. degree in Pathology, able to demonstrate the skills and knowledge necessary to translate the research, writing, leadership skills and mechanistic insights gained at the bench to clinically relevant applications in academia, private industry research labs or government agencies.

History of the Graduate Program and Leadership

The graduate program in Pathology was established in the Department of Pathology in the early 1960's shortly after the arrival of the second chairman, Dr. Thomas Kinney. This graduate program was intended to train M.D.-Ph.D. physician-scientists, Ph.D. investigators and a limited number of Masters of Science investigators to solve fundamental problems in experimental pathology. The first Director of the Graduate Studies, (DGS) was Dr. Benjamin Trump. Among the candidates produced during the early years of the Program were Salvatore Pizzo, M.D., Ph.D., the past Chairman of the Department; Doyle Graham, M.D., Ph.D., Emeritus Professor, former Professor and Chairman of the Department of Pathology at Vanderbilt University and former Dean of Medical Education, Duke University-National University of Singapore, and Fred Sanfilippo, M.D., Ph.D., former Professor and Chairman of the Department of Pathology at Johns Hopkins, Dean of Medical Education, Ohio State University, and currently Director of the Emory-Georgia Tech Healthcare Innovation Program at Emory University. Subsequent Directors of Graduate Studies included Dr. Joachim Sommer, a noted cell biologist and cardiovascular pathologist. From 1977-1991, Darell D. Bigner, M.D., Ph.D., presently the Director of the Preston Robert Tisch Brain Tumor Center at Duke, Edwin L. Jones, Jr. and Lucille Finch Jones Cancer Research Professor of Pathology, Chief, Preuss Laboratory for Brain Tumor Research, Scientific Coordinator, Cancer Center Isolation Facility Shared Resource, Professor of Experimental Surgery, Professor of Neurosurgery, and Professor of Pathology, assumed this responsibility. From 1991 to 1995, one of the first tenure-track Ph.D. appointees of the Department of Pathology, Dr. Guy Salveson, was named DGS. With Dr. Salveson's departure to another institution, Dr. Bigner resumed the responsibilities as Director of the Graduate Program until Laura P. Hale, M.D. Ph.D. assumed this role in 1996. Dr. Hale, an immunologist and a board-certified pathologist, made significant improvements to the graduate curriculum, specifically with the revival of requirements for coursework in histology (Introduction to Systemic Histology, PTH725) and pathology (General Pathology, PTH750), creation of the departmental flagship course, Molecular Aspects of Disease (PTH785), and reinstitution of a weekly graduate student seminar (PTH855). In January 2000, the current DGS Dr. Soman Abraham, who specializes in molecular and immune aspects of host-pathogen interactions, assumed the role of Director of the Graduate Program. Under his leadership, two courses have been added to the curriculum, Animal Models in Translational Research (PTH735) and Basic Biology of Cells as a Function of Age (PTH787D). Dr. Abraham has guided and grown the program from an average of 6 students and 10 faculty to the current level of 27 students (60% females and 15% underrepresented minorities) and 59 graduate faculty (9 primary and 50 secondary) from a wide range of clinical and basic science departments.

Additionally, in 2024 under the direction of Dr. Soman Abraham the graduate program in Pathology received the final approval for a highly anticipated name change. As of May 2024, the Pathology PhD. Program is now officially the Graduate Program in Pathobiology and Translational Biosciences.

About the Pathology PhD Program

Pathology is the only clinical department at Duke University to award a PhD. degree, so many faculty members from other clinical departments who wish to mentor Ph.D. students do so by joining our graduate faculty. Thus, our large pool of graduate faculty originates from Departments of Surgery, Medicine, Neurosurgery, Pediatrics, Ophthalmology, Dermatology, Neurology, Orthopedic Surgery, Radiation Oncology, etc. As a result, our students are exposed to research targeting a broad range of human diseases at the molecular, cellular, tissue, or organismic levels. Research topics covered include cancer biology, genomics, host-pathogen interactions, inflammation, immunology, neurological degenerative brain disease, aberrant signal transduction and disease, immunotherapy, and vaccine design. The Department of Pathology does not discriminate between primary and secondary faculty with regard to student training. Students have an equal opportunity to train in the laboratories of primary and secondary faculty. The departmental business offices, the office of the Chair, and some research laboratories are located in the Davison Building of the historic old Duke Hospital. Our faculty also have labs in the Sands Research Building, the Jones Research Building, the Medical Science Research Building, and the Snyderman Building, as well as others. Since many of the Pathology graduate faculty are also affiliated with other research institutes or centers that have specific campus locations, research laboratories are located at multiple different sites on and off campus. A brief description of the research of the various faculty in the program is given under the graduate faculty listing on our website www.pathology.duke.edu

CONTACTS

Chairman

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Important Dates for Pathology Students

(Note that dates are updated annually and you should confirm on the Graduate School website https://gradschool.duke.edu/)

1st Year

Prior to the start of the year, set up Training Tracking tool known as T3 https://t3.medschool.duke.edu/

Begin to set up Rotations as early as possible. Each rotation should be entered in T3 at least 2 weeks prior to the start date. Your dates are general OBGE PhD

General OBGE PhD program rotation dates	MSTP rotation dates	BST and CNAP rotation dates
R1: 26 Aug – 18 Oct 2024	R1: 2 Sept – 27 Sept 2024	R1: 26 Aug – 13 Dec 2024
R2: 21 Oct – 13 Dec 2024	R2: 30 Sept – 25 Oct 2024	R2: 6 Jan – 25 Apr 2025
R3: 6 Jan – 28 Feb 2025	R3: 28 Oct – 22 Nov 2024	R3: 28 Apr – 15 Aug 2025 (optional)
R4: 3 Mar – 25 Apr 2025	R4: 25 Nov – 20 Dec 2024	
R5: 28 Apr – 20 Jun 2025 (optional)	R5: 6 Jan – 31 Jan 2025	
	R6: 3 Feb – 28 Feb 2025	

August 19th	Graduate School Orientation and Required BIOTRAIN Courses
August 22nd	Pathology Orientation 11:00 AM GSRB II Room 4002
Begins August 26	BIOTRAIN 701: Foundations of Professionalism for Biomedical Scientists
April 1- June 30	Lab choices are approved by the DGS, affiliation paperwork and mentoring agreement signed by student and mentor and returned to DGSA

2nd Year- Timeline Guide

Before October 1	Students and advisor select Supervisory Committee and submit the names to the DGSA who will set up a meeting with DGS to approve
	Students and advisor develop an Individual Development Plan (IDP). This plan should be reviewed at each annual committee meeting.

Between December and April	Student completes annual committee meeting or pre-prelim During each committee meeting • Student and committee members should review IDP • Student advisor will have an opportunity to meet with committee members without the student present • Student will have an opportunity to meet with committee members without the advisor present

3rd Year- Timeline Guide

Before September 15	Students schedule oral preliminary exam and informs DGSA of date. DGSA enters committee in T3 and student completes the Task by adding documents, date, time, and location. See T3 trainee guide. (Committee approval form must be approved by the Dean no less than 30 days before the exam date). • Students should request that committee members bring their laptops to submit grades immediately after the exam
Before October 10	Students submit written proposal to Mentor and Prelim Committee. Written proposal must be submitted 10 days before oral preliminary exam. Students should request written questions from each committee members within two (2) days after submitting written exam documents. Student should return the written answers at least 24 hours before the preliminary exam.
Before December 31	Prelim Committee meets and administers oral preliminary exam using T3**.** ***Note- the Prelim exam must be scheduled and passed by the last day of the spring semester of the third year of study, or an extension request (rarely granted) must be submitted and approved by The Graduate School.**

4th + Years- Timeline Guide

Before February 1st	Students schedule Annual Committee Meeting with Supervisory Committee During each committee meeting • Student and committee members should review IDP • Student advisor will have an opportunity to meet with committee members without the student present • Student will have an opportunity to meet with committee members without the advisor present
Before May 1st	Student/mentor schedules and completes Annual Progress Meeting using T3. All committee members must approve the student's request to defend in T3.
Dissertation Defense	**at least 6 months in advance, read all requirements on The Graduate School Website** https://gradschool.duke.edu/academics/preparing-graduate, and T3 https://t3.medschool.duke.edu/. Allow time to confirm defense committee with TGS. Notify DGSA of plans to defend. • Students should request that committee members bring their laptops to submit grades immediately after the exam

Graduate Faculty

Name	Rank	Primary Department
Amy McNulty, PhD	Associate Professor	Orthopedic Surgery
Anthony Filiano PHD	Assistant Professor	Neurosurgery
Benjamin A. Alman, MD	Professor	Orthopedic Surgery
Carolyn Coyne, PhD	Professor	Integrative Immunobiology
Chang-Lung Lee, PhD	Assistant Professor	Radiation Oncology
David Ashley, MD	Professor	Neuro-Oncology
David Howell, MD, PhD	Professor	Pathology
Everardo Macias, PhD	Assistant Professor	Pathology
Gayathri Devi, PhD	Professor	Surgery
Giselle Lopez, MD, PhD	Associate Professor	Pathology
Goldis Malek, PhD	Professor	Ophthalmology
Gurpreet Baht, PhD	Associate Professor	Orthopedic Surgery
Herman Staats, PhD	Professor	Pathology
Hui-Kuan Lin, PhD	Professor	Pathology
Jeffrey Marks, PhD	Professor	Surgery
Jennifer Zhang, PhD	Professor	Dermatology
Jiaoti Huang, MD, PhD	Professor	Pathology
Jung Wook Park, PhD	Assistant Professor	Pathology
Kyle Walsh, PhD	Professor	Neurosurgery
Laura Hale, MD, PhD	Professor	Pathology
Laurie Sanders, PhD	Associate Professor	Neurology
Liping Feng	Associate Professor	Obstetrics and Gynecology
Michael Gunn, MD	Professor	Medicine
Mikhail Nikiforov, PhD	Professor	Pathology
Ming Chen, PhD.	Associate Professor	Pathology
Nelson Chao, MD	Professor	Medicine
Ornit Chiba-Falek, PhD	Professor	Neurology
Paloma Liton, PhD	Professor	Ophthalmology
Peter Fecci, MD, PhD	Professor	Neurosurgery
Qianben Wang, PhD	Professor	Pathology
Ravi Karra, MD	Associate Professor	Medicine
Soman N. Abraham, PhD	Professor	Pathology
Thomas Ortel, MD, PhD	Professor	Medicine
Virginia Byers Kraus, MD, PhD	Professor	Medicine
Xunrong Luo, MD, PhD	Professor	Medicine
Yiping He, PhD	Associate Professor	Pathology
Zachary Hartman, PhD	Associate Professor	Surgery

General Information for Graduate Students

Admissions

Described below is the mentoring that is available to students, course work and requirements, lab rotations, choice of labs, preliminary examination, and thesis defense. Graduate students are admitted to the Pathology program through on-line applications to the Graduate School. The graduate student applications are evaluated by a Departmental Admissions Committee consisting of 5-6 Graduate faculty selected by the Director of Graduate Studies (DGS). The selection of prospective students to be interviewed is done through a holistic process using a rubric created by the Office of Biomedical Graduate Education and is based on several criteria: Research Experience (20%), Academic Rating (20%), Personal Statement (20%), Letters of Reference, (20%), Contribution to Community (20%). The GRE exam is optional and if submitted is weighted appropriately with the other metrics. Applicants are invited to submit a short video which is optional.

Based on the evaluation of the Admissions Committee, a select group of prospective students are invited for interviews. Once the interviewing process has been completed the pool of applicants is narrowed down and a small group of applicants who are invited to for a campus visit by the Office of Biomedical Graduate Education. During the visit, prospective student will meet the attend preplanned events with other graduate programs as well events planned by Pathology.

Formal Requirements

The formal requirements for the Ph.D. degree are as follows: (1) successful completion of mandatory and related courses; (2) training in the Responsible Conduct of Research in years 1&3; (3) payment of 6 semesters of full-time tuition (or five if credit for previous graduate work has been approved); (4) Approval of supervisory committee for the student's program of study; (5) continuous registration; (6) successful prelim examination; (7) approved dissertation; and (8) successful final examination. Our current expectation is that each Ph.D. candidate will have a first author paper accepted for publication/published when they go to defend their thesis.

Mentoring

Upon arriving at Duke, new students are advised by the Director of Graduate Studies (DGS) regarding rotation choices, course work, or other academic issues. The students also have the opportunity to meet with the DGS after each rotation to discuss the outcome and to consider alternate options, if needed. Before a student finally settles on a mentor and laboratory, they are encouraged to survey and contact various faculty regarding research opportunities available among the primary and secondary graduate faculty of the program and rotate in at least two labs. Upon joining a lab, all students and mentors are required to read and sign a Mentoring Compact. All Graduate Faculty are required to take mandatory mentor training. The DGS continues to serve as counselor/advisor to students even after they have selected a laboratory. The DGS reviews and approves student thesis committee and deals with a wide variety of student problems and concerns. When students are uncomfortable discussing concerns with their lab mentors or

faculty members who exercise official oversight of their progress, the DGS serves as the graduate student ombudsman and will intervene on behalf of the student. Assisting the DGS is the DGS Assistant who serves as full-time administrator for the Graduate Program in Pathology. The DGSA oversees the substantial administrative responsibilities of the program. The DGSA also serves as a resource for students and faculty and as a liaison to the administrative staff at the Duke Graduate School. The DGSA and the business/ financial manager for the Department of Pathology, provide administrative help and financial guidance.

Additionally, after completing the preliminary exam students will have an opportunity to be paired with a career mentor. These mentors will help students navigating their professional lives outside their primary research lab during graduate training. Career mentors will provide career and professional advice to graduate students as well as emotional support as they navigate through the graduate program.

Core Curriculum

The department offers a program of studies leading to the Ph.D. degree. Students generally enter the program with a bachelor's degree in science, or with a masters or advanced degree in medicine or veterinary science. Typically, 5-6 years are required to complete the Ph.D.; the first two years being primarily devoted to course work (core requirements and electives) and the remaining years to full-time dissertation research. During their third year, the student takes a preliminary exam and advances to candidacy for the Ph.D. degree. Dissertation work culminates in a written dissertation that the student defends orally before their Ph.D. advisory committee. Many of our students are also members of interdepartmental programs: Cell and Molecular Biology, Integrated Program in Toxicology, and the Medical Scientist Training (M.D.-Ph.D.) program. These programs encourage access to researchers throughout the University and facilitate the interdisciplinary studies that have proven so successful at Duke.

Coursework

During the first and second years, required courses include core courses in histology and pathology, a departmental course on molecular aspects of disease, a departmental course on animal models, a departmental course on translational research, and one on cell aging and disease, and various elective courses offered by the different Basic Science Graduate Programs at Duke. In view of the wide diversity in the scope of research offered by our graduate faculty, we have kept mandatory courses to a minimum so that education can be tailored to each student's individual research topic requirements. Our mandatory core courses are:

Introduction to Systemic Histology, (PATHOL725, 2 units). Fall only This course provides a basic foundation in identification of human and murine tissue types, using a lecture-laboratory format. Since 2005, the laboratory has been offered using virtual microscopy. This allows all students to view the same slide at a variety of magnifications using their own laptop computer. In addition to being taken by pathology graduate students, the course has been highly subscribed to by graduate students outside of the department, attesting to the quality of both the material and the teaching offered.

Animal Models in Translational Research (PATHOL 735S, 3 units). Fall only. The goal of this course is to give students a working knowledge of the use of animal models in research, types of models and how to choose for translational relevance. Topics include the regulations governing the use of animals in research, principles of in vivo experimental design, as well as best practices for data collection, interpretation and reporting during animal study conduct. Students will be exposed to the principal elements that impart variability and bias in the generation of animal study data, and will learn best practices for the conduct of high-quality animal studies that lead to reproducible data.

General Pathology (PATHOL750, 3 units). Spring only. This course provides a basic introduction to pathology, organized around general pathologic processes. These include cell death and response to injury, hemodynamic/vascular processes, infectious, inflammatory, and immunologic diseases, neoplasia, environmental, nutritional, and genetic diseases. Completion of the PATHOL725 histology course is a prerequisite for this course. Most of the students who take the prerequisite course go on to take this course as well. The material covered is similar to what is covered in a medical school pathology course, but with stronger emphasis on basic science mechanisms causing disease, rather than diagnostic considerations. The course also incorporates a lecture-laboratory format. Laboratory sessions involve microscopic examination of diseased tissues using virtual microscopy and gross examination of human organ specimens.

Molecular Aspects of Disease (PATHOL785, 3 Units). Spring only. The goal of this course is to expose students to basic techniques of molecular biology and to gain an understanding for the molecular basics of specific diseases. This course has a paper-discussion format, where papers selected by various pathology graduate faculty are presented and discussed in detail by teams of student. These discussions are moderated by faculty.

Basic Biology of Cells as a Function of Age; Implication for Disease (PATHOL787D, 3 units) Biennial course. The objective of this course is to review the fundamentals of cell biology as a function of age and their contribution to pathologies associated with age-related diseases. This course will cover a wide range of principles, from concepts and theories of aging, to experimental models, cell regulation and signaling, and impact of age-related cellular changes on metabolism and disease development.

PATHOL 855S is a year-long course designed to provide students instruction and practice in presenting their research to a broad scientific audience as well as critiquing the research of their peers. All students enrolled in the Pathology Ph.D. Program are required to register for this course each semester of their graduate studies. At the start of the course, students receive instruction on proper seminar design and delivery. Each student is then assigned a 30-60 minute time slot and gives a presentation on his/her research in a formal setting to their peers and Pathology Graduate faculty. Aspects of the presentation are assessed by both faculty and graduate students and constructive feedback is provided to the graduate student following the presentation. As a result of the strong emphasis on the importance of oral presentation of research, remarkable improvements in the quality and contents of student presentations have been observed each year.

Elective Courses A wide range of electives are offered to our graduate students to select from. Students usually take 8 - 12 units of courses per semester in Years 1 and 2. Some of the more popular electives are IMMUNOL544 (3 units) Principles of Immunology, CELLBIO760 (3 units) Cellular Signaling, CMB778 (4 units) Genetic Approaches to the Solution of Biological Problems, MOLCAN819 (2 units) Cancer as a Disease. Others include CELLBIO204 (3 units) Cell and Molecular Physiology, CMB658 (2 units) Structural Biochemistry 1 (half semester course), PHARM533 (4 units) Essentials of Pharmacology and Toxicology, IMMUNOL800 (3 units) Comprehensive Immunology, IMMUNOL900 (2 units) Tumor Immunology, IMMUNOL 252 (3 units) Virology, MGM282 (3 units) Microbial Pathogenesis, and PHARM755 (3 units) Neurotoxicology.

By the end of the second year, students have usually completed the required number of non-research course credits and gained a sound theoretical basis for their experimental studies. At this stage students are required to decide upon a thesis project and prepare a written proposal in the form of a grant application. The defense of this proposal before a committee of five faculty members constitutes the preliminary examination (described later in greater detail).

Selection of a Ph.D. Dissertation Advisor

Before a student selects a faculty mentor to supervise their graduate research, they are encouraged to survey research opportunities available in the departments by rotating through at least 3 and up to 5 laboratories. See rotation schedule on page 6. The selection of laboratories is made from a list of faculty members wishing to participate in the student rotations. This information on research interests of the faculty is available on the OBGE site known as T3. During rotation, each student is considered a regular member of the laboratory and is required to routinely attend laboratory meetings/seminars as advised by the hosting faculty member. At the end of each rotation the faculty advisor completes a confidential evaluation of the student, and the student is given the opportunity to confidentially evaluate the faculty advisor.

The final selection of a Ph.D. dissertation mentor by the student is made in consultation with the Director of Graduate Studies and with the head of the laboratory in which the student proposes to work. The selection of a permanent Ph.D. dissertation advisor must be made no later than May 31st of the student's first year. The advisor is then entered into T3 by the student. Students are required to register for Independent Study with their advisor each semester and permission numbers are granted by the DGSA.

Graduate Student Committee

As soon as the student has defined their major area of investigation, an advisory committee is selected by the graduate student in consultation with his/her principal advisor, and a Committee Form filled in. This form is available through the DGSA or online here: https://gradschool.duke.edu/sites/default/files/form_committee_approval.pdf

These forms must be submitted through Perceptive Content (a secure data storage base) by the Department's DGSA at least 30 days prior to the prelim exam. A minimum of four members of the Duke graduate faculty must be on the approved preliminary or dissertation committee. There must always be at least two members from the Pathology department, a total of three must be from the primary research field/area, and one, the MAR, must represent a minor area in relation to the student's research. All approved committee members must be present at the exam, in person or over Zoom. The status, in-person or remote must be identified when the committee is loaded into T3 by the DGSA. Original committees must be approved at least 30 days before the milestone exam. The principal advisor of the graduate student acts as the Chairman of the committee.

It is the responsibility of the graduate committee both to evaluate the progress and direction of the student's research and to plan the student's program during the remainder of his/her training period. It is recommended that this committee should counsel students to take advantage of the diversity of educational experiences available in other departments and to take or audit advanced courses and tutorials in specialized areas of interest. The graduate committee functions in both an advisory and in an evaluatory

capacity with the responsibility of recommending that, in the event that the student does not show sufficient research aptitude, the student should either withdraw from the graduate program or seek to obtain a terminal Master's degree. This same committee is the student's preliminary examination committee and examines the student on his/her doctoral dissertation research topic. Each student meets with his/her graduate committee at least once per year with evaluations recorded in T3. Students may choose to meet individually with committee members when they are having trouble with scheduling the group.

Preliminary Examination

The preliminary examination is typically scheduled at the beginning of the third year. This proves adequate time for the student to develop and validate the major tenets of their proposal since the preliminary exam is based on the research topic that the graduate student has selected for his/her thesis project. It is recommended that an initial meeting with the committee be held at least four months prior to the scheduling of the preliminary examination. The purpose of this meeting is to discuss the performance of the student in the classroom and the progress and direction of his/her research. Each student is required to write a proposal describing their proposed Ph.D. research project in the format of an NIH grant proposal (http://grants1.nih.gov/grants/funding/424/index.htm#inst) to include significance, preliminary data and experimental approach. This proposal is submitted to the student's advisory committee at least 10 days prior to the date of the qualifying exam. The written part of the qualifying exam normally consists of 4 questions, one contributed by each member of the advisory committee other than the mentor. Committee members are encouraged to provide 2 questions; if 2 questions are provided, the choice of which question to answer for the written portion of the exam rests with the student. The questions asked are derived from the student's proposal or may explore topics in disease pathogenesis, physiology and cell and molecular biology unrelated to the student's proposal. Answers to the written portion of the qualifying exam are received by each respective committee member prior to the scheduled qualifying exam committee meeting.

At the scheduled qualifying exam committee meeting, advisory committee members decide whether the student's performance on the written preliminary portion of the qualifying exam is adequate. At the discretion of the committee, the student may be directed to repeat the written exam after additional coursework and study rather than proceeding directly to the oral portion of the exam. The oral examination is based upon the content of the Ph.D. proposal and the written preliminary portion of the qualifying exam. It is normally anticipated that the oral exam will last from 45 minutes to 2 hours. The preliminary examination are conducted under the rules of the Graduate School,

with at least 4 affirmative votes (out of the 5 committee members) being required for passing and a positive vote by the Chair of the committee required for passing. The voting to pass or fail the student at the preliminary examination will be recorded in T3. Students with adequate performance on both written and oral portions of the qualifying exam are admitted to candidacy for the Ph.D. degree.

If a student fails the preliminary examination, the graduate committee will decide whether or not a retake is permissible. With the consent of their graduate committee and the Dean of the Graduate School, the student may apply to take a second examination no earlier than 3 months from their first attempt. Students with unsatisfactory performance on the oral presentation or on both oral and written portions of the second preliminary exam are considered as candidates for the Master's degree only.

Thesis Defense and Dissertation

At least 2 months prior to the scheduling of the Ph.D. dissertation defense examination, the student seeks a meeting of his/her graduate committee to gain approval from the entire committee to proceed with preparations for the initial defense. The student must notify the Director of Graduate Studies Assistant of the committee's approval to defend and provide details for the dissertation seminar to be entered in T3. It is the responsibility of the student and their mentor to schedule this seminar at a time that will ensure maximum attendance by members of the department and university community.

The final Ph.D. dissertation embodies the results of significant original research and is expected to be written in a mature and competent style. Basic requirements for preparing the dissertation and for its defense are as described by the Graduate School in their website (http://gradschool.duke.edu/). Normally, the dissertation is presented and accepted within 2-3 calendar years after the preliminary examination is passed.

Please note:

* **No thesis defense (or preliminary examination) can be scheduled when University classes are not in session**. See the 2024-2025 Academic Calendar for dates.

* A defense announcement is automatically generated in T3 and sent to the graduate school. See instructions in Trainee User Guide located in the Resource Library of T3 (https://t3.medschool.duke.edu/). In addition, a separate announcement will be created by the DGSA and shared with members of the Pathology department.

Equity Diversity and Inclusion

The Department of Pathology at Duke aspires to create a community built on collaboration, innovation, creativity, and belonging. Our collective success depends on the robust exchange of ideas—an exchange that is best when the rich diversity of our perspectives, backgrounds, and experiences flourishes. To achieve this exchange, it is essential that all members of our program feel secure and welcome, that the contributions of all individuals are respected, and that all voices are heard. All members of our program have a responsibility to uphold these values. The Department of Pathology has formed an Equity Diversity and Inclusion Committee and two students for Ph.D. students represent our program on that committee. This committee has been charged with creating a plan of action with tangible and achievable improvements in mind. By creating this committee, the department is acknowledging that while we feel healthy and look healthy already, probing may reveal more, and regular check-ups are in the best interests of the "body".

The School of Medicine also has an office dedicated to promoting diversity and inclusion called IDEALS an acronym which stands for
Inclusion, **D**iversity, **E**quity, **A**dvancement, and **L**eadership in the **S**ciences
IDEALS office information:

Johnna Frierson, Ph.D.
Associate Dean of Equity, Diversity, and Inclusion for the Basic Sciences;
Director, The IDEALS Office

The IDEALS Office:
Duke University School of Medicine
Room 301A, Medical Science Research Building I
Office: 919 660 8412

For scheduling please contact:
Claire Patterson, IDEALS Office Staff Assistant
Phone: (919) 613-1825
Email: claire.patterson@duke.edu

Evaluation of Performance

The performance of graduate students is constantly monitored during their Ph.D. training. These assessments are made at each student committee meeting and during the preliminary exam and the thesis defense. The teaching faculty and the leadership are also evaluated continually with the goal of improving the learning experience of our students. For example, at the end of each course, OBGE distributes a course evaluation to be completed by all students. This feedback is invaluable to both course directors and teaching faculty in making courses more effective. Additionally, each year the DGS and DGSA meet privately with all of the pathology graduate students to discuss issues of concern and to obtain feedback regarding the program in a Town Hall meeting. Several important changes to the structure and running of the program have been made based on this feedback. Finally, approximately every five years, the department is subject to a rigorous external review. The review is required by the Executive Committee of the Graduate Faculty and is conducted by a panel appointed by the Dean of the School of Medicine in consultation with the Provost.

Departmental Seminars

Students in the Graduate Program in Pathobiology and Translational Biosciences have a broad range of excellent seminars to choose from. In addition to the noon Pathology Grand Rounds organized by the Department every Friday and the Thursday 4:00 pm Graduate Seminar Series (PTH855 registration required each semester), the students in the program are encouraged to attend campus-wide seminars of interest organized by various other Departments and umbrella programs such as Immunology, Biochemistry, Neurobiology, MGM, UPGG, and BME. Details can be found on the Duke Event Calendar.

Annual Retreat

Approximately every other year, the Department of Pathology hosts a full day scientific retreat at a local venue. The retreat brings the research and clinical sides of the department together for scientific talks including a key note address by a guest speaker. Talks are followed by a poster session where all Ph.D. students in years 3 and up as well as residents, fellows, and post-docs present their work for an opportunity to be awarded one of two $1,000.00 travel awards. This event provides a great opportunity for the entire graduate program to meet and interact with each other and with the students and faculty of the clinical areas including the PA students and residents, promoting a collegial atmosphere that potentially can result in useful collaborations. This meeting also provides entering students a chance to network with prospective mentors and other members of the research laboratories.

Responsible Conduct of Research (RCR)

RCR training is a formal requirement of the Ph.D. degree in every department and program of study at Duke. This reflects our expectation that every doctoral candidate will be well qualified to address the growing ethical challenges that arise when teaching or conducting scholarly research. We collaborate with faculty and staff across Duke University and Duke University School of Medicine, with experts from nearby institutions in the Research Triangle, and with national and federal organizations including the Council of Graduate Schools and the U.S. Office of Research Integrity.

For information on RCR for please visit the Graduate School website:

https://gradschool.duke.edu/professional-development/programs/responsible-conduct-research

For the whole picture, go here:

https://medschool.duke.edu/education/biomedical-phd-programs/office-biomedical-graduate-education/responsible-conduct-research

Graduate Funding at Duke

It is the expectation of the Graduate School that Ph.D. students will be financially supported for the majority of the time they are registered and working toward their degree. Generally speaking, tuition and fees are covered by the Graduate School for a Ph.D. student's first five years. After that, most of the cost for tuition and fees should be covered by external or departmental funding obtained by the student.

Graduate students are supported in a variety of ways. Some will receive fellowships from their departments; others will receive competitive fellowships from the Graduate School, other governmental, private sources or from a faculty member's research funds.

While financial commitments are made to students for a set number of years, it is important to understand that the overall graduate awards budget is dependent on a significant number of students obtaining external fellowships. We expect all students to make a good faith effort to obtain external support at some point during their funding period. External grants and fellowships provide benefit to students because they bring distinction, and opportunities to practice grant-writing skills that could serve students well in their future careers.

An annual re-appointment letter will be sent to each student before the start of each new academic year. Details of financial support can be found on the Graduate School Website: https://gradschool.duke.edu/financial-support

External Awards

In addition to those awards available through the University, applicants are urged to compete for national and foundation awards available for graduate study. Duke's Office of Research Support lists awards available from a variety of federal and private sources, as well as awards funded by the University. External awards typically replace departmental or Graduate School awards.

Duke University
Graduate Program in
Pathobiology and Translational Biosciences
Student Handbook Acknowledgement Receipt

My signature indicates that I have received and had an opportunity to review the student handbook.

I understand that a signed copy of this "Acknowledgement Receipt" will be placed in my student file. I also understand that additional information about graduate school policies, academics, admissions, financial support, student life and professional development are available on the graduate school's website at https://gradschool.duke.edu/.

Students Name **Date**

Students Signature