

IBS Student Handbook (2019)

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Biomedical Science PhD programs at George Washington University stem from the Institute for Biomedical Sciences (IBS). This interdisciplinary umbrella admissions and oversight program brings together a wealth of research opportunities at the GW School of Medicine & Health Sciences, the Columbian College of Arts & Sciences and the [Children's National Health System](#).

The common IBS core curriculum includes interdisciplinary cell and molecular biology and physiology courses, biostatistics, and professional skill courses in scientific writing, biomedical careers and responsible conduct. Foundation courses in each PhD program begin in the second semester. Students participate in three rotations in the first year of graduate training, in order to identify a faculty research advisor. Program-specific graduate program directors guide and oversee students through completion of remaining coursework, a grant-style qualifier

examination, and dissertation research. Over 100 faculty members participate in one or more of the 5 PhD programs. Our current student enrollment numbers approximately 70. Our alumni go on to research careers in academia, industry/biotech and government/nonprofit, as well as careers in science communication, science teaching and science policy.

Features of Biomedical sciences PhD programs in the IBS

The admissions committee seeks students with broad interests in research. Our PhD programs use the George Washington Columbian College of Arts and Sciences graduate application. Candidates are accepted after review of the written application and on-campus interview. The Ph.D. programs in the biomedical sciences require year-round participation beginning with the fall semester of the entering year.

The common IBS core curriculum includes interdisciplinary cell and molecular biology and physiology courses, biostatistics, and professional skill courses in scientific writing, biomedical careers and responsible conduct. Foundation courses in each PhD program begin in the second semester. The required and elective didactic work is designed to meet the specific program's requirements and the student's needs in preparation for dissertation research. Students are expected to complete approximately 12 credits of course work in each semester for the first two years (or 48 hours before the qualifier and full-time dissertation research).

Research rotations are critical for students in becoming familiar with ongoing research projects and choosing their dissertation laboratory. In addition, rotations broaden student research skills, and rotation mentors may become research collaborators and committee members. Many students and mentors informed by the [Compact Between Graduate Students and Their Research Advisors](#).

Three, ten-week rotations are carried out in the first year, and must be performed in different laboratories. All regular faculty members in the IBS may serve as laboratory rotation mentors, and only one rotation student may be in a faculty lab at a time. For students who have previous experience with an IBS trainer laboratory, only one rotation may be performed in that laboratory. By the end of the first year, it is expected that the student will have selected a program and will have identified a research mentor and PhD program.

Students complete a grant-style qualifier examination at the end of the second year. The examination is “on-topic”, allowing students to prepare a strong thesis proposal. Following successful passage, PhD candidates form a thesis advisory committee consisting of the research mentor and at least two other faculty members.

After successful completion of the qualifier, students pursue dissertation research, with periodic thesis advisory committee meetings and reports due every semester to ensure good progress. Following satisfactory completion of the dissertation and oral defense of the dissertation research, the PhD is conferred.

Learning Outcomes for Biomedical Science PhD

- Discipline-specific knowledge, including a review of existing literature, an understanding of current working models and the articulation of gaps in knowledge.
- Research skill development, including the design of rigorous experiments to test hypotheses, technically perform reproducible studies, critically analyze and interpret data
- Research communication skills, including the ability to write and speak effectively about science and research to a variety of audiences

- Research leadership, including the ability to form and manage teams of diverse participants to achieve project goals, self-assessment to identify interests and strengths, and agency to seek professional and career opportunities.
- Research professionalism, including the responsible conduct of research, authorship, research with human, animal or large datasets, laboratory safety and skills as mentor and mentee.

PhD Programs and Graduate Program Advisors

PhD programs in the biomedical sciences are designed to meet key goals in contemporary graduate research education including 1) discipline-specific knowledge, 2) research skill development, 3) research communication skills, 4) research leadership and 5) research professionalism, and to prepare graduates for a variety of research careers.

Academic advising, available research rotation faculty, and progress in each PhD program is overseen by Graduate Program Directors (GPDs), who implement important IBS policies and procedures, with oversight from the IBS Director. Students are assigned a graduate program advisor upon arrival, based on initial interests, and should contact advisors in other areas at any time as desired for information. At least one GPD is available on the Foggy Bottom and the Children's National campuses. Once a PhD program is selected, the associated GPD will ensure timely progress.

Cancer Biology PhD Program

The Cancer Biology PhD Program is designed to develop research scientists with expertise in the principles of cancer immunology and immunotherapy; targeted therapies and epigenetics; and cancer engineering and technology. Contemporary approaches include tools of cell and molecular biology, molecular signaling, genomics, proteomics, epigenetics, flow cytometry and high resolution imaging.

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Genomics and Bioinformatics PhD Program

The Genomics and Bioinformatics Ph.D. program is designed to develop research scientists with expertise in the principles and methods of genetic and epigenetic basis of diseases, chromatin remodeling, post-translational modification, systems and "omics" approaches to complex disorders including autism, cardiovascular and pulmonary diseases. Approaches include genomics, bioinformatics, micro RNA processing, biomarkers, molecular biology, and next-gen sequencing as applied to the study of various diseases.

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Microbiology and Immunology PhD Program

The Microbiology and Immunology PhD program is designed to develop research scientists in the areas of molecular virology, molecular parasitology, and immunology. The program's current research strengths and training opportunities include the study of host-pathogen relationships, inflammation and inflammatory disorders, vaccine development, cancer immunology, molecular parasitology, HIV and HIV immune response, and microbial genomics and proteomics.

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Neuroscience PhD Program

The Neuroscience PhD program is designed to develop research scientists in the areas of how brains work, with research in neurotransmitter signaling to neurodevelopmental disorders to developmental neurobiology. Study ranges from anatomical organization to neurotransmitter signaling to molecular activity of ion channels; synaptic, network and metabolic changes in the living brain, under the microscope, or in the culture dish; manipulating the genome in animal models to ask how brain circuits develop; studying fossils that indicate how brains evolved, and mapping human genes, as well as human brain structure, activity and behavior to understand function and dysfunction in our own brains.

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Pharmacology and Physiology PhD Program

The Pharmacology and Physiology PhD program is designed to develop research scientists in research programs focused on cardiovascular and renal systems, including autonomic and respiratory control of brainstem function, cardiovascular function, neural control of blood pressure and heart rate, post-traumatic stress, hypertension and pharmacogenetic determinants of drug response.

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Detailed Curriculum

General graduate policies are bound by the GW [Doctoral Student Handbook](#) and this IBS program information. The program of study for PhD programs is outlined [here](#).

The First Year Schedule of Classes

In the fall semester, students take Genes to Cells, Systems Physiology, and Molecular Basis of Human Disease, along with the first lab rotation (approximately September-December; use the [Lab Rotation Form](#)) and the first career skills course, which focuses on scientific writing and speaking.

Fall, First Year

- Genes to Cells (3 credits)
- Systems Physiology (3 credits)
- Molecular basis of Human Disease (3 credits)
- First Laboratory Rotation (2 credit)
- Career Skills: Scientific Writing and Speaking (1 credit)

The IBS office will register all first-year students through our internal process for the Fall semester, so students do not have to take any actions on this. Students may not enroll part-time in the core curriculum without special permission, or take BMSC 8210, 8212 out of sequence. Any fees incurred by a student for late action (registration, drop-add, withdrawal, etc.) shall be paid by the student and not the IBS.

2018 Fall Semester		
COURSE	TIME	LOCATION
BMSC 8210 – Genes To Cells	Mon-Tues-Wed 8:30-10:00am [8/27-10/10]	Ross 643
BMSC 8212 – Systems Physiology	Mon-Tues-Wed 8:30-10:00am [10/15-12/10]	Ross 643
BMSC 8230 – Molecular Basis of Human Disease	Mon-Wed 10:30am-12:00pm	Ross 643
BMSC 8216 – Scientific Writing	Tues 10:30am-12:00pm	Ross 643
BMSC 8215 – Lab Rotations	Rotation # 1 mentor beginning Sept 17	

Laboratory Rotations

Research rotations are critical for students in identifying important research questions, choosing the dissertation lab, and selecting thesis committee members and collaborators. In addition, rotations broaden the student research experience and familiarize students with on-going research projects.

- Three, ten-week rotations are carried out in the first year, and must be performed in three different laboratories. Exceptions will not be made. All regular faculty members in the IBS may serve as laboratory rotation mentors, and only one rotation student may be in a faculty lab at a time. The student is expected to be in the lab 30 hrs/week. A fourth rotation will be granted only in the event that the student did not find a suitable mentor. The mentor will guide the student during the rotation by having frequent meetings to discuss the research project both conceptually and experimentally.
- For any students who have previous experience with an IBS trainer laboratory, only one rotation may be performed in that laboratory. By the end of the first year, it is expected that the student will have selected a program and will have identified a research mentor and PhD program.

Setting up a Rotation

- Students will be assigned initial Graduate Program Directors based on their interests, and should seek advice of any GPD for potential rotations in the same or other areas.
- Laboratory rotations can occur only with [IBS research faculty](#). Students will receive a list of faculty seeking students at the beginning of the year.
- Students must take the initiative to contact potential rotation advisors. This is often done by email introductions with an associated CV. If you do not receive a response within 48 hours, follow up with another email. Prepare for your meeting by reading the mentor's latest papers, available from PubMed.
- At the meeting, be ready to discuss your background, research experience, any abstract or papers you have published. Ask the mentor about potential rotation projects, experimental procedures used in the laboratory, and share with the mentor your research interests. Ask how his/her lab operates, such that you can assess whether you will enjoy rotating in this laboratory. Finally, ask if the mentor anticipates an opening for a potential student position in his/her laboratory.
- Once you have confirmed your rotation decision with the mentor, email the other mentors you interviewed with of your decision, so they might offer the rotation slot to another student. Remember, a mentor can only accept one first year graduate student at a time to rotate in his/her laboratory.
- Have the lab rotation mentor sign the BMSC 8215 Lab Rotation Commitment Form. Sign it and return the signed form the IBS office

Rotation Presentations and Grading

- BMSC 8215 Laboratory Rotations is a pass/fail course.
- At the end of each rotation, all first year students will give a brief power point presentation (maximum 8 slides), which includes a brief introduction and main goal of the research project, methods, results, discussion and major conclusions. Each presentation will be followed by a short question session.
- In-class PowerPoint presentations are **MANDATORY**, and therefore failure to give an in-class presentation will result in **no credit** for the course (BMSC 8215),
- Students are also required to submit a lab report, according to the PNAS guidelines. The mentor will guide the writing and revision of the student's report. The research report will be composed of: 1) a short introduction to give a brief background on the system studied, what is known in the field, and outline the major objective of the study. 2) Materials & Methods: to describe the different methods used in the study by following the guidelines of a PNAS manuscript. 3) Results & Discussion: to describe the results obtained during the study and discuss them in the context of the field of interest. 4) References. 5) Figures & Tables: each figure or table should include a title and a complete legend (see PNAS guidelines). The lab report must be formatted as a PNAS manuscript, meaning two column- format and figures integrated in the paper.

Rotation Grading policy:

To receive credit for your rotation, all the following requirements **must** be fulfilled:

- a. Spend 30 hours per week in the laboratory.
- b. Objectives set by mentors for the rotation must be satisfied.
- c. The signed mentor evaluation form must be turned in on due date
- d. PowerPoint presentations must be given in class and on the day specified
- e. Laboratory rotation reports must be turned on due date (see GWU rotation schedule 2017-2018 handout and IBS website).

Spring Semester

In the spring semester, students take the second lab rotation (approximately January-April; [use the Lab Rotation Form](#)), and the second career skills course, which focuses on ethics and grantsmanship. They also begin to choose from courses specific to the various PhD programs.

In the “summer” of the first year (approximately April-June; use the [Lab Rotation Form](#)), all students take a third lab rotation and the Careers in Biomedical Sciences seminar. Coursework and rotations are expected to assist in guiding the student toward the ultimate choice of Ph.D. programs. All students should complete an Individual Development Plan using [MyIDP](#)

Spring, First Year

- Second Laboratory Rotation (2 credit)
- Career Skills: Ethics and Grantsmanship (1 credit)
- One or more Foundation course:
 - Basic Science of Cancer Biology (3 credits)
 - Infection and Immunity (3 credits)
 - Genomics, Proteomics and Bioinformatics (3 credits)
 - Neural Cells and Circuits (3 credits)
 - Pharmacogenomics and Personalized Medicine (3 credits)
- Plus other electives

Summer, First Year

- Third Laboratory Rotation (2 credit)
- Career Skills: Biomedical Science Careers (1 credit)
- Select research mentor and PhD program

Good Academic Progress and Academic Probation If a student earns below a 3.0 average in any semester, on the first occasion they will receive a written letter of warning from the Associate Dean for Graduate Studies in the Columbian College of Arts and Sciences and will be required to meet with the academic advisor to remedy the situation. If the student obtains below a 3.0 average for a second semester the matter goes to the dean, who makes a decision whether the student’s program should be terminated. If a student receives a grade below a 3.0 in a required core IBS course(s), the student is subject to academic probation.

If a student does not satisfactorily complete the required first year IBS requirements during the first academic year, the student is subject to academic probation. This includes a grade of “Incomplete” for any core course. Academic Probation requires a meeting of the student with the IBS Graduate Program Director Committee. Courses of action can include remediation of course work, loss of stipend and/or tuition benefits, or dismissal from the program.

Once in dissertation years, research mentors will grade dissertation research 8999, as satisfactor/unsatisfactory. In the unlikely event of two consecutive Unsatisfactory grades a student review will occur, and can be cause for separation.

Mentor and Program Selection. Selection of the thesis research mentor, and associated PhD program, generally occurs at the end of the first year. In exceptional cases, additional rotations in the summer or fall are required. Please use the [Program Selection](#) Form.

2nd Year Curriculum

In the fall semester, all students take applied biostatistics for basic research, a PhD program-specific seminar series, and readings and research with their research mentor, as well as

remaining required and elective courses specific to the various PhD programs. Students are strongly encouraged to take electives across different PhD programs that are relevant to their research. See the PhD program courses here.

In the spring semester, students continue the program-specific seminar series and readings and research with their research mentor, as well as remaining required and elective courses specific to the various PhD programs. See the PhD program courses here. Students should begin planning their grant-style qualifier.

Fall, Second Year

- Readings and Research 8998 (with mentor)
- Applied Biostatistics for Basic Research (2)
- Seminar course for the specific PhD program (1-2)
- Additional Required and Elective courses for the specific PhD program

Spring, Second Year

- Readings and Research 8998 (with mentor)
- Seminar course for the specific PhD program (1-2)
- Additional Required and Elective courses for the specific PhD program
- Complete grant-style qualifier examination, advance to candidacy

Effective preparation of fellowship grant applications is required for a successful career in academic research, and garnering support for research ideas is key in additional career sectors. Thus, the grant-style component is both a training exercise to develop research competencies and serves as a qualifying exam for the PhD advancement to candidacy. Students should be able to develop a novel line of research, propose a hypothesis, and develop a series of experiments to test that hypothesis. A student must also be able to defend the proposal at an oral examination. At the time of the oral defense, the student should also demonstrate knowledge of the larger field of the general area of the proposal and material covered in completed coursework. The ability of a student to accomplish this endeavor will represent the qualifying exam. Details of the exam follow below and provide details for both the roles of the faculty members and the guidelines for the students. Please use the [Qualifier Exam Form](#).

The successful grant-style qualifier document serves as the Research Proposal for thesis committee meetings. Students and their mentors should plan on regular thesis committee meetings to occur every six months, regardless of level of progress, and provide committee notes to the IBS.

Students are required to prepare progress reports at six-month intervals, and present these to their Dissertation Research Committee prior to a committee meeting. At these meetings, progress will be evaluated and compared to the proposed timeline, stumbling blocks identified, and alternate strategies developed to help the student achieve his/her goals as necessary. This may include suggestion of an alternate technique to one that is not yielding results, recommending other faculty or outside scientists who might be able to assist in overcoming technical obstacles, etc. If the student has no technical problems, but is not progressing at the anticipated rate, reasons are explored and the student advised of strategies to improve progress. If at any time it appears that the student is not progressing steadily, the student may be advised that to remain in active status in the program, certain timelines must be met. If they are not met, the student may be dismissed. If a problem arises regarding incompatibility of the student and mentor, another possible mentor may be identified.

Research mentors will grade dissertation research 8999, as satisfactory/unsatisfactory. In the unlikely event of two consecutive Unsatisfactory grades a student review will occur, can be cause for separation.

Financial Aspects of Transition from Second to Third Year

When a student enters the lab of the research mentor, the role of the IBS becomes one of facilitation rather than financial support. The mentor and student must sign agreements of intention, and the mentor must provide evidence of ability to financially support the student through the remaining period of training.

GW students also transition from stipends to salary. The research mentor receives notice of the recommended level of salary support (see below for current levels). For details regarding setting up change in status, please see the advisor of your PI's department.

It is VERY IMPORTANT that the student realize that the IBS pays stipends in advance of the period of coverage, while as an "employee," payment is made AFTER the work period. This means that for the period of transition from IBS to mentor's lab, there will be an extended period (about 60 days) between paychecks. The last IBS paycheck will be for June and it will be received at the beginning of June, but employee checks will not be issued until the end of July.

Students who are supported by their mentors' grants are employees, and if they are **U.S. Citizens or Green Card holders** are entitled to unlimited doctoral credits. **International students** may be limited to part-time employment and therefore be limited to 3 hours of tuition benefit per semester. **U.S. Citizens, Green Card Holders, and International Students MUST** apply for the tuition benefit in order to use the employee benefits. The Departmental Administrators of the individual departments and HR staff can assist students with this. The student will receive 90% of the tuition as an employee benefit and be billed for the remaining 10%. Most mentors adjust the student's salary to compensate for that small percentage. For hiring as employees, a long lead time is required for background checks, so please encourage your advisees and their mentors to start this process early. A waiver can be requested so that an external search does not have to be conducted. The justification is that the student has the unique experience required for the position because the student has done a full semester rotation in the lab.

Students who have completed the second year on an IBS stipend should have already taken 48 credits. That leaves 24 credits to be distributed for the remainder of their Ph.D. training. Clearly, the student will want to distribute the required credits over the time of training, usually about three credits per semester. The student should plan with his/her program advisor for the number of credits to be taken each semester, based upon progress toward the degree. Normally, full time status requires that students are registered for nine or more credit hours. Exceptions under which a student can be certified full time if needed for loans, visa status, etc., include:

1. a student who has all 48 hours of course work completed and is studying for comprehensive exams (this can only be done only one semester)
2. if a US citizen needs to be certified as full-time (which is considered at the nine credit per semester level) while carrying fewer than nine credits, a form can be filled out each semester certifying full-time status stating that coursework has been completed, comprehensive exams have been passed, the student in candidacy, and work is now devoted toward dissertation research. This form is found on the registrar's website: (<https://registrar.gwu.edu/sites/registrar.gwu.edu/files/downloads/HTFTcertificati>)

[onforminstructions.pdf](#)). The certification form must be signed by the Program Director or IBS Director (not the research mentor). Please note that when filling out the form, one should NOT indicate that one “WORKS”. “Working” on the form is defined as activities UNRELATED to the dissertation research.

3) International students can also be certified full time when carrying fewer than nine hours. They may also be certified full time after all 48 hours of coursework have been completed, comprehensive exams have been passed, and the student is in candidacy. The form for international students can be found on the ISO website (<https://columbian.gwu.edu/files/downloads/dgs/International%20Students%20Full%20Time%20Certification.pdf>). The certification form must be signed by the Program Director or IBS Director (not the research mentor). Please note that when filling out the form, one should NOT indicate that one WORKS. Working on the form is defined as activities UNRELATED to the dissertation research.

Grant-Style Qualifier Examination (January 2, 2018)

Effective preparation of fellowship grant applications is required for a successful career in academic research, and garnering support for research ideas is key in additional career sectors. Thus, the grant application component of the graduate program is both a training exercise to develop research competencies and serves as a qualifying exam for the PhD advancement to candidacy. Students should be able to develop a novel line of research, propose a hypothesis, and develop a series of experiments to test that hypothesis. A student must also be able to defend the proposal at an oral examination. At the time of the oral defense, the student should also demonstrate knowledge of the larger field of the general area of the proposal and material covered in completed coursework. The ability of a student to accomplish this endeavor will represent the qualifying exam. This document is designed to provide details for both the roles of the faculty members and the guidelines for the students.

Selection of Exam Topic

The qualifier exam topic is to be based on the student's proposed thesis project. The student will develop specific aims, and scientific focus of the proposal. The student is encouraged to interact with his/her advisor and the exam committee members in focusing the specific aims.

The student will submit the proposal title and specific aims to the advisor and committee members according to the timeline (see below). The student is responsible for meeting all deadlines and for setting a time and place for the oral examination. During the period of topic selection and development of specific aims, students are expected to maintain full-time involvement in coursework and laboratory activities.

Qualifying Committee

The Qualifying Committee will be composed of three faculty, approved by the IBS Graduate Program Director (GPD) overseeing the student's area of specialization with one member designated as “Chair” of the Qualifying Committee. The Chair is responsible for the conduct of the examination, and for the preparation of correspondence; critique of the written proposal and reporting progress and results to the IBS Director and administration.

The student's research advisor is expected to approve the topic, specific aims, and the final written proposal, but the advisor will not serve as a voting member of the examining committee. The student's faculty advisor is expected to attend the oral examination as a non-examining, non-voting, and generally non-contributing observer. At the request of the committee, the

advisor may provide information to clarify an area of confusion; in these situations, the advisor serves as a resource to the committee and may not participate by examining or answering for the student.

Examination Timeline

On a typical timeline, specific aims will be submitted to the committee May 1, accepted two weeks later, and the completed grant application will be submitted June 20 (for 5 weeks of writing) although this does not preclude earlier submission. Oral defense of the proposal will be completed as soon as practical for the committee. The entire qualifying examination including oral defense should be completed by August 5 of the student's third year of graduate work.

Students may begin the qualifying process at any time after January 1 of their second year and thereby extend the amount of time available to them to complete each step. During the time when the written proposal is being prepared, students are expected to discuss their research schedule with their advisor since it is understood that writing the qualifying exam will take a considerable amount of time and effort.

Summary of timeline

DATE/DEADLINE	OBJECTIVE
January-February	Orientation of students to qualifier structure, preliminary development of proposal hypothesis and aims with advisor
March-April	Selection and Approval of Qualifying Committee members
May 1	Specific aims are submitted to Qualifying Committee for rapid feedback/revision
May-June	Approved aims used to develop full proposal.
June 20	Student submits written proposal to Qualifying Committee
July 5	Qualifying Committee returns any comments to student
August 5	Oral defense of proposal

Written Proposal

A. Specific Aims. The specific aims page should contain an introductory section (typically 0.5 page) that places the experimental aims in context. The specific aims page should include a hypothesis and the proposed experimental approaches/measures, model systems, and/or population/data resources to be used in testing that hypothesis. In addition, students are encouraged to include a brief statement of the impact of their results assuming successful completion of the proposed aims (typically at the bottom of the page). Minor modifications to the specific aims may be made as the written proposal is prepared but major changes should be approved by the examining committee. In its final form, the specific aims will be the first page of the written proposal.

Because the aims form a crucial part of the proposal, they will be reviewed and approved by the students Qualifying Committee before full development of the proposal. The one-page aims will be reviewed within a week with the criteria below, with feedback given to the student, and any revised aims are due from the students within two weeks.

The following are the criteria for evaluation and approval of the specific aims:

- i. Is studying and writing about the topic of the proposal likely to be a sound educational experience for the student? The qualifying exam should enhance knowledge and understanding in fields related to the student's Ph.D. dissertation project.
- ii. Do the aims address important questions in the field? In general, aims should be "hypothesis driven" rather than descriptive.
- iii. Are the proposed methods reasonable and feasible using current technology? If not, has the student proposed new approaches that have a reasonable probability of succeeding?
- iv. Can the proposed experiments be completed within the timeframe of a student's Ph.D. candidacy?
- v. Are any proposed collaborations, material transfer agreements, or key supplies in place?
- v. Is the style and level of detail of the specific aims appropriate for a grant application (e.g. NIH NRSA F31)?

B. Research Strategy. The written portion of the qualifying examination is a research proposal written by the student. The research strategy section follows the aims page. Once the student's topic and specific aims have been approved, the student will have gw ibs shmhs to complete the written proposal. The proposal should be written entirely by the student, and the advisor may be asked to document any funded grant proposals for comparison. Scientific evaluation of the written proposal is the responsibility of the Qualifying Committee, not the advisor. However, the written proposal must be approved by the advisor before it may be submitted to the Qualifying Committee. The advisor should not approve the proposal if it is difficult to understand due to the writing style, grammatical errors, or a failure to provide sufficient background or experimental detail. Of course, in writing the proposal, the student may not copy from grant applications or elsewhere; plagiarism is grounds for dismissal from the program.

Written Proposal Format

- i. The entire research proposal (one page Specific Aims and six page Research Strategy) is limited to seven total pages, and not including references cited. No materials may be included in any appendix, and proposals exceeding the page limit will be returned to the student without review.
- ii. Typeface size –NIH rules (11pt min) Arial or Helvetica
- iii. The proposal should be single-spaced.
- iv. Margins must be at least 0.5" on all sides.
- v. All pages should be numbered.
- vi. A list of cited references should be included after the research strategy section. There is no length limit for the reference list. Citations in the reference list should be complete, and contain all authors' names, full title, year of publication, journal, journal volume, and page numbers. Students are urged to cite original references rather than review articles.
- vii. Citations in the text of the proposal can either be numbered or use the author/year format.
- viii. Inclusion of relevant figures and tables is encouraged. Any figures and tables and their description should be embedded in the text and must fit within the overall page limit.
- ix. The Chair of the Qualifying Committee should examine the proposal for compliance with format requirements as soon as possible after receiving it. Proposals which do not adhere to all format specifications will be returned to the student without evaluation. In such situations, the Chair should provide written guidelines to the student and advisor describing why the proposal is being returned. The Chair should also inform the student about the amount of time available for bringing the proposal into compliance with the format requirements. It is anticipated that most modifications needed to bring the proposal into compliance can be completed in less than a week. This does not constitute the one permitted revision of the written proposal.

Written Proposal Organization:

The research strategy should contain the following subsections:

- xi. Significance. Explain the importance of the problem or question the proposal seeks to address. Describe the scientific premise for the project, including any preliminary data supporting the proposed hypotheses and/or approaches. Explain how completing the proposed project will improve scientific knowledge and impact the field of study. (approx ½ page length).
- xii. Innovation. Describe any novel approaches, methodologies, or theoretical frameworks to be developed or used, and their advantages over existing resources. Explain how the proposal challenges current research paradigms (approx ¼ page length).
- xiii. Approach. For each Aim, describe the proposed experiments, specifically the rationale, the methods to be used, and the likely outcomes and interpretations of the experiments. Proposals may contain a "Preliminary Results" section in the approach since the topic may be based on dissertation research. The experimental plan should be divided into sections that correspond to the specific aims. Predoctoral fellowship applications should propose a body of work that can be completed by a single person in a three year period. Provide experimental detail sufficient for the committee members to understand the experimental approaches planned and possible limitations or concerns with using the planned approaches. Do not provide excessive details of standard techniques and approaches; more detail can be provided for novel approaches. Students should consult the examining committee Chair if they have questions about how much experimental detail to include.
- xiv. Timeline. A timeline should be included that outlines what work will be done in each year of the grant.

Evaluation and defense of the proposal.

The completed written proposal must be submitted by the established deadline and will be reviewed within two weeks by the Qualifying Committee, using the criteria below. The committee may recommend an oral defense or major revision.

- i. It is expected that an oral defense (if recommended) will occur within approximately one month of the recommendation to proceed.
- ii. If the committee requests major revision of the written proposal, written critiques will be synthesized by the Chair from the concerns and suggestions from all committee members. The written critique should provide feedback to the student on specific areas where the proposal needs improvement. The student is advised to discuss with the Qualifying Committee Chair how to address the concerns raised in the written critique.

Specific criteria that will be evaluated in the written proposal include:

- a. Adherence to length and format rules. Noncompliant proposals will be returned without review.
- b. Is there sufficient detail to understand and evaluate the proposed experiments?
- c. Is the rationale for each experiment clearly described?
- d. Is sufficient – and not excessive – detail on methodology provided?
- e. Are potential outcomes and interpretations of possible outcomes described?
- f. Have alternative approaches been considered if the method of choice does not work?
- g. Is the grant written in a style appropriate for a research grant?
- h. Is the timetable for the work provided by the student realistic?

Oral Examination.

At the oral defense, the student will present a brief overview of the written proposal, and describe the approaches and anticipated outcomes for each aim, using perhaps up to 10 slides, as desired. The student should be prepared to address any related scientific or technical aspects that the committee may raise. A major goal of the defense is to determine the student's knowledge and ability to "think on his/her feet." The committee will confer in advance of the oral

defense to define the most pertinent questions that warrant appropriate answers, aiming for an exam not to exceed 2 hours length. Based on the response to these questions, and the overall quality of the application, the committee may recommend an overall exam pass or fail.

If the decision following oral defense is “fail,” the student has the opportunity to revise and re-define the proposal one time. The second administration of the oral should occur within one month after the first oral examination. If a second failure occurs, the student will not be advanced to candidacy for the Ph.D. degree, and normally will be unable to remain in the Ph.D. program. The final determination for this will be subject to review by the IBS director and graduate program directors.

An initial decision on the written proposal may be deferred if the committee believes that the application has merit but requires major rewriting. The major reason for such a decision will be that the student would benefit from additional practice at formulating ideas and presenting them in a clear and succinct proposal. The revised proposal must then be resubmitted within a month, and the committee may recommend oral examination, with criteria above.

Successful completion of the qualifier examination will allow the student to advance to candidacy. If a student instead decides to withdraw from the PhD program, he/she may have the opportunity to earn a MS based on completed coursework and the Master’s Qualifying Exam, consisting of a 30 minute research talk.

Guidelines to assist students in preparing for the oral examination:

- i. The student should be familiar with the theoretical and factual background relevant to their proposal at a level expected for a second year PhD student. All members of the Qualifying Committee are free to ask questions broadly related to the proposal and to areas that constitute the background for the proposal. The student should be able to place the topic of their proposal in the context of the broad field of integrative biomedical sciences. If the student has been informed by the examining committee that a revised written proposal still has substantial deficiencies, the student should be prepared to address these during the oral examination.
- ii. Students should be conversant with the literature in the field(s) covered by their proposal, including those papers that deal with matters of general significance as well as those that relate directly to the proposed research at a level expected for a 2nd year doctoral candidate. The committee will expect the student to have an appreciation of the development of ideas (historical perspective) in this field and the potential role of current ideas in guiding the field in the future.
- iii. Students should be able to consider and generate alternative approaches and should be prepared to interpret hypothetical outcomes proposed by examiners.
- iv. Students should be thoroughly familiar with the technical aspects of their proposal. They should have a solid understanding of the techniques they propose to use. They should be aware of the advantages and limitations of these techniques. They should be prepared to defend why they have chosen a particular technique or approach rather than alternative ones that might be available.
- v. The committee may also test the following aspects of the student's background and ability:
 - Is the student able to critically evaluate original scientific articles?
 - Has the student designed experiments that address the specific aims and which have the potential to add new and useful information to the field of investigation?

Prior to submission of the topic and specific aims, students are expected to maintain full presence in the lab and coursework. It is not acceptable, for example, for students to disappear from the lab for weeks or months for the purpose of generating the aims for the qualifying exam. Students are encouraged to begin the discussions and background reading needed to select a topic early in their second year of study. Prior to writing their proposal, students are expected to

discuss their research schedule with their advisor since it is understood that writing the qualifying exam will take a considerable amount of time and effort. Students should anticipate that several weeks are required to do the background reading needed to select a topic and to formulate specific aims. It is strongly recommended that students begin this process early, perhaps during the summer between the first and second years of graduate study. The entire process may be completed sooner than the designated dates, and this is encouraged. Departures from the timeline for the qualifying exam specified here require the prior approval of the IBS Director and Graduate Program Directors.

Adapted from materials on the Qualifying Exam at Geisel School of Medicine at Dartmouth

Dissertation Progression to Graduation

Meet with your committee and obtain their permission to write. There is no formal document required. Agree on who your readers will be. You need two in addition to your mentor. For NIH Partnership students, your two mentors count as one person only. You need two additional readers.

Write your dissertation. All dissertations must now be submitted electronically. Detailed instructions are available at <http://library.gwu.edu/etd>. A template is provided for your convenience. As a reminder, abstracts should be limited to 350 words or anyone ordering a paper copy in future will receive a truncated version.

Students are encouraged to work with mentors during the writing process. Most mentors are happy to receive sections and provide feedback as writing progresses. In addition, the students are encouraged to meet with their Program Director for general advice on dissertation writing and the expectations of the committee at the defense. After the mentor has seen the dissertation, it should be distributed to the two readers. The mentor and both readers must sign off on the document before it is given to the rest of the committee. The form for this is called **“Dissertation Research Committee Sign-Off”** and is on the DGS resources webpage (accessible only to Program Directors). This form should be returned to the Program Director BEFORE the defense is scheduled. The committee consists of the mentor (who will not participate in the questioning), the two readers, and at least two additional examiners, who should not have been on the Dissertation Advisory Committee. This is to allow persons with a fresh perspective to evaluate the work. One of these examiners must be an “outside” examiner. The “outside” examiner must be outside your program, and may be outside the institution. A CV of the outside examiner must be provided to the Program Director to ensure the outside person is appropriate. Give them ample time to review. Obtain the sign-off form from your Program Director. Distribute the revised (if necessary) dissertation to your whole committee. Your Program Director may also want a copy. When you distribute, you can inquire about defense dates. If the committee is willing to permit you to schedule a date before they read, you may do so. It is their prerogative, however, to have time to finish reading the dissertation before the scheduling of a defense.

When you have chosen a defense date acceptable to your committee, you must identify and schedule a chair to officiate at the defense. This should be a Program Director, Chair, or other senior faculty member.

All information for the defense should be submitted to the IBS office **at least** two weeks prior to the defense to allow time for the generation of a program. IBS staff have a template for this document; however if you do not turn it in to the IBS Office in a timely manner they may not have time to prepare and format the program – please do not submit it at the last minute! The

information that they will need includes: your name, prior degrees, abstract, committee members, and a list of your publications. They can provide you with an example for reference.

A seminar should be given prior to the defense. It is best if the seminar can immediately precede the defense, but not required. Your Program Director will provide information to the IBS office for advertising the seminar. You will need to plan on an hour for the seminar and about two hours for the defense.

At the defense, the chair should have a form indicating the results of the examination. It is called the **“Final Examination Committee Sign-off”** and is located on the advisors’ webpage. If revisions are required, there is also a space on the form that indicates who needs to see revisions before the dissertation is accepted. Once those revisions are made, each person who wishes to see the revised version must sign off on the form entitled **“Final Dissertation Approval.”** Again, this is available on the advisors’ webpage. When the student gets the required signatures, the form is returned to the Program Director, who files the **“Graduation Clearance”** form at the Graduate School. This must be submitted by the Program Director and not the student.

The seminar is open to the public. The defense is open to the GW Academic Community. Students are welcome and encouraged to attend so they can be prepared when their time comes!

Please contact your Program Director with any unanswered questions or concerns.

Submission of the final dissertation

All dissertations must be submitted electronically. Information is available at <http://library.gwu.edu/etd>. Two forms are also required. The first form, called the UMI form, is submitted electronically with the dissertation. The second form is the electronic dissertation approval form. This is a paper form that must be signed by the student’s Program Director and the student, and certifies that the electronic dissertation submitted is the final, corrected version. This form must be turned in to Nicole Davidson (nad1@gwu.edu) in CCAS (Room 107 Phillips Hall) following electronic submission of the dissertation.

Faculty

In general, IBS faculty have active research programs, recent publications, and current research funding. The list of [faculty posted online](#) is updated regularly. Faculty with "research" professor designations, and those with mentored awards (eg K awards) are not eligible to host a PhD student, although many actively contribute to key research education efforts. This list includes potential faculty mentors-- in any particular year, not every research group will have an opening for a graduate student.

IBS Doctoral Travel Award

General Policy

Doctoral students are strongly encouraged to provide an oral or poster presentation of their work at conferences in their fields. Research recognition and exposure to well-known scientists are essential for research professional development. **The research advisor should be the primary support for student travel.** In an effort to expand available opportunities, students are directed to professional societies, and even the conferences themselves that offer travel grants to doctoral students for meeting presentations. The IBS has limited funds to assist advisors in supporting student presentation travel.

Explore Conference Travel Grants.

Research advisors can assist with the identification of important venues for presentations, as well as societies that may offer student support for meetings. Some common travel grants include:

- AACR travel grants
- SFN travel grants
- American Association of Immunologists travel grants
- Keystone Symposia Scholarships
- Biolegend

The IBS program has limited funding available to support doctoral student travel for presentations:

- Award amounts will vary. Awards amounts are: Up to \$500 for travel within the United States, and up to \$700 for international travel.
- Grants are unlikely to be awarded for course tuition if GW provides a similar course
- Eligible candidates who have not already been recipients of IBS travel awards will be given preference.

IBS Travel Award Application

- Complete the application no later than 2 months prior to travel
- Alert the IBS Director
- If approved, keep all receipts for reimbursements.
- A conference report (up to 2 pages) must be provided to the IBS within a month of the presentation.

Funding Opportunities

SMHS Support

The SMHS provides Institute fellowships for incoming PhD students. Entering students in Academic year 2017-2018 received a stipend of \$32,000/yr and 24 credit hours of tuition per year. Beginning in their second year, based on appropriate academic performance, they receive an increase such that their per annum rate increases to about \$33,000. However, the IBS pays for only 10 months of the second year. The mentor should arrange for the student to be paid for the month of July. Similar support during the second year is dependent on a satisfactory academic record during the first year. Once students select a research mentor and PhD program, students are supported by extramural fellowships, scholarships, or research grants awarded to the laboratory in which they are doing their dissertation research project. Periodic review of the NIH [NRSA stipend](#) levels and cost-of-living analyses affect the stipend. We strongly encourage trainees to apply for external funding. Having a fellowship will make you much more competitive when you apply for positions after GW.

Conflict of Commitment Policy for Students working on Industry-Sponsored Projects

Doctoral students are free to choose their research projects in consultation with their dissertation mentors. Students are never to be *assigned* to projects sponsored by industry; their associations with industry-sponsored projects must be voluntary. Moreover, faculty who have their own consulting practices or companies must be sensitive to conflict of interest issues if they contemplate involving students voluntarily in their activities and should discuss such issues openly with the student(s).

Students must be able to discuss their work with teachers, advisors and committee members. Students must also be able to present their work at seminars that may be a component of their required curriculum, as well as in written progress reports to their Dissertation Research Committees or PhD programs as required.

Doctoral students must have the full traditional freedom to publish and present promptly all results of research. Reasonable delays will be accommodated for consideration of filing patent applications. The delay should be no more than 60 days. Delay may be extended by up to 90 days if the reasons are specifically stated in a formal agreement between the sponsor and the University.

Doctoral students are expected to be engaged in full-time research, with the exception of attending or preparing for seminar or classes, or preparing manuscripts on their own research. Regardless of the sponsorship of their work, and with the understanding that not every experiment will necessarily become a part of the dissertation, they are not to be employed excessively for technical assistance for work unrelated to their own projects.

Predoctoral Fellowship Opportunities

- Review opportunities for **PhD Fellowships** and **Postdoctoral Fellowships**
- Fellowship applications to the NIH require you to obtain an eRA Commons account initiated by completing this form, submitted to GW.
- Complete your NIH Biosketch - Note: NIH Biosketch Format Pages, Instructions, Samples includes information for fellowship and non-fellowship style biosketches.
- Many fellowships suggest that candidates complete and update an Individual Development Plan, described here. A useful approach is to use MyIDP which links to AAAS Science Careers.
- Clinician investigators should also inventory their skills, prepare clinical research IDPs and consider SMART goals.

Tips for Predoctoral Applications

The Predoctoral Fellowship Toolbox Video describes the process for developing an NIH F31 or AHA pre-doctoral fellowship, provides strategies for a proposal, and introduces the peer review process (*PowerPoint provided Jan 30*). See the useful F31 Quick Start Guide.

- Specific Aims
- The Training and Career Development Plan (F31)

Sample pre-doctoral fellowship applications and summary statements are available for review.

- F31 Sample Application 1 with Summary Statement
- F31 Sample Application 2 with Summary Statement
- F31 Sample Application 3 with Summary Statement
- F31 Sample Application 4
- F31 Sample Application 5
- F31 Sample Application 6
- F31 Sample Application 7
- F31 Sample Specific Aims and Research Strategy 1
- F31 Sample Specific Aims and Research Strategy 2

Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship (Parent F31) F31 Funding Opportunity Announcement

NIAID Fellowship Grants Useful compendium of tips

Diversity Supplements

NIH Research Supplement to Enhance Diversity. Investigators holding NIH research grants may request supplemental funds to improve the diversity of the research workforce; see [PA-18-586](#) and check for any notices that appear.

These funds can support individuals at virtually any career stage, including high school, postbaccalaureates, undergraduate and graduate students, postdoctoral fellows (including MD research fellows) and initial faculty.

Plan ahead:

- This is a supplement to a funded NIH research grant
- Many grant mechanisms are eligible for the supplement
- A candidate cannot be supported by a supplement if s/he is already paid on the grant!
- ***This means that IBS students and potential research mentors must plan ahead for supplement support before/ instead of going on a research grant.***

Eligible Individuals:

The supplement is intended to support candidates who will increase diversity on a national or local basis. The NIH is interested in encouraging the recruitment and retention of the following classes of candidates:

A. Individuals from racial and ethnic groups that have been shown by the National Science Foundation to be underrepresented in health-related sciences on a national basis:

Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, and Native Hawaiians and other Pacific Islanders.

B. Individuals with disabilities, which are defined as those with a physical or mental impairment that substantially limits one or more major life activities.

C. Individuals from disadvantaged backgrounds (generally only for individuals at undergraduate education levels or below).

Eligible Grants:

Principal Investigators who hold an active R01, R10, R18, R22, R24, R35, R37, P01, P20, P30, P40, P41, P50, P51, P60, U01, U10, U19, U41, U42 or U54 grant are generally eligible to submit a request for an Administrative Supplement to the parent grant. See the full list of mechanisms in the FOA [PA-18-586](#)

Submission and Review Process

- **Investigators are strongly urged to contact the program officer of the parent grant prior to submitting an application.**
- Diversity Supplement applications have no set deadline, have a quick review and a relatively high probability of funding.
- The PI applies—not the candidate—but you should work together.
- The research plan must describe how the candidate will enhance the research described in the parent grant (for example, candidate will complete aim 2b), describe what the candidate will do, and describe the mentoring plan for the candidate (for example, candidate will apply to graduate

school, or candidate will write a fellowship, etc). The application also requires a candidate background and biosketch.

- NIH thinks highly of PIs who apply for these and their commitment to diversity.
- Typically a grant should have at least 2 years remaining to request a supplement for a graduate student or postdoctoral fellow; for high school, undergraduate or post-baccalaureate students, the grant should have at least 1 year remaining.
- Applicants requesting supplements to support a summer research experience are strongly encouraged to submit their applications no later than April 1 to allow sufficient time to review an application and reach a timely funding decision.
- Applicants will receive notification of a funding decision approximately 12 weeks after receipt of the application. This is a competitive program and funding is not guaranteed.

If you have questions:

- See the FOA [PA-18-586](#)
- Contact Alison Hall, PhD, Associate Dean for Research Workforce Development akhall@gwu.edu
- Review successful GW applications

Health Insurance Reimbursement

The IBS will cover the costs of each student’s health insurance for the first two years you are in the program, regardless of the source of your insurance [note: NIH covers health insurance for students at that site]. This coverage begins in August of your first year and ends June 30 of your third year. The maximum amount that we will reimburse is the cost of the currently available “Voluntary” [Student Health Insurance](#) through GW (\$4,103 total for the 2018-2019 year).

You can elect to enroll in the university's student health insurance plan [GW SHIP], a state/federal exchange plan [the Affordable Care Act], or private insurance [like a parent's or spouse's employer plan, for example] and still be eligible for the \$4103 reimbursement. Having a joint or family plan [as opposed to an individual plan] does not affect your eligibility, however we can only reimburse you for the portion of the plan cost which is determined to cover the student [as calculated by the IBS office, and subject to the overall maximum].

The cost is covered through reimbursement requests only. We require a receipt documenting each payment which specifies the student as a beneficiary and dates of coverage to verify eligibility for reimbursement. You may email the IBS office your receipt(s) showing health insurance payments as follows:

- (1) If the IBS student is the primary insurance holder on the plan, you may request reimbursement on a monthly basis, if that is how you make your payments. If you pay on a semester basis, you may submit the semester payment for reimbursement in its entirety once it is made.
- (2) If the IBS student is not enrolled as the primary insurance holder, but is covered under another person’s [i.e. parent/spouse] health insurance, then we will process reimbursements at the end of each semester. Save your receipts showing payment and submit them to us the at end of the semester for reimbursement as follows:

SEMESTER	COVERAGE MONTHS	SUBMIT RECEIPTS IN
Fall	Aug-Sept-Oct-Nov-Dec	December
Spring	Jan-Feb-Mar-Apr-May	May

Summer	June-July	July
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- a. The IBS office will calculate a portion of the insurance cost applicable to the student [group plan cost minus individual plan cost] to determine the amount that we are able to reimburse. At the beginning of the year, you will need to submit documentation regarding the cost of coverage for this purpose. This includes a brochure outlining the costs of your provider's individual vs. group plans, documentation of the plan selected, and proof of enrollment for the student.
 - b. Once the annual documentation has been received, submit your receipts on the semester basis as noted above and the IBS will process a reimbursement for the calculated amount.
- (3) For international students who are enrolled in the "Mandatory" GW SHIP plan, health insurance charges are automatically placed on your student account. Please notify us each semester when this happens, and we can process a payment directly to your student account.

Career Development

A PhD in biomedical sciences can lead to exciting careers in academic research, research in the biotechnology industry, research at federal laboratories, as well as positions in science teaching, science communications, and science policy. See the career outcomes of our biomedical PhD graduates. Many essential skills are built through required courses in science writing, ethics and grantsmanship and an annual career panel. The *Science and Professional Development* workshops are offered monthly and focus on Individual Development Plans, setting SMART goals, fellowship preparation, and other topics. Take an active role in exploring your career and building skills for success.

Exploring Scientific Careers

Individual development plan. Many fellowships suggest that candidates complete and update an Individual Development Plan, described [here](#). All PhD students must complete an IDP and consider SMART goals in preparation for the Careers in Biomedical Sciences course panel. A useful approach is to use [MyIDP](#) which links to [AAAS Science Careers](#). Clinician investigators should also inventory their skills, prepare clinical research IDPs and consider SMART goals.

Teaching. GW Biomedical Science PhD programs provide financial support to allow you to focus on your research, and do not require you to serve as a teaching assistant. Some students and postdocs wish to gain some teaching experience while at GW. Occasionally, there are teaching assistant opportunities available in the Biology & Chemistry department. The TSAP 6000 course "teaching in the sciences and professions" is a blended online and in-person course to develop teaching skills for those in research.

Science Communication

Elevator pitch/ 3 minute thesis. Learn and hone ways to talk about your work to technical (national meeting?) and public (outreach?) audiences. It takes practice to eliminate jargon, get attention and state relevance. Here's a good [blog](#) with resources.

Toastmasters. Attend the GW chapter of [Toastmasters](#) International and refine your communication skills.

[Where are our grads](#) describes GW PhD alumni careers.

Professional Development Resources

- The [GW COMPASS](#), a student organization specifically for grad students in STEM fields, which provides a community of professional support to facilitate the advancement of students by hosting networking engagements, fostering mentee and mentor relationships, and highlighting career opportunities for post-graduate life.GW
- GW Center for [Career Services](#) provides extensive programming and services to graduate students, including the Handshake program to find a job.
- [ORCID](#) establishes a persistent digital identifier that distinguishes you from everyone else so you can link GW research education with papers as a student, postdoc and faculty member. Please [register](#) to get your unique identifier, and then add your information (linking to Scopus or LinkedIn, if you like).
- [Pivot](#) is a searchable database of funding opportunities available to GW graduate students, postdocs and faculty. With Pivot, researchers can easily explore new avenues for funding and view funding opportunities uniquely matched to their scholar profile. Explore Pivot and other [funding sources](#) on your own, or take a short orientation class at [Himmelfarb](#) library.

PhD Training at Children's National site

Onboarding. All students who have an interest in working with any of our partner researchers at Children's National Health System must follow the steps below to obtain the CNHS Volunteer Service Office's approval prior to starting in any CNHS lab. This process takes an average of 3-4 weeks to complete. (We will ask you to apply during orientation).

All information and forms are available on the [CNHS Special Volunteer Application](#) website

- Review the orientation packet and confidentiality agreement
- Complete the application, following these guidelines where indicated:
 - Supervisor Information:
 - Position Description
 - select "Research Trainee" as your Volunteer Role
- Complete the online safety quiz and error prevention training
- Review the medical requirements and submit the necessary documentation to ohvolunteers@childrensnational.org
 - The medical forms require that the volunteer have two tuberculosis skin tests (also known as TB or PPD tests) in the past year (at least one will need to be from current year), vaccination records, and a health assessment that is completed AFTER the two TB tests. The TB tests take up to three weeks to complete.
 - Once the completed medical forms are reviewed, Occupational Health will send a single-page medical clearance slip to the Volunteer Services office. If you have

any questions about the medical requirements, please don't hesitate to contact Occupational Health at 202-476-2035 or through the above email.

- Complete the background check request which you will receive from CNHS after completing the first part of the volunteer application*
- All forms must be submitted by email and Volunteers may not begin their assignment nor receive an ID badge until they receive an acceptance email from the Volunteer Services Department.
- Following approval, all volunteers are required to attend a mandatory Error Prevention Safety Training as a part of a corporate safety transformation initiative.

*Note: The Volunteer Services Office will send an email with information for submitting the background check after they receive the completed supervisor form and safety quiz from either the applicant or the supervisor. The supervisor will be responsible for collaborating with the volunteer to build their volunteer program, including their start/end date, weekly schedule, and responsibilities.

You do not have to have a rotation mentor identified to start the volunteer application process. Because it can take a month or longer to obtain approval, we recommend submitting an application if you have any interest at all in a rotation at CNHS so that you are not faced with a delay in starting your rotation.

Travel. The main campus is accessible by public transport. The nearest Metro stop is Brookland/CUA on the red line. A free Childrens Metro Shuttle runs regularly between the hospital and Brookland/CUA (Mon-Fri).

GW-NIH Graduate Partnership Program

A small number of students are accepted to the GW-NIH Graduate Partnership Program (GPP) each year. Students wishing to be considered for admission into the GW-NIH GPP partnership need to submit an application to the NIH GPP and a separate application to the University by the specified deadlines.

Coursework

Students in the GW-NIH GPP are enrolled full-time in the GW IBS and take all the core and elective courses.

Research Rotations

Students in the NIH Graduate Partnership Program are required to perform four laboratory rotations. A list of available rotation mentors is available through the IBS or the NIH OITE. ***The first rotation is done the summer before courses begin.*** This rotation runs from July through August. Students then complete additional rotations on the same schedule as GW laboratory rotations. Exact rotation dates are announced each year, but generally run from late September through early December, and from mid- January to mid-April. At the end of June after the first year, a permanent laboratory pair should be chosen for dissertation research.

Program Choice

Students may choose to do their dissertation research in an NIH lab or to work on a collaborative project between laboratories at NIH and GW. The NIH Intramural Research Program (IRP) is comprised of ~1200 tenured and tenure track investigators. There are three GW sites: the GW campus at Foggy Bottom, including SMHS, the Columbian College of Arts and Sciences, and the Children's National Health System. At least 50% of research time must be spent at the NIH. Alternatively, the student may perform dissertation research solely at NIH. In this case, the student must identify a co-mentor from one of the GW campuses.

Students in the GW-NIH Partnership Program may elect to earn a Ph.D. in any of the five programs offered in the Biomedical Sciences at GW, with selections generally made in spring of the first year. The five Ph.D. Programs available include Cancer Biology, Genomics and Bioinformatics, Microbiology and Immunology, Neuroscience, and Pharmacology and Physiology. The GW faculty co-mentor must be a member of the program the student chooses. As with other GW students, mentor selection and PhD program selection must be approved by the graduate program director from the particular PhD program.

Dissertation Research Proposals

Proposals for GW-NIH Partnership Program students are due in May of the second year. Guidelines for writing of the Proposal are provided in the IBS Handbook.

The GW graduate program directors will provide academic advising and oversight throughout student training.

Important Links

- For general information about Graduate Programs at GW and for admissions information, please visit the [Columbian College of Arts and Sciences](#).
- Please visit the [IBS Programs page](#) for general information about our individual Graduate Programs.
- For detailed information about the GW-NIH Graduate Partnership Program, you may refer to the NIH GPP Graduate Student Handbook, and visit the [NIH Graduate Partnership Program](#) webpage.

Contacts

If you have additional questions about the GW-NIH Graduate Partnership Program, please contact **Stanley Lipkowitz, MD, PhD**

Co-Director, NIH Graduate Partnership Program
Senior Investigator, Laboratory of Cellular and Molecular Biology
National Cancer Institute
National Institutes of Health
Phone: (301) 402- 4276
E-mail: lipkowis@mail.nih.gov

Resources for Students

- The [Admitted Graduate Student](#) page provides guidance on academic resources, life in DC and student services at the university.

- The [Resources for Graduate Students](#) page provided by the Center for Student Engagement contains information pertaining to workshops, support services, student organizations and more.
- IBS students fall under the administrative purview of the Columbian College of Arts & Sciences, although our programs are closely intertwined with the School of Medicine & Health Sciences. Our office works in conjunction with the CCAS graduate services team to process requests related to registration, transfer credits, graduation, etc. The [CCAS Doctoral Student Handbook](#) contains information on the administrative policies and procedures applicable to your program.
- GW's [Colonial Health Center](#) (CHC) provides integrated confidential, student-centered services in an accessible, safe, culturally sensitive, and supportive environment. The CHC seeks to promote healthy lifestyle choices and to holistically support the physical and emotional well-being of students in order to achieve academic success. Visit them in the Marvin Center [ground floor] or call 202-994-5300 (24/7)
- Preventing Sexual Harassment and Sexual Violence – you will receive an email from GW's [Haven](#) office to complete this mandatory online training. The Haven website lists the resources available to the GW community related to sexual harassment, sexual assault, dating or domestic violence and stalking.
- The [Code of Academic Integrity](#) is a part of the [Guide to Student Rights & Responsibilities](#). All students – undergraduate, graduate, professional, on-line, full time, part time, law, etc. – must be familiar with and abide by the provisions of this policy. The Code of Academic Integrity:
 - Sets minimum standards for academic student conduct
 - Defines the rights of students charged with an academic disciplinary violation
 - Lists the procedures for resolving academic disciplinary matters
 - Provides guidance for academic disciplinary sanctions
 - Addresses other issues regarding academic student conduct
- [Disability Support Services](#) (DSS) at GW works collaboratively with students, faculty and staff across the campus to foster a climate of universal academic excellence, while also promoting disability culture and GW's broader diversity and inclusion initiatives. Their office facilitates accommodation for disabilities as well as provides training and tools for academic and professional skill development. If you need further information about disability accommodation, please contact their office as soon as possible.
- [MyGW](#) is the gateway to an array of useful tools such as the [schedule of classes](#), [Blackboard](#), the university directory and events calendar, the [academic calendar](#) and [Banner](#) [GWeb info system].
- The [Himmelfarb Health Sciences Library](#) has outstanding resources on how to write an abstract, how to make a poster, how to do a literature search, and—through the library website—electronic access to hundreds of scientific journals.

- [Blackboard](#) is used as a learning and communication tool in most of your courses. Blackboard class sites are generally opened up for students during the first week of classes or just before, so don't be worried if you are not seeing anything yet when you sign into Blackboard.
- Official student records are housed in the [Banner](#) system. You will use Banner to register [for your second and subsequent semesters], view your grades, transcript and DegreeMap, and update your official contact information if necessary.
- For information on the university's operating status [e.g. inclement weather closures] and emergency situations, visit the [Campus Advisories](#) website.
- Blue light call boxes are located around the Foggy Bottom campus which you can use to summon the GW Police in the event of an emergency or if you feel your safety is threatened.
- You should also consider downloading the [GW PAL](#) mobile safety app on your phone. This will send any alerts issued by Campus Advisories, and includes a silent alarm feature that you can use to alert the GW Police and send them your exact location.
- You can sign up to receive municipal emergency alerts sent out by local governments in the DC area by visiting the [Capitalert](#) website.
- For general information updates, connect with the university via social media on [Facebook](#), [Twitter](#), [Instagram](#), [Snapchat](#) and [LinkedIn](#)
- The university's IT division provides a number of useful resources for students. First and foremost please review the [Student Technology Guide](#) to get up and running for the start of the semester. IT also provides [free software](#) (yes, FREE!) such as Microsoft Office 365, Adobe Creative Cloud and Symantex antivirus. They have an online [Support Center](#) as well as a physical help desk, [Tech Commons](#), located in the basement of Gelman Library. They can also assist you if you have problems accessing any of your [university accounts](#).

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