



**Integrated Biomedical Sciences
Program Handbook 2023-2024**

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OVERVIEW

The Integrated Biomedical Sciences is an “umbrella” organization for the five biomedical science PhD programs at GW School of Medicine and Health Sciences, with core admissions, curriculum and program expectations and oversight. The admissions committee seeks students with broad interests and experience in biomedical research. Our PhD programs use the George Washington Columbian College of Arts and Sciences graduate application and are bound by the GW University Bulletin policies. Candidates are accepted after review of the written application and individual interviews. Program-specific **graduate program directors** guide and oversee IBS students from admissions through completion of coursework, a grant-style qualifier examination, dissertation research and graduation. IBS students complete one of five PhD programs, including Cancer Biology, Genomics & Bioinformatics, Microbiology & Immunology, Neuroscience, or Pharmacology & Physiology.

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 of research. 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 9-12 credits of coursework in each semester for the first two years (or 45 credit hours before the qualifier and full-time dissertation research). The Ph.D. programs in the biomedical sciences require year-round on-campus participation beginning with the fall semester of the entering year.

All students participate in **three different, ten-week research rotations** in the first year of graduate training, in order to identify a faculty research advisor. **Rotations broaden student research skills, and rotation mentors may become faculty research advisors for dissertation work, research collaborators or committee members.** Only IBS PhD Trainers 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 PhD 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 identified a faculty research mentor and PhD program. The faculty research mentor is an important guide during PhD study and the IBS works to insure strong mentor/mentee relationships. Some 75 approved **IBS PhD Trainers** guide dissertation research, and additional faculty members direct courses and provide guidance. At the end of the second year, students complete a **grant-style qualifier** examination that takes the place of a comprehensive exam. The examination is “on-topic”, allowing students to prepare a strong thesis project.

After successful completion of the qualifier, students pursue dissertation research, with thesis advisory committee meetings and reports due to the IBS every 6 months to ensure good progress. PhD candidates form a **thesis advisory committee** consisting of the faculty research mentor and two other faculty members. Following satisfactory completion of the dissertation and oral defense of the dissertation research, the PhD is conferred. IBS 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.

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 Directors

PhD programs in the IBS 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.

Each PhD program has at least two Graduate Program Directors (GPDs) approved by IBS, who are available for admissions as well as academic and career planning. GPDs 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 any area at any time as desired for information. Following completion of the first year core curriculum and three rotations, students select a faculty research advisor and PhD program for further study. Once a PhD program is selected, the associated GPDs will work with the student, student committees and IBS leadership to ensure timely student progress.

Cancer Biology PhD Program and Graduate Program Directors

The Cancer Biology PhD Program is designed to develop research scientists with expertise in cancer biology and signaling, 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.

Norman H. Lee, Ph.D.

Professor of Pharmacology & Physiology
Ross Hall Room 601
202-994-8855
nhlee@gwu.edu

Yanfen Hu, Ph.D.

Professor of Anatomy & Cell Biology
GWU; Ross Hall 437B
huy3@gwu.edu

Genomics and Bioinformatics PhD Program and Graduate Program Directors

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 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.

Ljubica Caldovic, Ph.D.

Associate Professor Genomics & Precision Medicine
Children’s National
202-476-5819
ljubica@gwu.edu

Raja Mazumder, Ph.D.

Associate Professor of Biochemistry & Molecular Medicine
Ross Hall 540
202-994-5004
mazumder@gwu.edu

Microbiology and Immunology PhD Program and Graduate Program Directors

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.

David Leitenberg, M.D., Ph.D.

Associate Professor of Micro/ Immuno & Tropical Med
Ross Hall 621
202-994-9475
dleit@gwu.edu

Alberto Bosque, Ph.D., M.B.A.

Associate Professor of Micro/ Immuno & Tropical Med
Ross Hall 620
202-994-9696
abosque@gwu.edu

Neuroscience PhD Program and Graduate Program Directors

The Neuroscience PhD program is designed to develop research scientists in the areas of anatomical organization of the brain, neurotransmitter signaling, molecular activity of ion channels; synaptic, network and metabolic changes in the living brain, brain circuit development; and mapping human genes, as well as human brain structure, activity and behavior.

Matthew T Colonnese, Ph.D.

Associate Professor Pharmacology & Physiology
Ross Hall 639
202-994-4596
colonnese@gwu.edu

Jason Triplett, Ph.D.

Associate Professor of Pediatrics
Children's National
202-476-3985
jtriplett@childrensnational.org

Pharmacology and Physiology PhD Program and Graduate Program Directors

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.

Nikki Posnack, Ph.D.

Associate Professor of Pediatrics
Children's National SZI
202-476-2475
nposnack@childrensnational.org

Colin N. Young, Ph.D.

Associate Professor of Pharmacology & Physiology
Ross Hall 640A
202-994-9575
colinyoung@gwu.edu

CURRICULUM

General graduate policies are bound by the [CCAS Graduate Program Policies](#) and the IBS program information contained in this handbook. The [program of study for the IBS PhD programs](#) is also provided online.

Academic Policies

IBS Registration Policies

- All registration plans **must be approved by the appropriate [graduate program director \(GPD\)](#)**. First year students must meet with a GPD within the first two weeks of the first semester to discuss coursework and rotations. All students must meet with a GPD to confirm coursework and research progress prior to registration for the second, third and fourth semester.
- Courses offered by the IBS and SMHS basic science departments generally apply towards the required or elective PhD curriculum (course codes ANAT, BIOC, BMSC, CANC, GENO, MICR, NRSC, and PHAR). IBS tuition awards support only courses relevant to the study of biomedical science and in compliance with IBS policies, as determined by the IBS leadership.
- External (non-SMHS) courses are limited to 3 credits per student total for the duration of the PhD. Students with transfer credits equivalent to IBS/SMHS courses may be permitted to take additional external courses with permission of the IBS leadership on a case-by-case basis. Any external courses offered outside the SMHS basic sciences that might serve as electives for the PhD require IBS program director approval before registration.

General Registration Policies for IBS students

- All registration plans must be pre-approved by the appropriate [graduate program director](#). Students should consult [DegreeMap](#) each semester to track progress in meeting program requirements when planning courses. Refer to the [online schedule](#) for detailed information on each course. Registration is completed in the [Gweb system](#). Registering after the first day of classes incurs a late fee which students are responsible for paying.
- [Schedule changes](#) can be made in Gweb through the second week of classes, and via a paper form through the fourth week of classes. However, be aware that if a class is dropped without replacement [i.e. net reduction in the number of credits taken] on the first day of classes or beyond, the student will have to pay a [drop fee](#) that the award doesn't cover! Any class dropped after the fourth week of classes remains on the transcript with a "W" grade.
- Note that a student must remain in continuous compliance with any academic-related financial award terms (including minimum GPA and registration requirements) in order to be eligible to receive the stated support. All schedule changes must be approved by the appropriate graduate program director and/or the IBS office.

Key Takeaways: (1) The IBS does not cover late fees or drop fees, they are the student's responsibility. (2) All registration plans (and any changes) must be approved in advance by the appropriate graduate program director to ensure they comply with graduation and financial award requirements, (3) Registration for any external classes outside the SMHS is limited and must be approved by the GPD. Unapproved courses may not be counted towards the PhD and are not eligible for tuition award funding.

Identification of Faculty Research Advisor

Supervised, individual biomedical research projects in a faculty-led laboratory setting are a required component of a student's academic activities throughout the entirety of IBS PhD program, beginning with lab rotations in the first year, through the qualifying exam, and culminating in writing and defending a doctoral dissertation. The student must secure and maintain an appropriate GW faculty research advisor for the duration of their IBS studies in order to complete the PhD degree.

- Faculty who are eligible to train IBS students are listed on the [IBS website](#). Students may not rotate with or join labs of faculty who are not approved by the IBS to train PhD students.
- All IBS students are required to secure three laboratory rotations in their first year.
- All IBS students are required to secure a faculty research mentor for dissertation research for the remainder of their PhD program from among their rotations by the end of the first year (May 15).

- Credit for faculty-supervised, self-paced biomedical research activity in the lab is conferred by BMSC 8215 (first year), program -8998 courses and BMSC 8220 (second year), program -8999 courses (third through fifth year), and CCAS 0940 and Continuing Enrollment (sixth year and beyond).
- If a student does not find a satisfactory faculty research advisor match from the three rotations, the student will be placed on Academic Warning for the summer semester and be required to secure a fourth lab rotation in order to remain in the program. The GPDs and IBS will work with the student to identify potential fourth rotation mentors in a timely manner. To allow this flexibility, the IBS will provide stipend support up to the end of the Summer semester, with possible extension through the end of the Fall semester dependent on satisfactory progress. If the student has not successfully secured commitment from a faculty research advisor for dissertation research by the end of the Fall semester, the student will be recommended for dismissal from the PhD program.
- If a student separates from their faculty research advisor prior to completion of the dissertation, the student will be placed on Academic Warning and required to secure a new faculty research advisor, either from their previous rotation mentors, or by completing a fourth rotation with a new mentor. The GPDs and IBS will work with the student to identify potential fourth rotation mentors in a timely manner as necessary. To allow this flexibility, the IBS will provide up to 2 months stipend support for the fourth rotation, after which funding must be provided by the new faculty research advisor. If the student has not successfully secured a faculty research advisor at the end of the fourth rotation, the student will be recommended for dismissal from the PhD program.
- Students will only be eligible for the IBS-provided fourth rotation stipend funding extension one time during their PhD program.

Curriculum – Year 1

Fall, First Year. All students take Genes to Cells, Systems Physiology, and Molecular Basis of Human Disease, along with the first lab rotation (approximately September-December) and the first career skills course, which focuses on scientific writing and speaking. Students may not enroll part-time or take courses out of order in the core curriculum without special permission.

- 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)

2023 Fall Semester

COURSE	TIME	LOCATION
BMSC 8210 – Genes To Cells	Mon-Tues-Wed 8:30-10:00am [8/28-10/11]	Ross 643
BMSC 8212 – Systems Physiology	Mon-Tues-Wed 8:30-10:00am [10/16-12/11]	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 [10/17-12/5]	Ross 643
BMSC 8215 – Lab Rotations	Rotation # 1 beginning Sept 11	Mentor lab

Spring, First Year. Students take the second lab rotation (approximately January-April), and the second career skills course, which focuses on ethics and grantsmanship. Following mandatory consultation with the GPDs, they also begin to choose from courses specific to the various PhD programs.

- Second Laboratory Rotation (2 credits)
- Career Skills: Ethics and Grantsmanship (1 credit)

- One or more Foundation courses:
 - Basic Science of Oncology (3 credits)
 - Introduction to Genomics, Proteomics and Bioinformatics (3 credits)
 - Infection and Immunity (3 credits)
 - Foundations of Experimental Neuroscience (3 credits)
 - Pharmacogenomics and Personalized Medicine (3 credits)
- Plus other electives

Summer, First Year. In the “summer” of the first year (approximately April-June), 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. The Careers course requires completion of an Individual Development Plan using [MyIDP](#) and discussion.

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

Laboratory Rotations

All IBS students are required to complete three different research rotations in the first year. Each rotation is designed as a BMSC 8215 Laboratory Rotation pass/fail course. Research rotations are critical for first year students to identify possible faculty research advisors for the dissertation, explore important research questions, and broaden research exposure, and rotations inform the selection of research advisor and collaborators.

- Three, ten-week rotations are carried out in the first year, and must be performed in three different laboratories. Exceptions will not be made. Any approved IBS PhD trainer may serve as a rotation mentor, and only one rotation student may be in a faculty lab at a time.
- The student is expected to be in the lab approximately 30 hrs/week during rotations.
- The rotation mentor will guide the student during the rotation by having frequent meetings to discuss the research project both conceptually and experimentally. Both the student and the mentor are expected to attend the rotation mini-symposia.
- 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 (May15), it is expected that the student will have selected a program and will have identified a faculty research advisor and PhD program. A fourth rotation will be granted only in the event that the student did not find a suitable faculty research advisor match.
- To receive credit for each rotation, all the following requirements must be fulfilled, including a) attend about 30 hours per week in the laboratory, b) satisfy research rotation objectives set by mentors, c) complete and discuss mentor and mentee evaluation forms, submitted by the due date, d) provide PowerPoint presentations, laboratory rotation reports, and peer presentation evaluations on due date.

2023-2024 Lab Rotation Schedule

ROTATION DATES	FORMS DUE	SYMPOSIUM (all materials due)
Rotation #1: Sept 11 to Dec 8	Sept 6	December 8
Rotation #2: Jan 8 to March 22	Dec 15	March 22
Rotation #3: March 25 to June 7	March 18	June 7

Setting up a Rotation

Students should review the [IBS Trainer list](#) and seek advice from any Graduate Program Director, the IBS

Director and other IBS students (whose rotation experiences are listed in the directory) for faculty suggestions based on their interests. Laboratory rotations can occur only with IBS approved PhD trainers. Not every lab has an opening for a student every year, and students will also receive a list of PhD trainers seeking students at the beginning of the year.

- Students should email potential rotation advisors with a brief introduction and a copy of the student CV. If there is no response within 48 hours, follow up with another email or contact a GPD.
- Prepare for the meeting by reading the mentor's latest papers, available from [PubMed](#). Be ready to discuss your research background, research experience, any abstracts or papers published, and shared research interests with the mentor.
- Ask the mentor about potential rotation projects and experimental procedures used in the laboratory. Ask about the mentoring philosophy and experiences by previous graduate students. Ask how the lab operates, and assess the fit for a rotation in this laboratory. Finally, ask if the mentor anticipates an opening for a potential student position in his/her laboratory.
- The IBS student directory lists each previous rotation, feel free to ask current IBS students about their experiences
- Once a rotation is confirmed with the mentor, email any other mentors of the decision, so they might offer any 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.
- Complete the BMSC 8215 [Lab Rotation Commitment Form](#), including mentor, student, and graduate program director signature. Return the signed form the IBS office by the stated deadline.

Rotation Presentations and Grading

At the end of each rotation, the student will give a brief presentation and complete a lab report (in the format of PNAS article) that captures the rotation. These activities are introduced in the 8216 Scientific Writing course, and IBS students annually share strategies for success with first year students.

- 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. The audience is comprised of other rotation students and their mentors, and IBS leadership. Each presentation will be followed by a short question session, and includes peer questions and feedback.
- 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 will also complete a short peer evaluation for 2 of the other students presenting, and receive feedback from 2 peer evaluations on their own presentation.
- Students are also required to submit a lab report, according to the PNAS guidelines. These guidelines are described in the first year BMSC Scientific Writing course. The mentor will provide feedback on the writing and revision of the student's report. The research report will be comprised 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 with two column- format and figures integrated in the paper.
- The mentor and mentee are individually asked to complete evaluations of their experiences that remain confidential to the IBS, and are required to have a short exit meeting to discuss the possibility of dissertation work in that lab.

PhD Mentor and PhD Program Selection

Selection of the faculty research advisor and associated PhD program generally occurs at the end of the first year. In exceptional cases, an additional fourth rotation in the summer may be required (see *Research Activities Policies* above). Failure to secure a faculty research mentor will prevent advancement to candidacy and can be cause for dismissal. Please use the [Program Selection Form](#) to report the Program selection.

In the event that a faculty advisor accepts two IBS students in any particular year, he/she typically cannot accept an IBS student in the following year.

Curriculum – Year 2

All students must meet with their Graduate Program Director before signing up for courses.

In the fall semester, all students take applied biostatistics for basic research, a PhD program-specific seminar series, and readings and research with their faculty 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 biomedical PhD programs that are relevant to their research. See the [PhD program courses here](#).

Fall, Second Year

- Readings and Research 8998 (with faculty research advisor, 1-3 credits)
- Applied Biostatistics for Basic Research (2 credits)
- Seminar course for the specific PhD program (1-2 credits)
- Additional Required and Elective courses for the specific PhD program

In the spring semester, students continue the program-specific seminar series and readings and research with their faculty 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.

Spring, Second Year

- Readings and Research 8998 (with faculty research advisor, 1-3 credits)
- Seminar course for the specific PhD program (1-2 credits)
- Additional Required and Elective courses for the specific PhD program

Summer, Second Year

- BMSC 8220, IBS Research Practicum (with faculty research advisor, 3 credits)
- Complete grant-style qualifier examination, advance to candidacy (below)

The grant-style proposal is both a training exercise to develop research competencies and serves as a qualifying exam for the PhD advancement to candidacy.

Grant-Style Qualifier Examination

Effective preparation of fellowship and 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 qualifier exam, and is in lieu of a comprehensive examination. A successful qualifier examination may also form a thesis proposal for the student and PhD dissertation committee. This section is designed to provide details for both the roles of the faculty members and the guidelines for the students. The IBS student organization (GW SOBS) also organizes annual workshops on the qualifier exam, with successful examples and strategies.

Note that this section was updated in Fall 2023.

During the qualifier process, 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 faculty research 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. 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.

Please use the [Qualifier Exam Form](#) to record committee members and dates.

Selection of Exam Topic

The qualifier exam topic is to be based on the student's proposed thesis project. The student and mentor are advised to discuss preparation for the Qualifier several times during the second year. Consider background and current reading, relevant grant applications, possible research directions and timeline for the exam.

The student will develop the specific aims and scientific focus of the proposal. The qualifier is an exam designed to develop the student's ability to synthesize literature and draft hypotheses that are testable with current technology and methods. It is an academic exercise; it is not the dissertation proposal or necessarily what the student will work on (though it can be). It is acceptable for the proposal to include experiments that the advisor would rather not do, assuming they are good experiments.

The project should be related to the lab's work, but not the same as what is written in current grant proposals. The student is encouraged to interact with his/her faculty research advisor and the exam committee members in focusing the specific aims. While the specific aims and proposal should serve as a sound starting point for the student's dissertation research, the student is likely to modify those aims following completion of the qualifier with the guidance of the thesis committee as the student's research develops. These qualifier aims are not "binding" for the dissertation.

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

Role of Primary Mentor

Once conceived and roughed out, the proposed project should be discussed with the mentor, who can approve the approach and make suggestions for improvement. Mentor feedback should be in the form of identifying strengths and weaknesses, but the mentor should not rewrite or redesign the project but rather help the student revise the proposal to make their vision viable. The role of the mentor is to help guide the student in this process, not do the work for them.

Mentor and student should agree on the timeline for the Qualifier, and discuss potential eligible committee members. Mentor and student should discuss expectations about mentor feedback on the qualifier, including turnaround time.

The student's faculty research advisor is expected to approve the topic, specific aims, and the final written qualifier proposal, but the advisor will not serve as a voting member of the examining committee.

Qualifying Committee

The Qualifying Committee will be comprised of the IBS Graduate Program Director from the student's home program, plus two *GW SMHS faculty* (not including the faculty research advisor and co-mentor if applicable). The committee must be approved by the IBS Graduate Program Director (GPD) overseeing the student's area of specialization. The majority of the committee must be [IBS PhD Trainers](#).

The GPD will "Chair" the Qualifying Committee. This requirement is intended to ensure consistency of exams and exam procedures. The Chair is responsible for the conduct of the examination, the preparation of correspondence, setting expectations for the conduct of the exam, and reporting progress and results to the IBS. Several new tools, including email templates for communications with students/committee members, are available

to the GPDs (see [Communication Checklist](#) document). In this role, the committee chair handles all formal communication between the committee and the student and makes sure that all committee members receive the final specific aims. The Committee Members send all feedback to the Chair (following the timeline set), and the Chair sends a final document to the student consolidating all the feedback. All correspondence will be informed in communications when feedback/approvals are due.

The student's faculty research advisor (and senior co-mentor if applicable) 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 faculty research advisor may provide information to clarify an area of confusion. In these situations, the advisor serves as a resource to the committee but may not participate by examining or answering for the student.

Examination Timeline

On a typical timeline, specific aims will be submitted to the committee by June 1, accepted within two weeks, and the completed grant application will be submitted by July 20 (for 5 weeks of writing), although this does not preclude earlier submission. Students may begin the qualifying process at any time after January 1 of their second year.

Should a committee require revisions to the specific aims or the written proposal submitted by a student, the clock is re-set. Oral defense of the proposal is expected within a month of completion but can be completed as soon as practical for the committee. Students must have a committee-approved written proposal before the Fall semester of their third year begins. Depending on committee member availability, the oral defense may be held shortly after the start of the semester. If the defense cannot be scheduled over the summer according to the prescribed timeline, the extension time must be allocated between proposal approval and oral defense, and not in the previous stages.

Timeline Summary

DATE/DEADLINE	OBJECTIVE
January-February	Orientation to qualifier; discussion of aims with faculty research advisor
March-April	Selection and approval of Qualifying Committee members
June 1 (latest)	Specific aims submitted to Qualifying Committee for rapid feedback/revision
June-July	Approved aims used to develop full proposal (5 week writing period)
July 20 (latest)	Written proposal submitted to Qualifying Committee
August 5 (latest)	Qualifying Committee returns any comments to student
September 15 (latest)	Approved written proposal, oral defense of proposal

Written Qualifier Proposal

A. Specific Aims and Specific Aims Page Organization. The specific aims page should contain an introductory section (typically 0.5 page) that places the experimental aims in context, identifying the current "gap" in knowledge and the student's approach to address the gap. 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 page will be the first page of the written proposal (1-page specific aims page plus 6 pages research strategy).

The Specific Aims page and Research Strategy should be evaluated as an academic examination and *not* like a highly scrutinized R01 application. The qualifier exam is part of an overall learning experience.

Because the aims form a crucial part of the proposal, they will be reviewed and approved by the student's Qualifier Committee before full development of the proposal, using the Qualifier Specific Aims Rubric below. 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 student within a week (that is, all specific aims revisions must be completed within two weeks of original submission).

Qualifier Specific Aims Rubric: The chair will gather feedback from the committee members on the specific aims and provide a consolidated report to the student with a Yes/No evaluation and comments on each of the following criteria:

- The aims address important questions and gaps in knowledge in the field.
- The topic of the proposal is likely to be a sound educational experience
- The methods are feasible and appropriately address the aims.
- The aims could be reasonably completed in the timeline of a typical PhD.
- The style and detail are appropriate for the training level.

B. Research Strategy. The six-page written portion of the qualifying examination is a research proposal written by the student. The research strategy section follows the aims page above. Once the student's specific aims page has been approved, the student will have 5 weeks to complete the research strategy proposal. The proposal should be written entirely by the student, and cannot resemble proposals by the faculty research advisor (the advisor may be asked to document any funded grant proposals for comparison). The student should make clear if there are any proposed collaborations or supplies needed to complete the studies. Scientific evaluation of the written proposal is the responsibility of the Qualifying Committee, not the faculty research advisor. However, the written proposal must be approved by the faculty research advisor before it may be submitted to the Qualifying Committee. The faculty research 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; such plagiarism is grounds for dismissal from the program.

Complete 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
- iii) The proposal should be single-spaced.
- iv) Margins must be at least 0.5" on all sides (e.g. "narrow").
- v) All pages should be numbered.
- vi) A list of cited references should be included after the research strategy section, with the same general formatting. 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.

Written Proposal Organization. The research strategy should contain the following subsections:

- i) *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).
- ii) *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).
- iii) *Approach.* For each Aim, describe the proposed experiments, including 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. The qualifier 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.

iv) *Timeline*. A timeline should be included that outlines what work will be done in each year of the project.

The Chair of the Qualifying Committee should examine the proposal for compliance with **format requirements** as soon as possible after receiving it. Proposals that 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.

Evaluation and Defense of the Proposal

The completed **written proposal will be reviewed within two weeks** by the Qualifying Committee, using the criteria below. The committee may recommend progression to an oral defense or major revision. 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.

- 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 of 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.

Qualifier Proposal Rubric: The chair will gather feedback from the committee members on the proposal and provide a consolidated report to the student with a Yes/No evaluation and comments on each of the following criteria:

- The proposal is organized by the requested subsections (Significance, Innovation, Approach, Timeline).
- Sufficient detail is provided to contextualize and justify the proposed experiments.
- The rationale for each experiment is clearly described.
- Sufficient, and not excessive detail is provided for the chosen methodologies.
- Potential outcomes and interpretations are described, and alternative approaches are considered
- Appropriate experimental design components including controls and data analysis approaches are present.
- The proposed studies and timetable are realistic.

Oral Examination

The GPD chairperson should read the Defense Guidelines (below) at the outset of the meeting and actively guide the proceedings. A pre-meeting of the committee to review exam expectations is recommended, and the committee may confer to define the most pertinent questions that warrant appropriate answers, aiming for an exam not to exceed 2 hours in length.

Committee members should avoid introducing their own biases on how the research should be done and recommending wholesale changes.

The examination should follow a structure similar to a Dissertation Defense.

At the oral defense, the student will present a brief, 20-minute overview of the proposal and describe the approaches and anticipated outcomes for each aim, using up to 20 slides, as desired. Remember that the committee has read the proposal, so this overview is designed to orient and focus the committee, not to provide all those details. 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." Following the overview presentation, the Chair will guide two rounds of questioning with defined time limits to ensure no one committee member dominates questioning. The examination is expected to include both general knowledge and proposal-specific questions from each examiner.

The GPD will query committee members as to student performance using the Qualifier Defense Rubric below. 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 the written document 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.

Successful completion of the qualifier examination will allow the student to advance to candidacy. The proposal will be considered to meet the requirement for an approved dissertation topic. 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.

Qualifier Defense Guidelines.

- i) The student will present a brief (20-minutes maximum) overview of their written proposal, and describe the approaches and anticipated outcomes for each aim, using no more than 20 slides.
- ii) The Chair will guide questioning.
- iii) Committee members will address questions to the student regarding scientific or technical aspects of their proposal, topics of general significance, background knowledge, alternative approaches, and hypothetical outcomes.
- iv) Committee members will take turns presenting their questions to ensure equal time is granted to all participants.
- v) Questions will be asked once the student has finished their presentation
- vi) The role of the faculty research advisor and (if applicable) co-mentor is observational only. They should sit apart from the examination participants.
- vii) The committee will consult following the examination to determine the outcome and provide feedback on the student's performance.

Oral Exam Preparation.

- i) The student should be familiar with the theoretical and factual background relevant to the 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 stated specific aims and which have the potential to add new and useful information to the field of investigation?

Qualifier Defense Rubric: The committee chair will gather feedback from the committee members on the oral defense and provide a consolidated report with an evaluation (Below Expectations – Meets Expectations – Exceeds Expectations) and comments on each of the following criteria:

- Student presented brief overview of the written proposal, with integrated knowledge from multiple courses, and approaches and anticipated outcomes for each aim.
- The student was conversant with the literature, including both general knowledge and specific matters relevant to the proposal - at a level expected for a 2nd year doctoral candidate.
- The student identified gaps in current knowledge that the proposal was designed to address.
- The student addressed an important problem or a critical barrier to progress in the research field.
- The student critically assessed the background and significance of the project.
- The student described the "big picture" - thinking logically & critically.
- The specific aims were logical and defensible.
- The hypothesis was original and testable.
- The study design and methods were rational and justifiable.
- The proposed controls and analyses were appropriate.
- Advantages and limitations of the techniques were discussed.
- Outcomes and alternative/hypothetical strategies were presented.
- The language and presentation style were clear and organized logically.
- Appropriate terminology was used.
- Overall, the student gained new and useful knowledge from this academic exercise that will propel their ongoing graduate studies and potentially lead to a successful grant proposal.

Students who have initiated, but not yet completed their qualifier are advised to take the BMSC 8220 Practicum class (3 credits) over the summer. This course is an extension of the 8998 Advanced Reading & Research course (students are permitted up to 3 cr of 8998 per semester [graded] in 2nd year) available pre-candidacy.

External Research Fellowship Opportunities

We strongly encourage IBS students to pursue external fellowships that can support stipend or research during the PhD. 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. Many students adapt their successful qualifier written proposal and prepare additional materials to submit an external fellowship application to the NIH F31 or other predoctoral funding opportunities.

The student and the faculty research advisor should notify the IBS and their department's research administrator as soon as they consider applying for any external fellowship to ensure their submission can be processed in a timely manner. We strongly recommend at least one meeting of student, faculty research advisor and IBS Director at least 6 weeks before the intended fellowship deadline to review application strategies. Applications also require estimates of remaining course obligations and tuition, please contact the IBS office to confirm the remaining cost of tuition before preparing an application budget.

Instructions for preparation of an [NIH fellowship](#), [diversity supplement](#), and [foundation fellowship](#) opportunities are provided at [SMHS Research](#), and template materials and successful examples of various applications are available. Dr. Hall will work with students one-on-one and with the faculty research advisor as desired.

IBS Students also complete for [COSMOS Club](#) and other research awards.

BMSC 8219 Writing the grant-style qualifier proposal and fellowship (2 cr) is an elective course taught every Spring that covers major objectives for the qualifier including how to write specific aims and research approach, as well as drafting sections of a fellowship application such as candidate background and sponsor statements.

Curriculum – Year 3 and Beyond

Students in Year 3 are typically in full-time research, and register for 3 credits of their program-specific dissertation course (-8999) year-round (Fall, Spring and Summer) in Year 3 and beyond.

Students should form a thesis advisory committee and have a first meeting in the fall of the third year. This is to insure strong oversight of the student in the PhD program. The thesis advisory committee may include members from the qualifier committee, or may be reconstituted.

Students should consult with their faculty research advisor to identify members for their PhD [thesis advisory committee](#), consisting of the faculty research advisor, a senior co-mentor if applicable, and three additional faculty members (one of whom should act as the committee chair). **The thesis committee must have a majority of [approved IBS trainers](#) who must all be GW faculty** (with the exception of the mentor for students at external sites). A minimum of 2 committee meetings should be held per year (every 6 months), and the committee chair must submit the [Thesis Committee Meeting Summary form](#) to the IBS office after each discussion. GPDs will be provided the most recent summary forms each semester so they may review student progress in the program. Students and their faculty research advisor should plan on regular thesis committee meetings to occur every six months, regardless of level of progress, and the IBS will insure timely completion.

Students are required to participate in PhD thesis advisory committee meetings at six-month intervals, and present progress reports in advance to their committees. At PhD thesis advisory committee 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. If the student is not progressing at the anticipated rate, reasons will be explored and the student advised of strategies to improve progress. Students must have committee meetings every 6 months and submit the meeting report to the IBS office.

During the dissertation phase, if at any time it appears that the student is not progressing steadily, the student may be advised that certain milestones must be met to remain in the program.

If a problem arises regarding incompatibility of the student and faculty research advisor, the IBS director and relevant GPDs must be informed immediately and meet with the student and advisor. If the student leaves the lab, Academic Warning is advised. Another possible faculty research advisor may be identified, although this may extend the course of the dissertation project (see *Research Activities Policies* above).

Faculty research advisors/committee members will grade the student's research progress in thesis committee meeting reports as Satisfactory or Unsatisfactory. An Unsatisfactory evaluation on a thesis committee meeting report can result in [Academic Warning or Academic Probation](#). Two consecutive Unsatisfactory thesis committee evaluations can result in dismissal.

Dissertation Progression to Graduation

As students reach the completion of their dissertation research goals, they should consult with their thesis committee, and provide an outline of the dissertation chapters. The "permission to write" from the committee should be noted in the Thesis Committee Meeting Summary form.

All dissertations will be submitted electronically. Gelman Library provides detailed instructions on [formatting and submitting your dissertation](#). As a reminder, abstracts should be limited to 350 words. Students are encouraged to work with mentors during the writing process. All mentors should 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.

Dissertation Defense

Towards the end of the writing process, students should identify the faculty they wish to serve on their [dissertation defense](#) committee. This committee may resemble the thesis advisory committee, although there are distinctions. The defense examination committee composition is set by the University and the IBS, and must have at least 6 members, distributed as follows:

- THE DISSERTATION COMMITTEE [4-5 members] — The faculty research advisor, senior co-mentor [if applicable] and three readers who have advised the student during the dissertation research process (these are your 3 thesis advisory committee members).
- TWO EXAMINERS [1 Inside, 1 Outside] — Examiners cannot have had a direct role in the dissertation research process. One examiner must be from within the academic unit [the student's PhD program/department], with the other examiner coming from outside of the academic unit. The outside examiner may be at GW in another program/department, at another university, or at another institution. The student may be required to submit the outside examiner's CV.
- DISSERTATION DEFENSE CHAIR — The examination is chaired by a member of the academic unit in which the student is enrolled. The chair cannot be drawn from the dissertation committee or examiners. It is recommended that the Graduate Program Director, if not an examiner or on the dissertation committee, serve as chair. The chair takes no part in the examination itself, except, if asked, to pose an introductory question to elicit an opening summary from the student.

The *majority* of the defense committee must be [IBS PhD Trainers](#)

It is important that the student identify a mutually agreeable date and time for the defense to take place while confirming their committee members. The defense will require 3 hours – a 1-hour seminar open to the public, followed by a 2-hour defense restricted to the GW academic community.

After the faculty research advisor has seen the dissertation, it should be distributed to the full committee at least one month prior to the scheduled seminar and defense. Students should also contact the IBS office who will assist in securing a room and preparing a program brochure and advertisement.

The process of defending and submitting a dissertation takes a significant amount of time and involves collaboration among the student, mentor, and IBS faculty and staff to complete all of the requirements in a timely manner. The IBS office publishes and distributes detailed [Graduation Guidelines](#) each semester which describe the relevant requirements and deadlines that students must meet.

Academic Warning and Academic Probation

While students are completing coursework, [CCAS policy](#) on academic standing places students on Academic Probation if they do not have a cumulative degree GPA of at least 3.0. CCAS policy additionally places students completing coursework on Academic Warning only in the following circumstances:

- if a single Incomplete is received within the first nine credits of the degree;
- if two or more Incompletes are on the transcript at any given time; or
- if a grade of C, C-, or F is received but the cumulative GPA is above the minimum required to remain in good academic standing in the program.

When the grade of F causes the student's cumulative degree GPA to fall below 3.0, the IBS will recommend that the student be placed on Academic Probation. When the grade of F does not cause the student's cumulative degree GPA to fall below 3.0, the IBS will recommend that the student be placed on Academic Probation. The

first grade of "F" received typically results in Probation, and one or more additional grades of "F" is cause for dismissal.

If students fail to make satisfactory progress in ungraded components of the PhD program, the IBS will place them on either Academic Warning or Academic Probation. The difference between these statuses is that Academic Warning is less formal and does not appear on the student's transcript, while Academic Probation becomes part of a student's permanent record and is recorded on the transcript.

Examples of ungraded circumstances that will result in a warning or probation:

- If a student receives an unsatisfactory grade in BMSC 8215 Research Rotations. Two unsatisfactory rotation grades can be cause for dismissal.
- If a student fails to match with a faculty research advisor following three rotations in the first year, the student is subject to Academic Warning. Warning requires a meeting of the student with IBS the IBS Graduate Program Director Committee. Courses of action typically include a fourth lab rotation to be completed within 2-3 months. Failure to match with a faculty research advisor within the following semester can be cause for program dismissal.
- Separation from the faculty research advisor prior to completion of the dissertation can be cause for warning (see *Identification of Faculty Research Advisor* above).
- Failure to initiate the qualifier candidacy exam by June 1 following the second year will result in Academic Probation.
- Failure to pass the qualifier candidacy exam by June 1 following the third year will result in dismissal.
- Failure to comply with [academic integrity](#) and [student conduct](#) policies, [professional conduct](#) expectations, [ethical and safety standards](#), and/or occupational health requirements (including any background and/or drug screening) can result in dismissal.
- Sequential unexcused absences from the laboratory will result in Academic Probation.
- An Unsatisfactory evaluation on a thesis committee meeting report can result in Academic Warning or Academic Probation. Two consecutive Unsatisfactory thesis committee evaluations can result in dismissal.

In general, following any Academic Warning or Academic Probation, the student must meet with IBS leadership including GPDs, and an academic success plan will outline the tasks/expectations to be addressed typically within a semester to return to good standing. Failure to resolve a warning or probation within the designated timeframe can result in dismissal from the program.

TRAINING FACULTY & MENTORSHIP

Faculty Research Advisor Eligibility & Review

Mentor Eligibility. The list of [IBS PhD trainers](#) is posted online and updated regularly. In general, PhD trainers are expected to have a high quality independent research program, recent publications, available funding for student support and an interest in fostering the next generation of researchers. In any particular year, not every PhD trainer will have an opening for a graduate student.

The IBS program has identified the following criteria for PhD trainers:

- *Expertise in biomedical sciences.* An IBS trainer should direct a biomedical science research program with a focus specific to human biology. For faculty with multiple projects, the biomedical project should be identified for IBS students.
- *Robust, independent research program.* A PhD Trainer should be leading an independent project, that may be reflected in independent publications, grants, and facilities. Faculty with a mentored award (eg NIH K award) are not eligible to serve as PhD training faculty.
- *GW faculty appointment.* PhD Trainers must be "regular faculty," and not research faculty or staff scientists (eg research assistant professors, etc). Any faculty who leave GW must retain an adjunct appointment while existing students complete their degrees.
- *Extramural funding for research.* A PhD trainer should have a record leading NIH, NSF or DoD federal funding or other substantial biomedical foundation funding. This criterion may be waived for junior faculty, with Chair recommendation.
- *Administrative approval.* Because PhD trainers assume financial responsibility for students following institutional support, the IBS ensures that administrative staff, Chairs, Division Directors and Deans are aware of, and support, faculty commitments to PhD training.
- *Mentor development.* New PhD trainers should receive guidance from experienced PhD mentors, as well as ongoing mentor development. Faculty who have not trained a student through the PhD are required to include a senior co-mentor with PhD graduates. All junior investigators should also have their own faculty mentoring committees.

Faculty who wish to become PhD Trainers should forward their full CV, their training history and current funding to the IBS office for review.

Faculty Research Advisor Mentoring Responsibilities

The faculty research advisor is often the most significant mentor for a PhD student and plays a major role in the development of the student. A good mentor is a coach, guide, confidant, supporter and problem-solver. The faculty research advisor is also the first person for help with financial support. Biomedical researchers who accept doctoral students for PhD study rely on a variety of approaches to advising, and may adopt different approaches for different students.

Because training doctoral students is among the most important academic functions, we articulate several basic principles. IBS PhD Trainers should strive to:

- Know the basic rules of the program, especially concerning the courses, rotations, the qualifier, and the dissertation defense. The Graduate Program Directors and the IBS office provide additional resources for this information.
- Commit themselves to regular communication with advisees, to discuss issues relating to the course of study, research progress and broader professional development. Such communication should include one-on-one meetings at least twice a month.
- Provide prompt feedback on research and manuscripts. Faculty research advisors should provide timely reading and feedback on manuscripts, abstracts, and dissertation drafts, as well as advice about strategies for publication.
- Take reasonable steps to pass along information about conferences, and where appropriate, to connect their students to other relevant scholars
- Offer advice about how to develop and sustain a research program, how to handle the job market, and how to build a career. This activity can be enhanced by discussion of the student's IDP.

- Write letters of recommendation on behalf of their students for grants, fellowships, and employment opportunities.
- Provide students respect and candor about their performance and prospects in all communications, both verbal or written.
- Graduate advisors should demonstrate discretion and respect for the student's privacy.

Doctoral students are free to develop/ choose their research projects in consultation with their faculty research mentors. Students are never to be assigned to projects sponsored by industry, and any 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.

Mentorship Guidelines & Resources

The IBS program works to encourage good mentoring, with orientations, temporary advisors/graduate program directors, shared expectations, annual review of student progress, activities for interactions, peer mentoring, and promotion of professional socialization. Training the next generation of biomedical scholars is a vital part of our academic mission. Fundamental to our success are the faculty who serve as research advisors and mentors to our doctoral students.

The IBS endorses the [2017 AAMC Compact Between Biomedical Graduate Students and Their Research Advisors](#) and expects IBS PhD Trainers and student mentees to review the individual commitments set forth there for successful graduate research training. In particular,

- Faculty research advisors commit to dedicating substantial time to the scientific, professional and personal development of the graduate student, and commit to a high level of professionalism and contributions to an inclusive environment, and
- Graduate students acknowledge their primary responsibility for completion of their degree and commit to maintain active engagement in classroom, lab and professional activities, with high ethical standards.
- Senior co-mentors provide guidance and expertise to the student and their primary mentor in project development, setting and meeting expectations, communication, evaluation, and career and professional development. A senior co-mentor is needed for each student that enters a lab until the faculty member has graduated a PhD student.

The University of Michigan has produced an outstanding guide, "[How to Mentor Graduate Students: A Guide for Faculty](#)." Faculty are encouraged to review this quick guide and reflect on mentorship skills and needs, and watch for new workshops to promote successful mentoring practices. The [AAMC Appropriate Treatment of Research Trainees](#) outlines the principles that are essential for nurturing supportive and inclusive research training environments which include leadership, professionalism, and equity.

To establish and sustain regular ongoing discussions between research advisors and predoctoral students, the IBS requires that all faculty research advisor and IBS student dyads complete the online [IBS Faculty Mentor/Student](#)

Trainee Compact. This IBS Compact is meant to describe a working agreement for graduate study, and should be completed within 1 month of lab commitment, and renewed periodically (at least annually).

Students and faculty research advisors should work together with respect and civility, and participate in periodic IBS Mentoring Retreats and added trainings.

FINANCIAL SUPPORT

IBS Fellowships & Graduate Research Assistant Awards

First-year IBS students are given funds to cover their living costs initially via IBS Fellowship stipends, and then by Graduate Research Assistant award salaries in Year 2+, which are distributed via monthly payments. Current (2023-2024) stipend/salary amounts are \$38,000 for Year 1, \$39,000 for Year 2, \$40,000 for Year 3, \$41,000 for Year 4, and \$42,000 for Year 5+ (periodic review of the NIH NRSA stipend levels and cost-of-living analyses affect these amounts). IBS Fellowships and GRA awards also include full tuition (typically 24 credits in Year 1, 21 credits in Year 2, and 9 credits each for Years 3, 4 and 5), and health insurance as specified below. Funding can be renewed annually with good progress.

First Year IBS Fellowships

- Fellowship STIPENDS are disbursed IN ADVANCE of the month they cover. The first stipend payment (Month 1) covers Sept 1–30 of the first year, and is deposited around Aug 28. The last stipend payment (Month 10) covers the period June 1–30 and is deposited around May 28.
- Students are strongly encouraged to enroll in direct deposit to receive their stipend/salary payments. As fellows, you must use the [Direct Deposit Authorization PDF Form](#). Payroll asks that you attached a voided check or online printout of your routing and account numbers to avoid any errors.
 - Stipend payments are disbursed on the last Thursday of the month prior to the month covered. In the event that the designated Thursday falls on a university holiday/closure, stipends will be disbursed at an earlier date.
- The university does not deduct any state or federal taxes for stipend payments. Therefore, in Year 1, students should set aside something each month to cover estimated taxes. We can't give tax advice, but here are the resources where you can find the information we can provide: [here](#), [here](#) and [here](#).
 - You may be [exempt from FICA](#)
 - The IRS requires that you pay an estimated amount of your income tax [each quarter](#), and your state might also require quarterly payments ([DC](#) – [MD](#) – [VA](#))
- Because stipends are not pay for work, the university does not provide an annual summary of disbursements (W-2) during tax season like they do for paychecks. Fellowship recipients will need to keep track of funds received from their award letter and their disbursements each month.

Graduate Research Assistant Awards

Beginning in Month 11, (July starting Year 2 of the program), the faculty research advisor provides funding for the student's salary, which is typically provided via a Graduate Research Assistant Award (usually awarded for the fiscal year, July 1 – June 30). Important notes about GRA Awards:

- Unlike fellowship stipends, GRA SALARIES are paid AFTER the work period. **This creates an unavoidable 8-week gap between paychecks during the transition from Year 1 IBS Fellowship to Year 2 GRA Award.** The pay for Month 10 (June) is received around May 28, and the pay for Month 11 (July) is received around July 28. Once GRA award payments begin, there should be no further interruption in compensation.
- Unlike fellowship stipends, federal and state taxes are withheld from GRA salaries. Because of this, the GRA award requires similar paperwork to a regular job. Students entering Year 2 and starting their first GRA Award at GW should complete the following tasks (they only need to be done once, not each year).
 - Financial Forms: Students will need to send their [W-4](#) and [state tax withholding forms](#) to the payroll office [payroll@gwu.edu].
 - Identification: Students will need to follow these steps to submit the I-9 form, which will require [2 forms of ID](#).
 - Complete Section 1 digitally at <http://www.newi9.com/> on or before your date of hire, then enter employer code 14290. After you finish, you'll see a list of acceptable original documents you can bring to complete the in-person verification for Section 2.
 - Section 2 requires you to [make an appointment](#) within 3 days of your hire to present your documentation in person at the HR office (2013 H Street, NW).

- **SmartBenefits:** As a GW student, your best option to use the Metro system is likely the university's [U-Pass](#). However, if you are interested in using [SmartBenefits](#) deductions for your transit expenses instead of or in addition to U-Pass, you have that option as a GW-based GRA (however, note that the U-Pass charge goes on your student account, and you cannot pay for it with SmartBenefits). You can sign up or change your SmartBenefits at any time.
- **Background Screening:** All first-time GW-based GRAs are required to complete a [background check](#) per university policy. Some time after you receive your award letter, you will receive an email notification from Sterling, the university's background check provider to submit your required details online (please do so as soon as possible as you cannot get paid until your background check is complete). Be advised that the email from Sterling may go to your personal email and/or Spam folder – please check all of your email accounts and Spam folder(s) regularly to see if it is there until you have completed this requirement. The Office of Graduate Student Assistantships and Fellowships administers this process (not the IBS), and the university covers the cost. You only have to do the background check once, you do not have to renew it each year.
- **Email:** As a GW-based GRA, you will have both the student type (@gwmail.gwu.edu) and the employee type (@email.gwu.edu) of [email accounts](#) activated. This creates complications because emails sent to the @gwmail account will not show up in the @email account, and vice versa. Therefore, you MUST decide which account you will check regularly, and forward the other one to that account. That is the only way that you will receive emails to both accounts in once place. You should also combine your @gwmail and @email calendars so that you don't miss out on important meetings and events.
- CNH students should consult their faculty research advisor, division administrator, and [Natheer Samarraie](#) in operations to determine and complete the required tasks for CNH GRA onboarding. As a hospital, CNH requires added clearances including a negative tuberculin test and drug testing (including THC) for all staff. CNH students will continue with only their student @gwmail account activated (they will not have access to the faculty/staff @email version).

Award Conclusion. Approaching the dissertation defense, the student and mentor must determine the last day of the student's research activities in the lab (when their GRA/fellowship award will end). The student and mentor will need to discuss and agree on this end date (it must be the last day of the month at GW due to the way awards are processed). At GW students may remain supported by their award to finish up lab activities following their defense until the end of the semester, but may end their activities and award at an earlier date depending on the student's and mentor's plans.

- Once a GW student's last date is determined, they need to communicate it to the department administering the GRA/fellowship award, and to the IBS if they also have a supplementary IBS award. The department/IBS then need to submit a Change in Status form to end the award on the appropriate date. 1 months' notice is requested to terminate awards accurately.
- Students at CNH should check with their mentor and division administrator for specific procedures at their institution.

Financial information related to External Fellowships. Students are encouraged to pursue [external fellowships](#) such as the NIH F31, NSF or private foundation awards. The student and faculty research advisor should notify the IBS and their department's research administrator as soon as they consider applying for any external fellowship to ensure their submission can be processed in a timely manner. Securing independent funding as a PhD student is a prestigious honor and an important step in the development of your research career.

F31 NIH Fellowships, [here](#). Stipends must be paid in accordance with stipend levels established by NIH, which are based on a 12-month full-time training appointment. The NIH awarding IC will adjust fellowship awards on their anniversary dates to include the currently applicable stipend amount. The NRSA fellowship currently (2022) provides a stipend \$26,352 ("subsistence allowance"), maximum tuition \$16,000 and an institutional allowance of \$4,400. This allowance will "help defray the cost of fellowship expenses such as health insurance, research supplies, equipment, books, and travel to scientific meetings." Students are reimbursed up to the annual SHIP cost (\$2700 for 2022-2023), and are responsible for any health insurance costs over that. The student is the PI of this award that goes through University MyResearch, and the student must complete annual RPPR reports to NIH. The NIH stipend amount is well below the IBS stipend (currently \$38,000 year 1; \$39,000 year 2; \$40,000 year 3; 2022), and the difference is "topped up" by institutional funds to meet the current IBS stipend. Note that the F31 stipend cannot be topped up by any other Federal funds (ie cannot use the advisor's R01).

NIH Administrative Supplements to Enhance Diversity, [here](#). This is an administrative supplement to the research advisor's awarded grant. This will provide a salary (not a stipend) for an eligible graduate student, at "institutional salary rates." Salary and fringe benefits, supplies and travel, and tuition are the only budget categories allowable for diversity supplements. Total compensation (salary, fringe benefits, tuition) for a graduate DS cannot exceed NRSA year 0 postdoc stipend (FY22 \$54,840). As an example, we suggest a budget that maximizes the student compensation: a year 3 IBS graduate student would receive \$40,000 salary at the institutional rate for IBS, fringe benefits including health insurance (FY 23 here at 7.95%, or \$3,180), modest travel \$500 if allowed by NIH, and at least partial tuition "up to the NRSA level for predocs at university." For example, a third year IBS student might be taking 12 credits/year (GW CCAS graduate tuition FY 2022 at \$1885 per credit), and the partial tuition should be used toward these IBS courses.

For more information about financial awards, please contact

Tara Y. Davis, MBA
Director / SMHS, Finance & Research Administration
tdavis1@gwu.edu, 202-994-0544

Colleen Kennedy,
IBS Associate Program Director
gwibs@gwu.edu, 202-994-2142

When GW-based students obtain external fellowships, they will receive a stipend (like an IBS first year award) and not a paycheck (like a GRA award).

- Stipends are disbursed in advance of the month they cover (i.e. Aug 25 deposit covers Sept 1-30). This is the same for IBS Year 1 funding, but it is different from GRA pay, which is disbursed at the end of the corresponding month (i.e. Aug 31 deposit covers Aug 1-31).
 - If you are transitioning from a GRA award to an external award, your last GRA payment and your first stipend payment may be deposited around the same date so you might get 2 months pay at once.
 - If you are transitioning from a first-year IBS fellowship to an external fellowship, your regular schedule of payments should continue at normal intervals.
 - Stipend payments are disbursed on the last Thursday of the month prior to the month covered. In the event that the designated Thursday falls on a university holiday/closure, stipends will be disbursed at an earlier date.
- The university does not deduct any state or federal taxes for stipend payments. Therefore, fellows should set aside something each month to cover estimated taxes. We can't give tax advice, but here are the resources where you can find the information we can provide: [here](#), [here](#) and [here](#).
 - You may be [exempt from FICA](#)
 - The IRS requires that you pay an estimated amount of your income tax [each quarter](#), and your state might also require quarterly payments ([DC](#) – [MD](#) – [VA](#))
- Because stipends are not pay for work, the university does not provide an annual summary of disbursements (W-2) during tax season like they do for paychecks. Fellowship recipients will need to keep track of funds received from their award letter and their disbursements each month.
- **Email:** As fellows, students only have access to the student (@gwmail.gwu.edu) email accounts, and do not have access to the staff/faculty version (@email.gwu.edu). Messages sent with an @gwu.edu ending will still work but will show up in the student side of your account. When transitioning from a GRA award to an external fellowship, you should monitor both sides until the @email expiration and update your accounts/contacts as necessary to use @gwu.edu or @gwmail.gwu.edu instead of @email.gwu.edu.
- **SmartBenefits:** Students transitioning from GRA to External Fellow will no longer be eligible for SmartTrip commuter benefits – eligibility for the university's [U-Pass](#) program is not affected.
- **GWorld Card:** The Gworld card office may require that you get a new card, depending on the role you held (IBS Fellow or GRA) prior to starting the fellowship. Follow any instructions you may receive from them.

- Students at CNH should consult with their faculty research mentor and department administrator about applying for and processing external fellowship awards as the information here pertains only to GW-based students.

University-Supported Activities, including TA-ships. IBS students are not required to TA for their fellowships, nor is it part of their required curriculum. The GW Office of Graduate Student Assistantships and Fellowships states that a student receiving a full-time award cannot receive any type of financial support from the university on top of that as described [here](#), under #6 Conditions of Assistantships. If another university-compensated position is obtained, then the existing IBS award must be reduced by the same amount, with the effort on the existing award also understood to be reduced such that the existing and new efforts total full time. Given that all IBS students receive full-time financial awards to support their research endeavors, payment for service in a TA or other university position is not possible during the PhD program.

Leave Guidelines. GRAs at GW accrue the DC-mandated Sick & Safe time, which is ~2 hours of sick time per month tracked in [Kronos](#). All other vacation and sick leave for both Fellows and GRAs is negotiated with the PI. Leave duration may be based on the [GW HR leave guidelines](#) as a reference (15 days of vacation leave and 12 days of sick leave annually for staff). Once CNH-based students join their labs, they should check with their PI and center administrator for CNH-specific leave policies.

Tuition

The IBS provides tuition funding for students at GW SMHS and CNH sites. IBS Fellowships and GRA awards also include full tuition (typically 24 credits in Year 1, 21 credits in Year 2, and 9 credits each for Years 3, 4 and 5, with 2 credits per year as needed for Years 6-8).

Full Time Certification

Students in the dissertation phase (Year 3+) generally register for 3 or 1 credits per semester depending on their situation. This falls below the 9-credit threshold for automatic designation as a full-time student. However, all dissertation-phase students are eligible to request that their status be manually updated to [Full Time](#). This can only be done by special petition each Fall, Spring, and Summer semester as applicable.

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- Reasons you might petition for FT certification may be to keep any student loans you might have in deferment, for [FICA tax exemption](#), to comply with the terms of a fellowship, for [U-Pass](#) eligibility, or other causes.
- You must submit the form before the end of the requested semester (certifications will not be processed for retroactive semesters). You must also be **registered** (and registered in the correct course/credits) for that semester in order for your form to be processed. If you have not yet [registered](#) for the semester in question, please do so before submitted the FT Certification form.
- GW-based students with GRA awards can maintain FICA exemption in the Summer months (June-Jul-Aug), by registering for BMSC 8220 (in Year 2), your program -8999 course (in Year 3-5) or with Continuous Enrollment (Year 6+) submitted by IBS. You then submit the online FT certification request.
- Please keep in mind that the registrar can only process these petitions as of the first day of classes for the semester, so that is when it will take effect. After the petition has been processed, you can request a [letter of certification](#) from the registrar which will show your status as a full-time student for the semester in question. The university updates the National Student Loan Clearinghouse with this information each semester during the allowed window of time for these changes which falls between the add-drop date and the 30th day of the semester.
- To submit a Full-Time Certification request, click the Half-Time/Full-Time Certification link under the "Transcripts & Certifications" section: <https://registrar.gwu.edu/forms>

Health Insurance

The IBS covers the cost of each student's health insurance in the first year during the Fellowship term, and covers insurance costs for students in Year 2+ who are based in SMHS labs. Students in Year 2+ in other schools or at CNH have health insurance covered by those entities.

IBS Fellows and SMHS-based senior students have the option to (1) enroll in GW's Student Health Insurance Plan [GW SHIP] or (2) select an external plan and request reimbursement up to the cost of GW SHIP.

The [GW SHIP](#) is a gold-level plan according to Affordable Care Act guidelines. All on-campus graduate students (aka all IBS students) are automatically enrolled in the Fall semester (start Aug 12) and again for the Spring-Summer period (start Jan 1, for students that continue enrollment). For SHIP auto-enrollment to process, students must have (1) [accepted their financial award in Gweb](#) for the year in question, and (2) be registered for the semester in question. With auto-enrollment, one of two possibilities apply to IBS students:

- **Students who want to [stay enrolled in the SHIP](#)** do not need to take any action. You will be enrolled and for first-year and SMHS-based students, the IBS award on your student account will cover the cost.
- **Students who want to [keep your own insurance](#)** (i.e. you do not want to be enrolled in SHIP) must [complete the waiver form](#) by the stated deadline. If you do not complete the waiver by the deadline, you will not be eligible for reimbursement of your external plan for first-year and SMHS-based students (details below). If you submit the waiver by the deadline, it should also carry over for the Spring/Summer period (i.e. you only have to submit the waiver once per year). However, you should keep an eye on your student account charges to ensure that no SHIP charges post in September or January once you submit the waiver. **It is always recommended that CNH-based students submit the waiver** as your health insurance is provided by CNH and if you do not waive the SHIP by the deadline, you will also be responsible for paying the SHIP charges in addition to your external plan.

Students submitting a waiver always maintain the option of signing up for SHIP due to a [Qualifying Life Event](#) (QLE) at any time during their program, or enrolling manually during the Spring open enrollment period if they wish by contacting the SHIP office [ship@gwu.edu]. All students also have the option of enrolling in Dental, Vision and Renters insurance at your own expense regardless of which health insurance option you choose.

For first-year and SMHS-based students who elect the GW SHIP (and enroll via the special process), the fee will be charged to their student account. The IBS will place an award on the student account to cover this cost, meaning that the student does not have to make any payment themselves for the premium. You also have the ability during enrollment to add qualified dependents (spouse/children) to the GW SHIP at your own expense.

About 5 days after your SHIP enrollment, you should be able to log into the [Aetna website](#) at to look up providers/claims and download your card (they do not mail them). If you have trouble logging in or you have questions about the coverage, please call UHP at 800-437-6448 or 800-213-0579.

External Insurance Plans

Instead of enrolling in the GW SHIP, some students may want to secure health insurance coverage from a different source. Examples of external plans are those that you find on the Affordable Care Act state exchanges or a parent's or spouse's plan. In this case, you can request reimbursement from the IBS up to the cost of the Fellow/GRA insurance which is currently \$2841 per year. 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 premium 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. You may email the IBS office your documentation 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. Required documents for individual plans:
 - a. Ensure that your permanent address is correct in [Gweb](#) (Personal Information Menu section). Include your permanent address when you email us your reimbursement documents. Any discrepancies in address will cause accounting to reject a reimbursement request.
 - b. Proof of enrollment (front & back of your insurance card is fine)
 - c. Brochure showing price of the plan you are enrolled in
 - d. Receipts for each premium payment you are requesting reimbursement for

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 TERM	SUBMISSION DEADLINE
Fall	Sept 1 – Dec 31	January 10
Spring	Jan 1 – May 31	June 10
Summer	June 1 – Aug 31	Sept 10

Required documents for group plans:

- a. Ensure that your permanent address is correct in [Gweb](#) (Personal Information Menu section). Include your permanent address when you email us your reimbursement documents. Any discrepancies in address will cause accounting to reject a reimbursement request.
- b. Proof of enrollment – front & back of your insurance card is fine
- c. Contribution chart indicating the plan you are enrolled in and showing all price options (i.e. individual vs. spouse vs. family)
 - The IBS office will calculate the portion of the insurance premium cost which is applicable to the student (i.e. spouse plan cost minus individual plan cost) to determine the amount that we are able to reimburse.
- d. Receipts for each payment you are requesting reimbursement for during the coverage term
 - If you pay out of pocket for insurance, things like email receipts for payments are fine, as long as they show your name, the coverage term, and the amount paid for the premium.
 - If the health insurance premiums are deducted as an employee, please submit pay stubs as your receipts, with everything redacted except the name, date and health insurance deduction.
 - If the final paystub for one semester crosses into the next semester reimbursement period (i.e. last Fall paystub is Dec 20 – Jan 3), that is fine – we will pay it out fully and bump your next semester's reimbursement period forward accordingly.

U-Pass and Parking

GW U-Pass Program

[U-Pass](#) provides unlimited WMATA metro rail and bus access for the Fall and Spring semesters for \$100 per semester. Start and end dates for the pass are tied to the first and last days of the applicable semester according to the university's academic calendar. During winter and summer breaks, students must access metro using a standard method and payment. A U-Pass physical card will work for a single academic year – a new card must be obtained for each subsequent academic year.

Undergraduates are automatically opted in and charged for a U-Pass. Graduate students can elect to pay for and receive a [U-Pass as an Opt-In charge](#) on their student accounts. IBS students who are registered for 9 or more credits are automatically designated as Full Time students and can process their payment at the beginning of the semester. *IBS students who are registered for less than 9 credits must first submit a Full Time Certification form to request FT status.* Once this form is processed, the system will update U-Pass eligibility overnight and students should be able to select and pay the charge the following day.

Graduate Student U-Pass Enrollment

1. Ensure you are enrolled as Full Time Status (you can check in [DegreeMap](#) in the Time Status field)
2. Log into [Gweb](#) and access the [eBill system](#)
3. Go to the Make Payment menu at the top of the screen and the U-Pass option should be under Additional Items. Pay the charge and print your receipt.

4. Fill out the [disclaimer form](#) (under "Helpful Links"). You will need to show the confirmation email when you pick up your pass.
5. Bring your [1] payment receipt and [2] disclaimer form confirmation to the [U-Pass](#) distribution location to obtain your U-Pass.

Contact – upass@gwu.edu

Student Parking

Graduate fellows and assistants are entitled to a small discount on the [monthly parking rate](#). Students who are interested in signing up for parking should reach out to parking@gwu.edu for the requirements and forms. Be advised that you may have to provide your IBS fellowship or GRA award letter as documentation of your eligibility for the discount.

A daily student parking rate is also available (permit required) for those that do not want to sign up on a monthly basis.

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. We update and post the [career outcomes](#) of our biomedical PhD graduates on the IBS website . Many essential and transferable skills are obtained in required courses in science writing, ethics and grantsmanship and described by experts in an annual career panel.

Competencies

PhD training emphasizes development of the [core competencies](#) noted by the National Postdoctoral Assn, including 1) discipline-specific knowledge, 2) research skill development, 3) communication skills, 4) professionalism; 5) leadership and management skills, and 6) responsible conduct of research. Students are required to complete an Individual Development Plan (MyIDP) in their first year, and encouraged to annually update the plan and identify their goals in each of these areas.

Exploring Scientific Careers

The IBS [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.

- Get involved with [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.
- Visit the GW Center for [Career Services](#) that provides extensive programming and services to graduate students, including the Handshake program to find a job. Many events are posted by RSS feed on the IBS homepage. The [CCAS Graduate Career Services Office](#) is another key resource for career planning and exploration.
- Update your 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](#).
- Try the [3 Minute Thesis Competition](#) and present at the [GW Research Showcase](#).
- Attend the GW chapter of [Toastmasters](#) International and refine your communication skills.

Student Organization

IBS students are represented in the campus student life system by the [GW Student Organization of Biomedical Scientists \(GW-SOBS\)](#). GW-SOBS serves as a student government forum for the advancement of, and advocacy for, Institute of Biomedical Sciences (IBS) graduate students intellectually, professionally, academically, and socially. IBS students will receive information from GW-SOBS on a variety of academic, professional development, and social events, and are encouraged to actively participate in the initiatives and endeavors designed to foster a collaborative and collegial environment in our programs.

PHD TRAINING AT CHILDREN'S NATIONAL SITE

Some of our PhD Trainers have labs located at our partner Children's National Hospital, which also forms the GW Department of Pediatrics. Students must follow the steps below to obtain the CNH Volunteer Service Office's approval prior to starting in any CNH lab. This process takes an average of 3-4 weeks to complete, so we recommend reviewing and starting the process prior to arriving for orientation.

All information and forms are available on the [CNH Special Category Associate Application](#) website

Review the orientation packet and confidentiality agreement

Complete the intake form, following these guidelines where indicated:

Supervisor Information

Department Name: Center for Genetic Medicine Research Name: Ljubica Caldovic
Cost Center: 30200 Phone: 202-476-5819
Supervisor Employee ID #: 28223 Email: LCaldovic@childrensnational.org

Associate Role: select "Research Trainee"

Email your completed form to Dr. Caldovic (LCaldovic@childrensnational.org), Toni (THagans-Greene@childrensnational.org) and Natheer (NSamarraie@childrensnational.org) for processing.

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) or a blood TB test, 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 Special Category Associate 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 CNH after completing the first part of the volunteer application*

All forms must be submitted by email and Associates may not begin their assignment nor receive an ID badge until they receive an acceptance email from the Special Category Associate Office. 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 Special Category Associate 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.

Should you have any questions or concerns about/during the process, please reach out to SpecialCategory@childrensnational.org and/or Toni Freeland in the Center for Genetic Medicine Research (THagans-Greene@childrensnational.org).

CNH Research Division Administrators:

Center for Cancer and Immunology Research	Stella Ghattas	smlee@childrensnational.org
Center for Genetic Medicine Research	Toni Freeland	THagans-Greene@childrensnational.org

Center for Neuroscience Research	Nikkie Adesida	NAdesida@childrensnational.org
Center for Prenatal, Neonatal and Maternal Health Research	Geraldine Pluvios	GPluvios@childrensnational.org
Sheikh Zayed Institute for Pediatric Surgical Innovation	Lisa Romano	Lromano2@childrensnational.org

Travel to CNH

The CNH [main campus](#) is located in the northeastern part of DC, north of Union Station. There is a shuttle between Ross Hall that makes several trips daily. CNH also operates their own [shuttles](#) from the Brookland-CUA, Union Station, and Columbia Heights metro stations to the main campus. The new [CNH Research & Innovation Campus \(RIC\)](#) is a couple of miles north of that near the Silver Spring border.

CONFLICT RESOLUTION

WHAT IF THERE IS A PROBLEM?

We recognize that conflicts between graduate students and faculty can arise during graduate study. The IBS works to prepare mentors and mentees with strong communication skills, including completion and updates of [Mentor/Mentee Compact](#) and mentor and mentee development activities to build strong relationships.

We outline the attempts that should be made to resolve conflict with the understanding that not all conflicts will have a mutually agreeable resolution. This handbook has specific guidance that outlines the IBS program procedures.

Please note that the process below does not apply to matters of student-to-student conflicts; academic misconduct, such as breaches of academic integrity in research and publication; discrimination; or sexual misconduct. Specific policies on [academic integrity, discrimination, harassment, and sexual misconduct](#) are available on GW's website. **Students and graduate faculty are expected to conform to all GW policies.**

Escalation

- In the event that a conflict arises that is not addressed by an existing GW or program policy, the student and faculty member should attempt to work out the issue. Each party should document when meeting(s) occur and briefly summarize how attempt(s) to create a mutually satisfactory resolution were approached.
- The GPD or individual members of the thesis committee may be helpful and skilled in assisting in these discussions.
- If the parties cannot reach a mutually satisfactory resolution, please engage the IBS program or home department to attempt to facilitate the resolution. These efforts may be undertaken by the dissertation committee, IBS director or department chair. In all cases, local resolution should be attempted by the graduate program or home department before the matter is escalated.
- If resolution is not achieved within the IBS graduate program or home department, the matter may be brought to the CCAS dean of graduate studies. The dean may rely upon additional university offices for assistance in resolution (i.e. OVPR).

In addition, any faculty who have concerns regarding student progress or well-being are encouraged to contact the IBS office and/or Graduate Program Directors. They may also submit a [CARE report](#) to the university to initiate a response from the student support team.

The Raise Up [GW REACH program](#) provides resources for faculty to build student Resilience by promoting Engagement with and Access to Campus Health and well-being resources. Faculty and staff have the opportunity to engage in workshops that will provide information about student well-being trends, availability of services, and how to make appropriate referrals to those services.

RESOURCES FOR GRADUATE STUDENTS

Student Life

- The [Admitted Graduate Student](#) page provides guidance on academic resources, life in DC and student services at the university. The [CCAS Orientation page](#) also has helpful information however please note that some practices and policies differ for IBS students vs. those in other CCAS programs.
- The [New Student page](#) provided by the Student Affairs office contains information pertaining to campus resources and support services.
- 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 Academic Policies page](#) contains information on the administrative policies and procedures applicable to your program.
- [U-Pass](#) provides unlimited WMATA metro rail and bus access for the Fall and Spring semesters for \$100 per semester. Graduate students can opt-in by following the instructions to [purchase a U-Pass](#) each semester.
- [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](#) is the specialized health sciences library and has outstanding resources on how to write an abstract, how to make a poster, how to do a literature search, and access to hundreds of scientific journals. Gelman Library is the general campus library and has a number of important research-related resources, including occasional relevant [workshops](#), [data services](#), and [coding training](#). They also offer free [poster printing](#)!
- [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](#) (Gweb) system. You will use Banner to [register](#), view your grades, transcript and [DegreeMap](#), and update your official contact information if necessary.
- The university's [IT division](#) provides a number of useful resources for students. First and foremost please review the [New Student 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 SAS. They have an online, over the phone, and in-person [support options](#). They can also assist you if you have problems accessing any of your [university accounts](#).

Health and Wellness

- 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 University Student Center [ground floor] or call 202-994-5300 (24/7).
 - The [Resiliency & Wellbeing Center](#) provides whole person care and education for all members of the SMHS community.
 - Students can use the [Lerner Health & Wellness Center](#) at 2301 G Street for free – just swipe in with your GWorld card!
 - GW provides a number of [emotional well-being resources](#) for students, including free access to the [SilverCloud app](#). The Division of Student Affairs has compiled an extensive collection of information and tools related to [numerous dimensions of well-being](#).
- [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.

- GW recognizes that there are times during which a student will need [emergency support](#), whether for personal expenses, textbooks or additional Colonial Cash for meals. The University offers a number of funds, in the form of loans and grants, to help address emergencies that arise. A description of the different funds and the online application are provided on the website. The [GW CARES Student Assistance Fund](#) is another option for [requesting](#) emergency funding.
- [The Store](#) is a student-run food pantry at the George Washington University that is managed by The Store student organization and the Division for Student Affairs providing resources and support for students living with food insecurity. Our mission is to address student need at GW by offering food and other resources to ensure that every student has the opportunity to succeed. Students can fill out an online application to access The Store on the website.
- Ross Hall CARE Space – Room 103a. There is a dedicated space in Ross Hall that serves as a safe haven and resource for any SMHS student experiencing distress. This space is intended to be a welcoming and peaceful environment for students to seek comfort, support, and resources for care during and after an upsetting or traumatic experience.

Diversity and Inclusion

- The university [Office for Diversity, Equity, and Community Engagement](#) provides leadership, resources, and support to advance and sustain inclusive environments for our faculty, staff, and students across the university.
- The [SMHS Office of Diversity and Inclusion](#) focuses on promoting a positive institutional culture and climate, and creating a community of excellence where all are welcomed.
- The [Multicultural Student Services Center](#) is the campus hub for Multicultural programming, campus community building, culture sharing, LGBTQIA, and Interfaith initiatives, all guided by a strong belief in our shared humanity.
- Connect with the [GW Black Graduate Student Association](#), [Out & About](#), [GW Folklorico](#) and other [GW Graduate Student Organizations](#).
- Sustain your community in national networks such as [Black in Neuro](#), [Latinx in Neuro](#), [Black in Micro](#), [Black in Cancer](#), the [Association for Women in Science](#) (and [AWIS DC chapter](#)), the [Annual Biomedical Research Conference for Minoritized Scientists](#) (ABRCMS) and the [Society for Advancement of Chicanos / Hispanics & Native Americans in Science](#) (SACNAS).

Conflict and Reporting

- Preventing Sexual Harassment and Sexual Violence – you will receive an email from GW's [Title IX office](#) to complete this mandatory online training. The Title IX website lists the resources available to the GW community related to sexual harassment, sexual assault, dating or domestic violence and stalking.
- All students – undergraduate, graduate, professional, on-line, full time, part time, law, etc. – must be familiar with and abide by the provisions of the [Code of Academic Integrity](#) and the [Code of Student Conduct](#).
 - 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

- The Code of Student Conduct is the primary document governing non-academic student behavior. It defines prohibited conduct for students and student organizations and sets up a conduct system to address reported violations and preserve student rights.
- The Student Rights & Responsibilities office provides a master list of [support resources](#) and [reporting options](#) for students with misconduct-related concerns.
- Members of the GW community who have been the target of, or who witness, a hate or bias incident may use the ODECE-provided online [bias incident reporting form](#) to make the university aware of these incidents. Their website also describes [additional ways to report](#) these concerns.

Safety

- 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. The [GW Guardian app](#) provides enhanced personal safety features such as receiving emergency advisories and allowing users to request help from campus authorities.
- You can sign up to receive municipal emergency alerts sent out by local governments in the DC area by visiting the [Capitalert](#) website.

Career Services

- [GW COMPASS](#), a student organization specifically for grad students in STEM fields, 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.
- The [GW Center for Career Services](#) and the [CCAS Graduate Career Services Office](#) provide extensive programming and services to graduate students, including the [Handshake](#) program to find a job.
- The university career services office (located in the University Student Center suite 505) provides a specialized self-service booth so you can take professional quality headshots at any time during business hours. Please see [their website](#) for details and booking - advance appointments are required. Remember to send your updated photo to the IBS office for our files any time you get a new headshot.

For general information updates, connect with the IBS [[Twitter](#) | [LinkedIn](#)] and the university [[Facebook](#) | [Twitter](#) | [Instagram](#) | [Snapchat](#) | [LinkedIn](#)] via social media.

Contact:

Colleen Kennedy
 IBS Associate Program Director
 Ross Hall 561 | 202-994-2179
 gwibs@gwu.edu | [ibs.smhs.gwu.edu](#) | [Twitter](#)