

NIH Mentor's Handbook

Thank you for agreeing to be a mentor to a GW student. We appreciate your commitment to graduate education and are here to assist you in any way we can.

General Information

Your student should be familiar with GW academic policies and procedures, and has an on campus Program Director to help him or her negotiate academic requirements and policies. There are also handbooks available on our website at <http://smhs.gwu.edu/ibs/> and on the GW College of Arts and Sciences Website <http://www.gwu.edu/~ccas/grad/handbook.html>. Both sites are updated periodically and may answer questions that arise. For anything that cannot be answered in our online resources, please feel free to contact the Director of the IBS or the individual Program Director of the program to which your student belongs at any time.

IBS Director:

Linda L. Werling, PhD
lwerling@gwu.edu
202-994-2918

GW NIH Partnership Program Director:

Stan Lipkowitz, MD, PhD
Senior Investigator, NCI
lipkowis@mail.nih.gov
301-402-4276

Program Directors:

Molecular Medicine:

Norm Lee, PhD
nhlee@gwu.edu
202-994-8855

Microbiology/Immunology:

David Leitenberg, MD, PhD
dleit@gwu.edu
202-994-9475

Biochemistry and Systems Biology:

Ljubica Caldovic, PhD
LCaldovic@childrensnational.org
202-994-1051

GW Rotation Advisor:

Anne Chiamello, PhD
achiaram@gwu.edu
202-994-7321

General Overview of the GW PhD program in Biomedical Sciences

All students in the Biomedical Sciences Program at GW (both those in the NIH GPP and those in the GW only programs) enter into a combined core curriculum. At the end of the first year the students choose a lab and begin their dissertation research. They also select one of the three PhD programs offered in the Biomedical Sciences at GW. The three Ph.D. Programs are 1) Biochemistry and Systems Biology 2) Microbiology and Immunology, and 3) Molecular Medicine. During the second year the students take additional courses towards fulfillment of their course requirements. At the end of the second year, the students complete a comprehensive examination. After successfully completing the exam, the students spend their time pursuing their dissertation research. All students in the GW-GPP are required to have a co-mentor from GW who is actively involved in the supervision of the student. The co-mentor may or may not be part of a collaborative project with the NIH mentor.

Overview of Mentor Responsibilities

The outline below presents a brief overview of the responsibilities of the mentor. More detailed description can be found in the rest of the handbook.

First Year: Mentors serve as hosts for rotating graduate students provided that they are likely to have space and funding for the student to do their dissertation research in the mentor's lab if they are mutually agreeable.

Funding of the stipend and tuition for the first year is covered by OD at NIH. Mentors who host student for a rotation are only responsible for the cost of laboratory supplies.

Second Year: Mentors accept students into laboratory and assist in writing the pre-proposal which is due at the end of the second summer. By the end of the second year, mentors are expected to assist the students in writing their research proposal that outlines the background, specific aims, and approaches to be taken.

Once the student is accepted into a laboratory at NIH, the mentor is responsible for funding the stipend, tuition, and laboratory supplies for the student. Each institute handles the funding of graduate students differently and so the PI will need to discuss this with their scientific director.

Third Year and beyond: Mentors supervise the student's dissertation Research. The mentor is a member of the student's dissertation advisory committee and is expected to attend the semiannual committee meetings with the students.

Dissertation Defense: The mentor is expected to review and edit the student's dissertation. They are expected to attend the student's dissertation defense but they are not one of the examiners.

Credit Requirements

To earn a PhD, a student must accumulate 72 credits, of which 48 must be course work. A student generally completes all course work during the first two years, and after 48 hrs are completed and a comprehensive examination is passed is advanced to candidacy. If a student holds a Master's degree in a science, 24 hrs may be transferred toward a PhD.

Timeline

During the first Summer, the GW-NIH Partnership student does the first rotation in an NIH lab. This rotation runs from late June/early July until the beginning of September. A PowerPoint presentation is scheduled at GW at the end of the presentation, followed by a question and answer session run by the GW Rotation Advisor. The NIH mentor and any other faculty are invited to the session.

During the first year, the student takes courses at GW. Usually in the Fall, the student is taking Genes to Cells, Developmental Cell Biology and Systems Physiology, and Scientific Writing, and may take a GW lab rotation. In the Spring, the student takes course that introduce the PhD programs available, as well as lab rotation, and electives. GW lab rotations assist the student in identifying a GW co-mentor for the dissertation project. In the late spring, the student does a NIH lab rotation. If necessary, rotations at NIH can replace rotations at GW to assist in finding a lab at NIH in which to do the dissertation research.

Students in the first semester of the program are in class Monday through Wednesday for the entire morning. Most weeks, the afternoons of these days as well as Thursdays and Fridays there are no classes and students are expected to be in laboratories. In the second semester, course are offered Monday-Thursday, but schedules will vary according to the courses chosen. Fridays will still be completely open for a full day of research. Allowances must be made for homework and studying, but a goal of this program is early and intensive exposure to research. Keeping up with classes, however, comes first. A student in academic trouble will not survive to pursue a research program. If faculty or the program director identifies an academic problem the student will be notified and may be advised to reduce time spent at the bench. In the first year, students are expected to spend about 30 hours/week in the laboratory unless there are extenuating circumstances.

At the end of the first year, the student chooses the NIH lab and mentor and the GW co-mentor. During the second year, the student takes Program-specific courses. The Program Director will assist the student in choosing appropriate courses for his or her Program and research project. Students also begin their dissertation research in their chosen laboratories, and form a dissertation research committee. The student should write and defend the research proposal BEFORE the beginning of the third year.

The third and fourth years should be devoted to research and publication of results. While we do not have a requirement for publication in order to graduate, it is expected that all students will publish. Students should complete their degrees in five years or fewer.

To ensure the student registers for the correct number of credits (so that NIH or the GW Office of Fellowships is billed appropriately), the student will be required to meet with the Ph.D. Program Director at the beginning of each semester to have the registration transaction form signed.

Research Opportunities

Students in the NIH-GW Partnership Program perform their dissertation research in an NIH laboratory with close supervision of a GW faculty member intimately involved in the oversight of the project as a co-mentor. If the student wishes, a collaborative project with pairs of research laboratories, one on the NIH campus and one at a GW campus may be arranged. There are three GW sites from which a student can choose a co-mentor: the GW campus at Foggy Bottom, including the Medical Center and the Columbian College of Arts and Sciences, and the Children's National Medical Center. Pairs of investigators with current or proposed collaborative research projects are listed in an accompanying document. If a student chooses a collaborative arrangement, at least 50% of research time must be spent at the NIH. By working with two scientists instead of just one, students benefit from a broader scientific training, learn different, often contrasting approaches to a research question, and acquire invaluable professional skills for managing research collaborations. Collaboration has become the hallmark of modern science and it is critical for future scientists to learn early how to excel at working with other scientists and across disciplinary boundaries. Other details of the collaborative arrangement, including generation of the research proposal and monitoring of research progress are covered in a separate section of the document.

Dissertation Research Proposals

NIH Partnership students are required to generate both pre-proposals (end of the second Summer) and full proposals. Full proposals for GW-NIH Partnership Program students are due in May of the second year. Guidelines for writing of the Proposal are provided in the IBS Handbook.

Individual Development Plan

The NIH now requires that all students supported by NIH grant funds have an Individual Development Plan (IDP). We endorse this requirement and require it for all students, regardless of support mechanism. This IDP allows students to assess their current skills and plan development of skills and competencies toward their ultimate career goals. We recommend using the tool available for such a plan at <http://myidp.sciencecareers.org/>. This step by step guide allows frequent updates and matches the student's interests and skills with career paths. The IDP is required as part of the Scientific Writing course for all first year students, and a printout must be presented at biannual committee meetings for all upper level students.

What is expected of project mentors and students?

Students in the Graduate Partnership Program as well as other students in the Ph.D. Program in the Institute for Biomedical Sciences are expected to produce and defend a body of work that is identifiable as their own. It is the responsibility of the mentor to ensure that the student has a project that will produce such a body of work. To facilitate design and implementation of such a project, the student is expected to submit a proposal during the Spring of the second year of graduate school. For students in the Partnership program, it is required that a pre-proposal be generated by the end of the second Summer. The pre-proposal should provide a general idea of the area of research and the responsibilities of the three parties involved, the two mentors and the student, along with a proposed timeline. A copy should be provided to the NIH Program Directors, The GW Program Director, and the IBS Director. The Full Proposal should list Specific Aims supported by Background and Significance, as well as an experimental Design Section describing how the Specific Aims will be accomplished. The Proposal should follow the format set forth by the guidelines for the NIH NRSA pre-doctoral fellowship application (see Writing and Defense of the Research Proposal in the IBS Handbook).

Role of the NIH Program Co-Directors (Currently Dr. Stan Lipkowitz)

The NIH Program Directors assist in guiding the student in choosing laboratories appropriate to the student's research interest and serves as a resource in selection of research committee members at the NIH.

Role of the GW Program Director (Currently Dr. Linda Werling)

The IBS Program Director serves as the student's Academic Advisor in the first year. In the subsequent years, she is available at any time for consultation, advice, assistance in forming committees, facilitating and coordinating defenses, consulting with mentors, or general information that is helpful to students or mentors.

Role of the GW Rotation Advisor (Currently Dr. Anne Chiaramello)

The GW Rotation Advisor assists the student in the selection of a laboratory consistent with the student's research interests at GW and NIH.

Dissertation Advisory Committee

The Dissertation Advisory Committee is chosen by the student with advice and input from the research mentor and approval of the Program Director. The Dissertation Advisory Committee consists of the two Research Mentors plus two other members chosen for their ability and willingness to provide input and guidance to the student in the development and completion of the dissertation research project. Of the two others, at least one must be a GW faculty member. A Dissertation Advisory Committee member other than the mentor should be appointed as Chair of the Committee. This person should be responsible for taking notes during the Committee meetings, writing a summary of the decisions made at the meetings, and providing members and the student with a written summary. This will ensure that all are in agreement about the

responsibilities of the student in achieving timely progress toward completion of the project. The Committee should meet at six month intervals after receiving written progress reports from the student. At times, six months may be deemed too brief an interval, but in no case should meetings of the committee be less frequent than yearly.

The Final Examination Committee

The Final Examination Committee consists of the Dissertation Advisory Committee (the Research mentor and Co-mentor plus the two others) plus two additional members, one of whom is outside the student's program or outside the university. The additional two members must be "fresh" to the process. The Final Examination Committee must have at least four examining members. Neither the NIH mentor nor the GW mentor is an examiner. Two of the examining members must be GW faculty located on one of the GW campuses.

Ready to Defend?

When the student is planning to defend, he or she should contact the IBS Director for guidance. We have a complete set of documents, checklists and templates to assist the student in preparation of the dissertation. The dissertation must first be signed off on by the mentor and co-mentor, and then distributed to two readers. When the readers have signed off that the dissertation is ready to be defended, the student may schedule a defense.