

GRADUATE TRAINING PROGRAMS IN CLINICAL INVESTIGATION, PHD

Graduate Training Programs in Clinical Investigation, PhD

The PhD degree (<https://publichealth.jhu.edu/academics/phd-in-clinical-investigation/>) is our flagship program designed for those who currently hold a postdoctoral fellowship or junior faculty appointment within the Johns Hopkins Medical Institution (JHMI). It is intended to train subspecialty physicians, leading to both clinical board eligibility in a medical discipline and the PhD.

Students take one year of full-time didactic instruction after an initial training year in a medical or surgical subspecialty. This provides the scientific grounding for subsequent original research. GTPCI faculty and a mentor from the fellow's SOM home division or department, jointly mentor thesis research. Fellows already enrolled in a clinical fellowship program in SOM usually apply during their first year of clinical training.

Students must satisfy all University requirements for the PhD, including preliminary oral examination, thesis preparation, and final oral defense.

Course location and modality is found on the BSPH website (<https://www.jhsph.edu/courses/>).

Requirements for completion of the PhD Degree

- Satisfactory completion of 90 credit hours of coursework (including thesis research credits)
- 5 additional advanced elective courses to be taken AFTER the 1st year in the 2nd or 3rd years; to include PH.140.642 Design of Clinical Experiments – these courses must be at least 3 credits each and taken for a grade. They should be advanced methodically and analytically and are to build on the knowledge/curriculum learned in the 1st year. Elective courses taken prior to enrolling in GTPCI or in the 1st year do not qualify as one of the 5 advanced electives
- Must earn a B or better in all required courses and maintain a minimum 3.0 GPA
- Continuous registration for the PH.390.855 Research Forum and registration for thesis research each term during the following years
- Comprehensive examination at the end of the didactic year
- Satisfaction of all university requirements for the PhD, including preliminary oral examination, thesis preparation, and final oral defense

PhD Residency Requirement

The BSPH requires all PhD students to register full-time for a minimum of 16 credits for 4 consecutive terms. This full-time residency requirement must be fulfilled PRIOR to taking the preliminary oral examination.

Annual Review Requirement – Individual Development Plan (IDP)

The University Doctoral Board requires that each PhD student receive an annual review during each year of the program. This review is expected to have 3 components:

1. Student self-assessment and Individual Development Plan (IDP form) (https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/cdenard1_jh_edu/Eev_9MHvYVZLjkc_3AmFJxgBXiofMHiYPYuxyl85jaOvgw/?e=O3BclR)
2. Monitoring of progress in the program
3. Written feedback to the student

Comprehensive Examination

Taken after successfully completing the core coursework. It is a 4-hour, in-person, open-notes exam distributed at the end of the 4th term.

Preliminary Oral Examination

All PhD students must complete the PH.550.600 Living Science Ethics - Responsible Conduct of Research course prior to taking the preliminary oral exam.

The preliminary oral examination should be scheduled as soon as possible after passing the comprehensive written examination in May of the 1st year. It is highly recommended this exam be taken by the Fall of the 2nd year and no later than December of the 2nd year. The preliminary exam form (https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/cdenard1_jh_edu/ESLvJnMsyTpGg9wt8mrxpOkB3JMFN2CmPHOA_uMV6SU5zA/?e=QjYqRy) is DUE ONE MONTH PRIOR TO EXAM DATE. It is a 2-hour exam that serves to determine whether the student has both the ability and the knowledge to undertake significant research in their general area of interest. Specifically, the exam committee will be concerned with the student's:

1. Capacity for logical thinking
2. Breadth of knowledge in relevant areas
3. Ability to develop and conduct research leading to a completed thesis

Students will provide a 10-15 min. presentation of their research topic, and the discussion of this research topic may serve as a vehicle for determining the student's general knowledge, methodological approaches, and research capacity. This examination is not intended to be a defense of a specific research proposal.

When the student's thesis committee agrees that a written draft of the dissertation work is acceptable, the student may proceed to schedule the "oral defense" of their thesis. If the thesis committee agrees by unanimous vote that the student "passes" their oral thesis defense, they will then recommend to the Graduate Board of the University the awarding of the PhD degree.

Thesis Committee Meetings

In addition to the BSPH annual review requirement, GTPCI requires documentation of each PhD student's interaction with their thesis committee, as it pertains to their thesis progress. The policy is as follows:

1. Students must convene with their thesis committee within 6 months after completion of the preliminary oral exam and then every 12 months thereafter. A minimum of 3 members must be present for the meeting.
2. It is the student's responsibility to organize the required meeting of the thesis committee.
3. It is the student's responsibility to present the thesis committee report form (<https://livejohnshopkins->

my.sharepoint.com/:b/g/personal/cdenard1_jh_edu/EdyRF65EZjJEvA3ZWFYFMOXQBRMs8Z4sgpYBecm7HNvV6XQ/?e=VG44nX) at the meeting, obtain committee member signatures, and return the form to the GTPCI Program office.

4. The Program will notify each student and academic adviser via e-mail one month prior to the due date.

Thesis Research – Documentation of Annual Progress

1. A documentation form (https://livejohnshopkins-my.sharepoint.com/:b/g/personal/cdenard1_jh_edu/EY99ZvdpDsRDkhHT0T-uAOWB6kKqkiSJfO4xSGI8koqmfq/?e=1bBijH) will be distributed for completion to students during the May monthly GTPCI Research Forum.
2. Students who are absent from the Research Forum will be notified via e-mail to complete the form and return it to the GTPCI Program Office.

Final Oral Examination (Thesis Defense)

The structure of the defense includes two parts: an initial public presentation of the thesis work, followed by a closed critical examination by the student's thesis committee.

The public seminar should include a 30-minute presentation by the student, followed by a question period of 15 minutes. Public announcement and invitations should be initiated by the student.

Afterward, the thesis committee and student will meet privately to continue a critical evaluation of the thesis as needed. Thereafter, the thesis committee will convene in private for voting and discussion, after which they will announce their decision to the student.

Students should schedule a two-hour time block with their thesis committee, and reserve suitable space for both parts of the defense.

The Appointment of Thesis Reader and Final Exam form (https://livejohnshopkins-my.sharepoint.com/:b/g/personal/cdenard1_jh_edu/EUeHYH7DV4pIm10LTIORnLgBo_J4C8iVR_SPtgp_Kwxpxw/?e=3GiOyg) is DUE ONE MONTH PRIOR TO EXAM DATE.

Required Coursework

Completion of Introduction to Online Learning (<https://courseplus.jhsph.edu/core/index.cfm/go/course.home/cid/90/>) is required prior to beginning 1st term.

According to the requirements of the Council on Education for Public Health (CEPH) (<https://e-catalogue.jhu.edu/public-health/ceph-requirements/>), all BSPH degree students must be grounded in foundational public health knowledge. The following courses meet these requirements: 552.601, 552.603, 552.607, 552.608, 552.609, 552.610, 552.611, 552.612.

PhD Continuing Course Requirements

After all required coursework is completed, PhD students must continuously be registered for a minimum of 3 credits per term until graduation.

PhD students are required to register for and attend the monthly PH.390.855 Research Forum every year after the 1st didactic year, until all degree requirements are met or they leave the institution. The purpose is to provide students with an opportunity to present interim research results and obtain constructive criticisms from their peers and faculty. Students are expected to attend at least 6 of the 8 sessions; if this requirement is not met, completion of a remedial assignment will be

required. The Research Forum requirement ceases after passing the final oral thesis defense.

The format of the Research Forum is a brief presentation (10-15 minutes) by the investigator of problems presented by work in progress. This will be followed by questions, answers, and comments (10-15 minutes). The format is NOT intended to be a platform for formal presentation of research results. Instead, its intent is to facilitate critical discussion, and even disagreement that will be helpful to the presenter and other students in attendance as well.

Code	Title	Credits
PH.390.750	Introduction to Clinical Research (Optional in Summer prior to matriculation)	2
PH.552.601	Foundational Principles of Public Health	0.5
PH.552.603	The Role of Qualitative Methods and Science in Describing and Assessing a Population's Health	0.5
PH.552.607	Essentials of Environmental Health	0.5
PH.552.608	Biologic, Genetic and Infectious Bases of Human Disease	0.5
PH.552.609	Psychological and Behavioral Factors That Affect A Population's Health	0.5
PH.552.610	The Social Determinants of Health	0.5
PH.552.611	Globalization and Population Health	0.5
PH.552.612	Essentials of One Health	0.5
PH.550.600	Living Science Ethics - Responsible Conduct of Research	1
PH.550.860	Academic & Research Ethics at BSPH	
PH.390.673	Ethical and Regulatory Issues in Clinical Research (or 306.665)	3
PH.390.631	Principles of Drug Development	2
PH.390.801	Professional Goals and Objectives	1
PH.390.751	Seminars in Clinical Investigation	2
PH.390.710	Biomedical Writing I	2
PH.390.711	Biomedical Writing II	2
PH.390.721	Principles of Grant Writing I	2
PH.390.722	Principles of Grant Writing II	4
PH.390.703	Presentation Skills	1
PH.340.606	Methods for Conducting Systematic Reviews and Meta-Analyses	4
PH.140.621	Statistical Methods in Public Health I (or 140.651)	4
PH.140.622	Statistical Methods in Public Health II (or 140.652)	4
PH.140.623	Statistical Methods in Public Health III (or 140.653)	4
PH.140.624	Statistical Methods in Public Health IV (or 140.654)	4
PH.340.751	Epidemiologic Methods 1	5
PH.340.752	Epidemiologic Methods 2	5
PH.340.753	Epidemiologic Methods 3	5

In place of 340.754, choose electives: 5 or more total credits, taken for grade

16 credits per/term required for 1st-4th terms: choose electives in terms with less than 16

In 2nd year - must take 5 advanced electives; 3 credits each; taken for grade (including 140.642)

PH.140.642	Design of Clinical Experiments (1 of 5 advanced electives in 2nd year)	3
PH.390.855	Research Forum (taken each year beginning 2nd year until graduation)	1

In addition to the Schoolwide policies (<https://e-catalogue.jhu.edu/public-health/policies/>), current students can view all GTPCI PhD program policies in the GTPCI Student Handbook (<https://publichealth.jhu.edu/academics/academic-program-finder/graduate-training-programs-in-clinical-investigation/degree-programs/>).

Upon successful completion of the Doctor of Philosophy degree, students will have mastered the following competencies:

- Frame a scientific hypothesis and design and critically assess an epidemiologic study that addresses the hypothesis
- Plan, develop, and conduct analyses of scientific data
- Develop a research proposal that includes specific aims and hypotheses, significance of the research questions, their innovation, a scientific approach to addressing these questions, and their public health implications
- Reflect on the fundamental ethical principles that govern biomedical research and judge whether research proposals adhere to these principles
- Present and defend scientific data that you generate and critique the validity of scientific data generated by others
- Analyze the performance of diagnostic tests and potential sources of measurement error
- Formulate an approach to drug development and consider the challenges inherent within that approach

According to the requirements of the Council on Education for Public Health (CEPH), all BSPH degree students must be grounded in foundational public health knowledge. Please view the list of specific CEPH requirements by degree type (<https://e-catalogue.jhu.edu/public-health/ceph-requirements/>).