

CLINICAL INVESTIGATION, PHD

Clinical Investigation, PhD

The PhD degree (<https://publichealth.jhu.edu/academics/phd-in-clinical-investigation/>) is our flagship program designed for those who hold a postdoctoral fellowship or junior faculty appointment within the Johns Hopkins Medical Institution (JHMI). It is intended to train sub-specialty 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 SOM clinical fellowship program 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://publichealth.jhu.edu/courses/>).

Requirements for completion of the PhD Degree

- 90 credits of coursework:
 - 1st Year: Full-time coursework/min. of 64 credits = 52 credits of required foundational courses + 12 credits of pathway-specific elective courses
 - 2nd Year = 5 advanced elective courses* = min. of 15 credits
 - 3rd Year and forward = continuous registration of thesis research credits
 - 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
 - Comprehensive examination at the end of the 1st year
 - Satisfaction of all university requirements for the PhD, including preliminary oral examination, thesis preparation, and final oral defense
- *Must be taken AFTER the 1st year, be at least 3 credits each, and taken for grade. This includes PH.140.642 Design of Clinical Experiments - the other 4 courses depend on the chosen pathways curriculum. Elective courses taken before enrolling in GTPCI or during the 1st year do not qualify as one of the 5 advanced electives.

PhD Residency Requirement

The BSPH requires all PhD students to register full-time for a minimum of 16 credits/term for 4 consecutive terms. This requirement is met in the 1st year, and is equal to a minimum of 64 total credits. This requirement must be fulfilled BEFORE 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 (https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/cdenard1_jh_edu/

Eev_9MHYvZVLjkc_3AmFJxgBXiofMHiYPYuxyl85jaOvgw/?e=03BcIR)IDP form (https://livejohnshopkins-my.sharepoint.com/:b:/r/personal/cdenard1_jh_edu/Documents/Handbook%202023-24/GTPCI-IDP%20for%20PhD%20Students.pdf?csf=1&web=1&e=Lnuq9o) (https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/cdenard1_jh_edu/Eev_9MHYvZVLjkc_3AmFJxgBXiofMHiYPYuxyl85jaOvgw/?e=03BcIR)

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 4th term. One retake of the exam is allowable; if the exam is not passed on the second attempt, the student will be removed from the program.

Preliminary Oral Examination

This 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. It is a 2-hour exam intended to ensure that the student has achieved a reasonable knowledge base in these fundamental areas:

1. Fundamental principles of epidemiology
2. Fundamental principles of biostatistics
3. Other important aspects of clinical investigation (e.g. study design; bioethics; research in special populations; IRB)

The exam is NOT intended to be a defense of a specific research proposal; rather the examiners will be concerned with the student's:

1. Capacity for logical thinking
2. Breadth of knowledge in three fundamental areas (listed above)
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 discussion of this research topic may serve as a vehicle for determining the student's general knowledge, methodological approaches, and research capacity. Since the exam is not a defense of a specific research proposal, students are not expected to distribute a written research proposal to their committee before the examination. While you may ask questions specific to the student's proposal, you may also choose not to and focus on more general principles of clinical investigation.

Thesis Committee Meetings

In addition to the BSPH annual review requirement, GTPCI requires documentation of each PhD student's interaction with their thesis committee about 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. Students must organize this required committee meeting.
3. Students must present the thesis committee report form (https://livejohnshopkins-my.sharepoint.com/:b:/g/personal/cdenard1_jh_edu/EdyRF65EZjJEvA3ZWYFMoXQBRMs8Z4sgpYBcm7HNvV6XQ/?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 before 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-uAOWB6kKqkiSJfO4xSGI8koqmfmg/?e=1bBijH) will be distributed for completion to students during the May monthly GTPCI Research Forum.
2. Students 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 defense structure 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 45-minute presentation by the student, followed by a question period of 15 minutes (1 hour total), and a public announcement and invitation should be initiated by the student. Afterward, the thesis committee and student meet privately to continue a critical evaluation of the thesis; this portion should be scheduled for a minimum of 90 minutes, but 2 hours is highly recommended. Afterward, the thesis committee will convene privately for voting and discussion, after which they will announce their decision to the student.

Therefore, students should schedule a 2.5-3 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/EUeHYH7DV4pIm10LTIOInLgBo_J4C8iVR_SPTgp_Kwxpxw/?e=Sljt1r) is DUE ONE MONTH BEFORE EXAM DATE.

Foundational GTPCI Courses (required coursework)

See table below. For curriculum details of pathway-specific courses, please email BSPH.gtpci@jhu.edu.

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

Per the Council on Education for Public Health (CEPH) (<https://e-catalogue.jhu.edu/public-health/ceph-requirements/>) 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 the required coursework is completed, PhD students must continuously be registered for a minimum of 3 credits per term until graduation.

PhD students must register for and attend the monthly 390.855 Research Forum (<https://publichealth.jhu.edu/course/41548/>) every year after the 1st didactic year until all degree requirements are met. Students present their interim research results and receive constructive criticism from their peers and faculty.

Students are expected to attend at least 5 of the 7 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 a formal presentation of research results. Instead, it facilitates critical discussion, and even disagreement that will be helpful to the presenter and other students in attendance.

Code	Title	Credits
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.550.860	Academic & Research Ethics at BSPH	
PH.390.673	Emerging Ethical and Regulatory Issues in Clinical Research (Emerging Ethical and Regulatory Issues in Clinical Research)	3
PH.390.751	Seminars in Clinical Investigation	2
PH.390.752	Seminars in Clinical Investigation II	2
PH.390.710	Biomedical Writing I	2
PH.390.711	Biomedical Writing II	2
PH.390.721	Grant Writing and Scientific Presentation Skills I	2
PH.390.722	Grant Writing and Scientific Presentation Skills II	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
16 credits/term required for 1st-4th terms: choose electives in terms with less than 16		
Biostatistics 140.650 series is acceptable alternate to Biostatistics 140.620 series		
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.

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/>).