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WELCOME

Welcome to the [Department of Biostatistics](#) at the [Johns Hopkins Bloomberg School of Public Health](#). Our Department was the first academic department of statistics in the United States, founded in 1918. Its major goal, achieved through education and research, is to enhance and promote effective statistical reasoning and its application in health research and ultimately, to advance the public's health.

Today the Department is chaired by Dr. [Karen Bandeen-Roche](#) and has approximately 47 full-time [faculty](#) and approximately 60 full-time [students](#), most of whom are doctoral candidates. Our faculty and students conduct research across the spectrum of statistical science from foundations of inference to the discovery of new methodology to health applications.

The Department offers the [PhD](#) and [ScM](#) degrees, as well as the [MHS](#) (Master's of Health Science) in biostatistics for students earning a PhD in another department of the school and to those health professionals who already have an advanced degree (i.e. MD or PhD). We also offer an NIH-funded training opportunity in the [epidemiology and biostatistics of aging](#).

All faculty and students are required to adhere to the School of Public Health's academic ethics code.

MISSION OF THE DEPARTMENT OF BIOSTATISTICS

The Department has as its mission:

- conduct of original research on important biostatistical problems across the spectrum: foundations, methodology, and applications;
- responsibility for Johns Hopkins University's PhD and master's programs in biostatistics;
- leadership of biostatistical education for public health/biomedical scientists and professionals at Johns Hopkins;
- participation in other current and future educational programs involving substantial statistical reasoning, such as quantitative genetics, bioinformatics, and clinical investigations;
- facilitation and leadership of biomedical and public health research that depends on statistical collaboration or consultation.

HOPKINS PERSPECTIVE ON BIOSTATISTICS: A BRIEF HISTORY AND TODAY

Biostatistics comprises the reasoning and methods for using data as evidence to address public health and biomedical questions. It is an approach and a set of tools for designing studies and for quantifying the resulting evidence, for quantifying what we believe, and for making decisions.

At the Johns Hopkins Department of Biostatistics, research is characterized by a commitment to statistical science, its foundations and methods, as well as the application of statistical science to the solution of public health and biomedical problems. As indicated in the two-way arrows in the figure below, research on foundations, methods, and applications is mutually supportive. To be

excellent, biostatistical research must be built on a foundation of first-rate public health and biomedical research, like that which occurs at Johns Hopkins.

Research on foundations has as its goal the development of better strategies, or ways of reasoning, for empirical research. For example, past chair William Cochran demonstrated how observational studies can be used to draw inferences about the causal effect of a treatment on a health outcome. Jerry Cornfield showed how case control studies can be used to draw valid inferences about parameters in prospective models. Richard Royall led a transition in statistical reasoning from decision methods (p-values, tests of hypotheses) toward likelihood methods, which quantify scientific evidence. Charles Rohde, former faculty member Kung-Yee Liang, Tom Louis, Constantine Frangakis, and others continue this tradition.

Research on statistical methodology has as its goal the creation of new tools for drawing inferences from data. To illustrate, former faculty member Ron Brookmeyer and adjunct faculty member Mitch Gail developed the methodology used to monitor and project the size of the US AIDS epidemic; Kung-Yee Liang, Mei-Cheng Wang, and Scott Zeger developed methods for regression analysis with correlated responses. Daniel Scharfstein and Constantine Frangakis have developed techniques for assessing the possible impact of missing data in clinical trials and observational studies. Ingo Ruczinski has developed novel regression methods to predict how proteins will fold.

To accomplish societal goals, biostatistics and biostatisticians must research important substantive questions as well. For example, former faculty member Francesca Dominici, with Roger Peng, Aidan McDermott, and Frank Curriero, and colleagues have used multiple national databases to determine the effects of air pollution on mortality across the 90 largest American cities. Marie Diener-West, Jim Tonascia, and others have led or collaborated in clinical trials of new therapeutic treatments. Karen Bandeen-Roche collaborates with gerontologists to determine the causes and course, and ultimately to postpone the onset, of disability in older adults. The Biostatistics Center faculty, including Gayane Yenokyan, Andre Hackman, and Jiangxia Wang, serve more than 150 biomedical clients each year.

Throughout its history and today, Hopkins Biostatistics has embraced a broad definition of our discipline, including foundations, methodology, and applications. The faculty's commitment to this inclusive perspective and the support of the School's administration and faculty are two of the intangible yet critical components of the Department's current and future success.

DEGREE PROGRAMS

The Department of Biostatistics offers the following three graduate programs to applicants with a bachelor's degree (or higher) interested in professional or academic careers at the interface of the statistical and health sciences:

- MHS (Master of Health Sciences): For outstanding individuals with prior professional experience or a professional degree seeking a one-year intensive course of study in biostatistical theory and methods.
- ScM (Master of Science): For individuals with demonstrated excellence at the undergraduate level in the quantitative or biological sciences who seek a career as a professional statistician.
- PhD (Doctor of Philosophy): For individuals with demonstrated excellence at the undergraduate level in the quantitative or biological sciences who wish to prepare themselves to become leading biostatistical researchers in academia, industry, or government.

We also have a funded training program in Epidemiology and Biostatistics of Aging for PhD students who are US citizens or permanent residents.

ACADEMIC ETHICS

Students and postdoctoral fellows in the Bloomberg School of Public Health are expected to abide by the highest levels of academic and research integrity (click here to view the Johns Hopkins Academic Ethics Code). All students and postdoctoral fellows must complete an online module to familiarize themselves with this code.

As stated in the Academic Ethics Code, "violations of academic integrity include, but are not limited to: cheating; plagiarism; knowingly furnishing false information to any agent of the University for inclusion in the academic record; violation of the rights and welfare of animal or human subjects in research; and misconduct as a member of either School or University committees or recognized groups or organizations."

For a Biostatistics student or postdoctoral fellow, abiding by the Academic Ethics code includes:

- Completing work on one's own when an individual assignment or examination is given in a course.
- Providing proper attribution to others' work by providing citations with quotations and giving proper references for all data analysis projects, research proposals and dissertations and theses.

PhD PROGRAM

OVERVIEW

The Johns Hopkins Department of Biostatistics PhD program prepares persons who have demonstrated excellence in mathematics and the natural or social sciences to become research biostatisticians in academia, industry, or government. Our PhD graduates:

- Conduct and publish original research on the theory and methodology of biostatistics;
- Apply innovative theory and methods to the solution of public health problems;
- Serve as expert biostatisticians on collaborative teams of investigators addressing key questions in public health and medicine;
- Teach biostatistics effectively to health professionals and scientists as well as to graduate students in biostatistics.

Our PhD program provides training in the theory of probability and statistics, biostatistical methodology and data science, as well as the application of biostatistics in science, public health and medicine. The program is unique in its dual emphasis on the foundations of statistical reasoning and their implementation in data analyses. It requires its graduates to complete rigorous training in real analysis-based probability and statistics, equivalent to what is provided in most departments of mathematical statistics, as well as in data science practice.

The core curriculum consists of the following components:

- A one-year sequence on biostatistical methodology (140.751-754)
- A one-year sequence on probability (140.721-724)
- A one-year sequence on foundations and theory of statistical science (140.731-734)
- A two-term sequence on advanced data science (140.711-712)
- Epidemiologic Inference in Public Health I (340.721)

Currently, Dr. Hongkai Ji directs the Biostatistics Graduate Program. He supervises all aspects of the PhD program, including admissions, curriculum design, and student evaluation.

ENTRANCE REQUIREMENTS

- Bachelor's degree
- Completed School of Public Health application
- GRE score results
- TOEFL results (if your most recent academic degree is from a university where English is NOT the primary language of instruction)
- Three letters of recommendation
- Statement of purpose
- Prior coursework in calculus and linear algebra

Incoming students without a strong background in basic biology are strongly encouraged to register for the course Introduction to the Biomedical Sciences (260.600), held in advance of the

first term each year during the latter part of August (offered in both online and onsite formats). We also encourage students to take a real analysis course before joining the program. For students without real analysis background, we strongly recommend that they take it in the first year of the PhD study.

For more information about admission requirements for the School of Public Health, please contact the School's Admissions Office.

FORMAL DEGREE REQUIREMENTS

The Department is committed to providing every opportunity for its students to successfully complete the academic program of their choice. To meet Bloomberg School of Public Health requirements, support students in progressing toward the degree and to further their educational experience, the Department offers a comprehensive written examination at the end of the first year. The University requires students to successfully complete a preliminary oral examination, typically taken at the beginning of the third year where a thesis proposal is presented and discussed, and an oral thesis defense, where the completed thesis is defended in a public forum. In addition, the Bloomberg School of Public Health requires the following:

- A minimum of four consecutive terms as a full-time student.
    - Students must enroll in a minimum of 16 credits per term for full-time status (see section PART-TIME STUDY for department policy on part-time status). The 16 credits can be reached by enrolling for special studies credit (140.840). These special studies must have a clearly defined objective.
- Satisfactory completion of at least 18 credits units of formal non-Biostatistics coursework.* At least 9 of these credits must be satisfactorily completed in the Bloomberg School of Public Health.
    - It is strongly recommended that by the end of the first year, students should have earned 12 credits in non-Biostatistics courses (of which 6 credits must come from SPH courses).
- Satisfactory completion of the following courses:
    - A course on the responsible conduct of research (i.e. *550.600 Responsible Conduct of Research*, or *306.665 Research Ethics and Integrity*), usually taken during the second year (this course must be taken before the student's preliminary schoolwide oral examination)
    - *550.860 (Academic & Research Ethics at JHSPH)*, usually taken during the first year
- A time limit of seven years from the date of initial matriculation for completion of all degree requirements

* Special studies (800-level) courses in another department do NOT count toward this requirement. The courses *Responsible Conduct of Research* and *Academic and Research Ethics at JHSPH* do NOT count toward this requirement. Credits earned from the *Introduction to Biomedical Sciences* course DO count.

The Department of Biostatistics also requires the following:

- Completion of the core curriculum as described in Program Overview.
- To meet School of Public Health requirements, students are required to take the following eight "Cells to Society" courses by the end of year two: 552.601.81, 552.603.81, 552.607.81, 552.608.81, 552.609.81, 552.610.81, 552.611.81, 552.612.81.
- For PhD students matriculating in 2018-19 and later: By no later than the end of the fall term in the fourth year in-program, and in advance of scheduling the final oral exam (i.e. thesis defense), students must have earned a minimum of 16 credits from advanced elective courses in Biostatistics or other related disciplines (e.g. computer science).
    - The course sequences *Advanced Methods in Biostatistics I-IV (140.751-754), Probability Theory I-IV (140.721-724), Statistical Theory I-IV (140.731-734),* and *Advanced Data Science I-II (140.711-712)* do NOT count toward this requirement.
    - Please consult our List of Elective Courses for PhD Students for recognized elective courses.
    - Students may take courses not included in this list, but they must first consult and obtain approval from both their advisor and the graduate program committee. Elective courses must be taken for either a letter grade or pass/fail.
    - Students joining the PhD program on or before July 31, 2018, are not required but are encouraged to take 16 credits in advanced elective courses.
- All students are expected to obtain training in the statistics/science interface (see section TRAINING IN THE STATISTICS-SCIENCE INTERFACE).
- Students are required to attend departmental seminars and strongly encouraged to participate in a working group.

ACADEMIC EXPECTATIONS

Doctoral students are expected to abide by the highest levels of academic and research integrity (see section ACADEMIC ETHICS) and follow the principles described in the Statement of the Rights and Responsibilities of Ph.D. Students at Johns Hopkins University.

Academic Standing

Doctoral students are expected to stay in good academic standing throughout their PhD studies. Below are policies regarding academic performance of doctoral students that are specific to the Department of Biostatistics. Students also must satisfy the academic standing requirements of the Johns Hopkins University and Bloomberg School of Public Health.

Students are expected to maintain grades of B or higher in core classes. Any core class with a grade lower than a B will need to be retaken.

Students are required to pass the departmental comprehensive exam and the school-wide preliminary oral exam and defend their thesis. To maintain good academic standing, students must pass the comprehensive exam by the end of their second academic year, before the start of the first term of their third year. They must also complete their school-wide preliminary oral exam by the end of their third academic year, before the start of the first term of their fourth year (typically late August or early September depending on that year's academic calendar).

Full funding for tuition and stipend is provided to doctoral students for five years. Students are expected to finish their doctoral programs within this time. Students who do not finish within five years may continue in the program for up to two additional years. In these cases, students are responsible for departmental tuition (currently $16,000 per year), their own health insurance, and living expenses. Personal office space cannot be guaranteed for students beyond the five-year point. Common areas (Biostatistics Library, Genome Café) remain available for use by these students.

Program Changes from PhD to ScM or MHS

In the event that a doctoral student switches to the ScM or MHS programs the following should be noted:

- Funded doctoral students forfeit their funding in the event of a program switch.
- Students have the option of switching to part time status after switching programs. However, visa residency requirements of maintaining full-time student status typically prevent foreign students from being able to switch to part time.
- MHS and ScM students receive a 75% tuition reduction in their second year and beyond provided that they have taken 12 credits of courses outside of the Department, at least 6 credit hours of which from the School of Public Health, and have passed their Departmental exams. Doctoral students considering a program switch should appropriately plan their first year coursework to ensure the receiving the tuition reduction. The 75% tuition remission is contingent on passing the first year exams at the master's level. PhD students who take the doctoral exam and then elect, or are asked to switch to, a master's program will be informed whether their performance on the doctoral exam constitutes a pass at the master's level. Students who are deemed to have not passed at the master's level will be asked to take the master's Departmental exam in the subsequent year to fulfill the requirements of the master's program and will not be eligible for the tuition reduction until the exam requirements have been met. Students will be allowed this one administration of the master's exam in these circumstances.

Part-time Study

Because the Department of Biostatistics believes that proper PhD study is best done through total immersion in and commitment to the field and coursework, our PhD program is designed and intended to be undertaken on a full-time basis. Periodically, there may be exceptional circumstances that will necessitate a PhD student's part-time status. Part-time study can only be done with the express consent of the Department and does NOT exempt the student from fulfilling the School's requirements of one year of full-time residency and of seven years' maximum for completion of the PhD degree (see section FORMAL DEGREE REQUIREMENTS). The Department provides no financial support of any kind for tuition, health insurance, or living expenses for part-time PhD students.

Leave of absence

Leave of absence (LOA) is a category limited to students in programs requiring continuous enrollment who, while in good academic standing, are forced to take an approved break from their programs of study due to reasons beyond their control, such as illness, military service, financial exigency, or pressing personal reasons justifying an interruption of their graduate studies. A leave of absence is an officially recognized inactive student status that is entered on a student's academic record. Students on LOA are not eligible for mailboxes, lockers, or cubicles or for access to the facilities including JHU libraries, athletic centers, and the School's Data Center. LOA is limited to one academic year, except for military service.

The charge for LOA is a $50 active file fee for each academic term for which LOA is being requested. The charge will be billed to the student's account and all term payment deadlines and late fees apply. Students will not be permitted to re-enroll until all outstanding charges are paid.

Biostatistics students interested in obtaining an official Leave of Absence must:

1. Consult with their advisor and program director to determine whether a Leave of Absence is warranted;
2. Obtain a Leave of Absence application form from Mary Joy Argo, academic coordinator;
3. Complete the relevant sections of the LOA application, and then return the form to Mary Joy Argo, who will complete the form and submit it to the Office of Records and Registration, on behalf of the student;
4. During the term prior to resuming graduate study, notify the Office of Records and Registration and Mary Joy Argo;
5. Upon return from Leave of Absence status, register for a minimum of two successive terms before completing degree program.

RECOMMENDED CURRICULUM

Year One

    August
        Introduction to Biomedical Sciences (260.600, 4 credits)**

    1st term
        Advanced Methods in Biostatistics I (140.751, 3 credits) [+]
        Probability Theory I (EN.553.720 (01), 4 credits) [+]
        Statistical Theory I (140.731, 4 credits) [+]
        Statistical Computing (140.776, 3 credits)
        Current Topics in Biostatistics Research (140.860, 1 credit)[$]
        Academic and Research Ethics at JHSPH (550.860, 0 credits)***
        Foundational Principles of Public Health (552.601.81, 0.5 credits)****

The Role of Qualitative Methods and Science in Describing and Assessing a Population's Health (552.603.81, 0.5 credits)****

Special Studies (140.840, credits as needed in order to achieve 16 credits total)

2nd term

Advanced Methods in Biostatistics II (140.752, 4 credits) +
Probability Theory I (EN.553.720 (01), 4 credits) +
Statistical Theory II (140.732, 4 credits) +
Current Topics in Biostatistics Research (140.860, 1 credit)$
Essentials of Environmental Health (552.607.81, 0.5 credits)****
Biologic, Genetic and Infectious Bases of Human Disease (552.608.81, 0.5 credits)****
Psychological and Behavioral Factors That Affect a Population's Health (552.609.81, 0.5 credits) ****
Electives and/or Special Studies (140.840, credits as needed in order to achieve 16 credits total)

3rd term

Advanced Methods in Biostatistics III (140.753, 4 credits) +
Probability Theory III (140.723, 3 credits) +
Statistical Theory III (140.733, 4 credits) +
Current Topics in Biostatistics Research (140.860, 1 credit)$
The Social Determinants of Health (552.610.81, 0.5 credits)****
Globalization and Health: a Framework for Analysis (552.611.81, 0.5 credits)****
Electives
Special Studies (140.840, credits as needed in order to achieve 16 credits total)

4th term

Advanced Methods in Biostatistics IV (140.754, 4 credits) +
Probability Theory IV (140.724, 3 credits) +
Statistical Theory IV (140.734, 4 credits) +
Current Topics in Biostatistics Research (140.860, 1 credit)$
Essentials of One Health (552.612.81, 0.5 credits)****
Electives
Special Studies (140.840, credits as needed in order to achieve 16 credits total)

+ The sequences *Advanced Methods in Biostatistics I – IV* (140.751-754), *Probability Theory I-IV* (EN.553.720, 140.723-724), and *Statistical Theory I-IV* (140.731-734) are required course sequences for the 1st year. Per school policy, for students to remain in satisfactory academic standing, they must meet the minimum grade threshold of a B in required courses.

$ This is a 1-credit required seminar for our first year PhD and ScM students.

*Some students, based on a placement assessment and in consultation with their advisor and graduate program committee, may opt to take the first year of the ScM curriculum and defer the PhD curriculum until their second year. Students who opt for this route typically also are required to successfully complete the ScM qualifying exam.

**The credits of this course count toward the first term.

*** Although this course is offered in subsequent terms, incoming students are required to take this during their first term and will not be able to register for 2nd term until they have done so.

**** Students are required to take the eight 552.xxx courses listed here by the end of Year Two. You can choose to defer a subset of these eight courses to Year Two. However, students unable to complete all eight of the 552.xxx courses in Year One must do so in Year Two.

NOTES:

Students must enroll in a minimum of 16 credits per term. The 16 credits can be reached by enrolling for special studies credit (140.840). These special studies must have a clearly defined objective.

It is strongly recommended that by the end of the first year, students should have earned 12 credits in non-Biostatistics courses (of which 6 credits must come from SPH courses). Special studies (800-level) courses in another department do NOT count toward this requirement.

By no later than the end of the fall term in the fourth year in-program, and in advance of scheduling the final oral exam (i.e. thesis defense), students MUST have earned a minimum of 16 credits from advanced elective courses in Biostatistics or other related disciplines (e.g. computer science). The course sequences *Advanced Methods in Biostatistics I – IV* (140.751-754), *Probability Theory I-IV* (EN.553.720, 140.721-724), *Statistical Theory I-IV* (140.731-734), and *Advanced Data Science I-II* (140.711-712) do NOT count toward this requirement. Please consult our List of Elective Courses for PhD Students for recognized elective courses. Students may take courses not included in this list, but they MUST first consult and obtain approval from both their advisor and the graduate program committee.

All students are expected to obtain training in the statistics/science interface (see Expectations of Doctoral Students Regarding Training at the Statistics-Science Interface).

All students must attend the weekly Biostatistics seminar series.

There will be a qualifying exam (multiple-hour in-class exam) within the first two weeks of June at the end of the 1st year.

Please consult our Doctoral Student Academic Standing Guide for more detailed information about academic requirements and expectations.

Year Two

<u>1st term</u>

Advanced Data Science I (140.711, 3 credits)[+]
Statistical Computing (140.776, 3 credits) *(if not taken in first year)*
Epidemiologic Inference in Public Health I (340.721, 5 credits) *(if not taken in first year)*[$]
Responsible Conduct of Research (550.600, 1 credit)**
"Cells to Society" modules, if applicable***
Academic and Research Ethics at JHSPH (550.860, 0 credits) *(if not taken in a previous term)*****
Electives
Special Studies (140.840, credits as needed in order to achieve 16 credits total)

<u>2nd term</u>

Advanced Data Science II (140.712, 3 credits)[+]
"Cells to Society" modules, if applicable***
Electives
Special Studies (140.840, credits as needed in order to achieve 16 credits total)

<u>3rd term</u>

Electives
"Cells to Society" modules, if applicable***
Thesis Research (140.820) (credits as needed in order to achieve 16 credits total)
and/or Special Studies (140.840, credits as needed in order to achieve 16 credits total)

<u>4th term</u>

Electives
"Cells to Society" modules, if applicable***
Thesis Research (140.820) (credits as needed in order to achieve 16 credits total)
and/or Special Studies (140.840, credits as needed in order to achieve 16 credits total)

+ The courses *Advanced Data Science I-II* (140.711-712) are required course sequences for the 2nd year. Per school policy, for students to remain in satisfactory academic standing students must meet the minimum grade threshold of a B in required courses.

$^\$$ Students who HAVE NOT already taken 3 credits of Epidemiology coursework and 550.865 (Public Health Perspectives on Research) must complete at least 3 credits of Epidemiology coursework.

* Students joining the PhD program on and after August 1, 2018, are required to take a minimum of 16 credits of advanced elective courses in Biostatistics or other related disciplines (e.g. computer science). Students joining the PhD program on or before July 31, 2018, are NOT required but are encouraged to take 16 credits in advanced elective courses. Please consult our List of Elective Courses for PhD Students for recommended elective courses.

** Students may take the 3rd term course 306.665 Research Ethics and Integrity: US and International Issues in lieu of 550.600.

*** Students are required to take the eight 552.xxx "Cells to Society" courses listed here (552.601.81, 552.603.81, 552.607.81, 552.608.81, 552.609.81, 552.610.81, 552.611.81, 552.612.81) by the end of Year Two if they have not already taken them in Year One.

**** Although this course is offered in subsequent terms, continuing students who have not previously taken the course are required to take this during 1st term and will not be able to register for 2nd term until they have done so.

NOTES:

Students must enroll for a minimum of 16 credits per term. The 16 credits can be reached by enrolling for special studies credit. These special studies must have a clearly defined objective.

In order for PhD students to graduate from the Bloomberg School of Public Health: At least 18 credit units of formal coursework are required in courses outside the student's primary department. At least nine of these credits must be taken in the School of Public Health. Students must also satisfactorily complete the courses 550.860 Academic and Research Ethics at JHSPH and 550.600 Responsible Conduct of Research.

By no later than the end of the fall term in the fourth year in-program, and in advance of scheduling the final oral exam (i.e. thesis defense), students MUST have earned a minimum of 16 credits from advanced elective courses in Biostatistics or other related disciplines (e.g. computer science). The course sequences *Advanced Methods in Biostatistics I – IV* (140.751-754), *Probability Theory I-IV* (EN.553.720, 140.721-724), *Statistical Theory I-IV* (140.731-734), and *Advanced Data Science I-II* (140.711-712) do NOT count toward this requirement. Please consult our List of Elective Courses for PhD Students for recognized elective courses. Students may take courses not included in this list, but they MUST first consult and obtain approval from both their advisor and the graduate program committee.

All students are expected to obtain training in the statistics/science interface (see Expectations of Doctoral Students Regarding Training at the Statistics-Science Interface).

Students are required to attend departmental seminars and participate in a working group.

During the course of the second year, students should start the process of identifying a thesis topic/advisor with the expectation that they start the thesis work at the beginning of their third year.

In order to take the preliminary schoolwide oral exam (usually to be held no later than end of December of the 3rd year), students should prepare a paper/proposal related to their potential thesis topic.

When selecting a preliminary oral exam committee, note that at least two members are expected to be non-statistical scientists and the department chair must approve the committee.

Please consult our Doctoral Student Academic Standing Guide for more detailed information about academic requirements and expectations.

Year Three

- o 550.600 Responsible Conduct of Research (if not taken in Year One or Year Two)
- o 550.860 Academic and Research Ethics at JHSPH (if not taken previously)
- o Coursework in scientific/statistical electives/special studies for a minimum of 16 credits per term

Years Four-Five

- o Coursework in scientific/statistical electives/special studies for a minimum of 16 credits per term

TRAINING IN THE STATISTICS-SCIENCE INTERFACE

Biostatistics comprises the reasoning and methods for using data as evidence to address public health and biomedical questions. It is a methodology for empirical research. Successful research biostatisticians must work at the interface of mathematical statistics and science, translating and connecting ideas from each domain.

An essential learning objective of the Johns Hopkins PhD program in biostatistics is the ability to work at the statistics-science interface: formulating scientific questions in statistical terms; using mathematical and statistical models to quantify empirical evidence relevant to scientific questions; interpreting quantitative findings in scientific terms and communicating key statistical ideas for scientific audiences.

To achieve this objective, Hopkins PhD students are expected to demonstrate their ability to work effectively at the statistics-science interface. Specifically, they must demonstrate their ability to:

1. Master and communicate the scientific background, context, language and ideas relevant to a particular research question;

2. Represent scientific questions in terms amenable to the design and analysis of empirical studies to address the question;
3. Quantify study findings using appropriate statistical ideas and methods;
4. Correctly interpret and communicate the statistical results in terms that are meaningful to their scientific colleagues.

Students are expected to:

1. Develop expertise in a scientific area outside biostatistics (through course work, self-study, directed reading or other means;
2. Demonstrate in the preliminary oral exam written proposals, preliminary and final public oral exams, and periodic research-in-progress meetings with their thesis committees the ability to communicate effectively with statistical and non-statistical scientists from outside the department about the major ideas from the minor and about statistical concepts and methods in relevant, scientific terms;
3. Produce an individual development plan (IDP) to detail their training at the statistics-science interface and their goals for the coming year, discuss this document with their advisor, and submit annual IDP summary reports to be reviewed by the graduate program directors annually;
4. Select oral exam committees and a thesis committee that have adequate representation by nonstatistical scientists; the preliminary oral exam committee is expected to have at least two non-statistical scientists. The committees will be approved by the department chair.

EXAMS AND THESIS DEFENSE

First-year Comprehensive Written Exam

The Department requires a comprehensive written examination at the end of the first year (usually about 2-3 weeks after the end of fourth term) in support of student learning and as required by the Bloomberg School of Public Health. The examination consists of questions to assess competency in four core components of the program – probability, statistical theory, methods, and analysis and interpretation of data relevant to health. Students must take and pass at least three of the four components in order to pass the examination.

The examination with all four components takes 3.5 days in total. Statistical theory, methods, and probability portions of the examination are held in the first two days. Statistical theory and methods examinations are allocated three hours each. The probability portion is allocated six hours, split into two parts -- each taking up to three hours. A data analysis portion of the examination starts in the third day. Students have a full day to work on this data analysis project. They are expected to submit a written report summarizing analysis results along with analysis codes in the following day, usually by noon.

An evaluation of student progress is made by faculty at the end of the first year. Performance in coursework and on the comprehensive exam are synthesized. Based upon this review, students are invited to continue on towards the PhD degree or to complete a terminal master's degree.

First year students maintaining B grades in core classes can sit for the first year comprehensive exam. Students with any grades lower than a B in core classes must receive approval from the graduate committee to sit for the exams. In the event that students are denied opportunity to sit for the exam, possible resolutions include postponing the exam for one year, switching to a master's program or being required to leave the doctoral program based on a consideration by the faculty of overall academic performance.

Students must pass the comprehensive exam before the third year study begins. In the event of a failure of the exam, students are allowed at most one retake, provided that the retake can occur before the third year study begins. Student retakes typically occur in the following year. When mitigating circumstances are present, such as a leave of absence, exceptions to the above rules are discussed and may be granted by the graduate program committee on a case-by-case basis.

In the event of failing to pass the comprehensive exam by the beginning of the third year (with exceptions above when mitigating circumstances are present), the student will be asked to leave the doctoral program, typically with the option to join the master's program. The exams, either a first take or retake, are given once per year at the start of the summer break (typically in early-mid June).

The grading of the Departmental exam is as follows. Passing scores are determined in by exam writers after grading with examiners blinded from student names. Students who pass three of the four sections of the exam pass the exam. Students who do not pass three sections will be discussed by the faculty as a whole. This discussion will include exam and course performance. Possible resolutions include: declaring the student as passing the exam, declaring the student as having failed the exam, take-home remediation of sections of the exam or a full retake (only available if it is the student's first attempt at the exam).

School-wide Preliminary Oral Exam

The Bloomberg School of Public Health requires satisfactory completion of a preliminary oral examination, usually taken at the beginning of the third year and before significant thesis research is underway. Biostatistics students are strongly encouraged to take the examination by the end of second term of the third year.

In order to take the preliminary schoolwide oral exam (usually to be held no later than end of December of the 3rd year), students should prepare a paper/proposal related to their potential thesis topic. A preliminary oral exam committee must be formed before the exam. The committee must consist of 5 faculty members. Among them, 2 must be from the Department of Biostatistics, 2 must be from other departments, and the remaining one can be either from the Department of Biostatistics or from the other departments. When selecting a preliminary oral exam committee, note that at least two members are expected to be non-statistical scientists, and the department chair must approve the committee.

The examination committee consists of both internal and external faculty members and as such, provides students the opportunity to strengthen their skills as statistical educators and communicators. Students are to refine their research proposal papers to: 1) make it more

accessible to non-statistical readers; and 2) include their discussion of opportunities to statistical research on their topic and its significance to non-statisticians. While the oral exam can cover a broad range of statistical and public health topics, the student is usually given the opportunity to present his/her research interests and proposal that are then a starting place for the examiners. The primary purpose of this examination is to test the depth and breadth of general knowledge in public health and biostatistics. The exam takes 1.5-2 hours. It usually consists of a faculty discussion of the student's progress, a student presentation (10-15 minutes), a question and answer session (1-1.5 hours) during which faculty ask exam questions for student to answer, and faculty voting of the exam result. The student is required to leave the room during the faculty discussion at the beginning and the faculty voting at the end. For specific information about the rules governing the preliminary oral examination, please consult the appropriate Policies and Procedure Memorandum from the School of Public Health.

To maintain good academic standing, students must complete their school-wide preliminary oral exam by the end of their third academic year, before the start of the first term of their fourth year (typically late August or early September depending on that year's academic calendar).

Final Public Thesis Defense

After successful completion of the preliminary oral examination, students, with input and guidance from their advisors, will embark upon scientific research culminating in a written thesis. The thesis defense consists of a one-hour presentation of the research topic to the thesis committee and general public, followed by a private discussion of the presentation by the student and thesis committee.

The thesis defense committee must be formed before the thesis defense. The committee should consist of 4 faculty members including the student's thesis advisor. It must have 2 faculty members from the Department of Biostatistics and 2 faculty members from other departments. In the committee, 3 different academic departments must be represented, with 2 of the 3 coming from the School of Public Health.

The School also requires written acceptance of the thesis by the student's advisor and committee chair, as well as submission of the final versions of the thesis, in electronic format, to the university and department's respective repositories.

Below are the procedures biostatistics PhD students must follow to submit the required final university and departmental copies of their dissertations.

1. Online Submission of Dissertation to Eisenhower Library

   - Submission of electronic thesis or dissertation (ETD) — Submit a PDF/A copy of your final thesis/dissertation to the Johns Hopkins ETD Submission Tool http://etd.library.jhu.edu. Instructions for formatting and submitting may be found at http://guides.library.jhu.edu/etd
   - "Thesis/Dissertation Format Guidelines" - Follow these guidelines when incorporating your examining committee's recommendations and finalizing your thesis/dissertation.

You can also send your thesis electronically to the Eisenhower Library for review, before making any changes or copies for department or personal use: dissertations@jhu.edu. You can review the formatting guidelines on our ETD LibGuide https://www.library.jhu.edu/library-services/electronic-theses-dissertations/formatting-requirements/. When you are ready to submit your dissertation, electronically, please make sure you review the section in the formatting guidelines, pertaining to PDF/A. YOUR ELECTRONIC COPY WILL NOT BE ACCEPTED IF IT IS NOT IN THIS PDF/A FORMAT.

2. Submission of Dissertation for Department Copy

- Email the same file that you submitted in 1A to Mary Joy Argo (margo@jhu.edu), who will arrange for the file to be stored in our secure departmental repository (which will not be publicly-available).
- For those students who would still like to have printed, bound copies of their dissertations for their own personal use: The university's current bindery, the HF Group, offers a Thesis on Demand service (http://www.thesisondemand.com/) that enables students to upload their dissertation, have it printed, bound, and shipped back to them, and pay via credit card. Depending on the number of pages, and whether or not color is needed, the cost should be approximately $40 plus tax and shipping. Additionally, as of this writing, the SPH Registrar's Office is still able to facilitate getting printed, bound copies of theses for personal use. Anyone interested should contact Edda Budlow (Room E1002; ebudlow@jhsph.edu), who can provide more detailed information.
- For those students who wish to register a copyright for their thesis: Further information is available at https://guides.library.jhu.edu/copyright. Please note that copyright registration is optional and that the work is copyrighted as soon as it is put down in tangible form— registration is just an additional form of protection.
- For additional information about post-dissertation requirements: please go to https://tinyurl.com/yy5k38t2. Please contact Mary Joy Argo (margo@jhu.edu) if you have any further questions.

If data sets involving animal and/or human subjects are to be used or referred to in any way in the thesis, students MUST obtain appropriate clearance from the School's IRB Office. Students should contact the IRB Office BEFORE engaging in thesis research. For specific information about the rules governing the final thesis defense, please consult the appropriate Policies and Procedure Memorandum from the School of Public Health.

FUNDING

All applicants to our PhD program are automatically considered for the small number (i.e. 6-12) of fully-funded slots available each year. Full funding is awarded on a competitive basis and consists of five years of 100% tuition coverage, individual health insurance, and no less than $25,500* per year for living expenses, provided that steady, satisfactory progress is made toward the PhD degree.

The mechanism of payment for your stipend varies according to your funding source. For students supported by NIH training programs or an external scholarship source, stipend is paid by your program for the duration of funding by the respective source. See section NIH TRAINING PROGRAMS for a description of work regulations for NIH trainees.

For others, stipend is provided by the department during the first year of study. Thereafter, participation in research is considered as a crucial part of students' academic development, and stipends are provided through paid research assistantships (see section RESEARCH ASSISTANTSHIPS). These may be funded through projects led by your advisor, other Biostatistics faculty, faculty members in other departments with whom a Biostatistics faculty member collaborates, the Biostatistics Center, and the like. It is important that each student know the source of his/her funding and understand the responsibilities that come with it. Students should meet with their academic advisors on a regular basis to identify opportunities and discuss progress of ongoing assignments.

All PhD students who have completed 5 years of study are required to pay for their own departmental tuition (currently $16,000 per year) and health insurance. Students in this category are not required to serve as teaching assistants. If they choose to do so they will be paid for their time for five hours per week.

As outlined in section PART-TIME STUDY, except under special circumstances, part-time PhD study is actively discouraged. Accordingly, there is no financial support of any kind for tuition, health insurance, or living expenses for part-time PhD students.

* rate for 2020-21 academic year. Funding for tuition and stipend is guaranteed at the same levels, conditions and expectations described in your original acceptance letter into our program.

Research Assistantships

Beginning in their second year, students who are not supported by NIH training programs or an external scholarship source are required to apprentice with faculty as research assistants in exchange for their stipend. Students find this apprenticeship with faculty to be one of the most valuable parts of their education. Please do not hesitate to speak with faculty members about research assistantship opportunities they may have available. Additionally, Mary Joy Argo has compiled a list of opportunities and can otherwise assist you in identifying a suitable research assistantship. Please note that your stipend is accompanied by an expectation of 19 hours per week research assistantship work for 11 months per year. It may be less if good faith efforts to maintain employment at this level of expectation are not made or if there is substitution of off-site summer work. If there are difficulties or gaps with your employment, please notify the Department payroll office immediately. If you have questions about your particular situation, please contact Mary Joy Argo (margo@jhu.edu).

Departmental policy limits the number of paid hours students may work during the academic year to 19.99 hours per week (this includes both paid research assistantships and paid teaching assistantships). Under exceptional situations where there is an educational support need that students may fill without impeding their academic progress, an additional five hours per week is

allowable with advance permission from the Graduate Program director and OIS in the case of international students. During non-academic periods students may work additional hours per week (up to 40 total) for additional income, so long as this does not impede academic progress. All JHU employment most be coordinated through the Biostatistics administration and be approved by the student's academic advisor. For questions, please contact Joetta Love (jlove12@jhmi.edu), departmental human resource coordinator. International students with questions regarding their work eligibility should contact the Office of International Services or Joetta Love (jlove12@jhmi.edu).

NIH Training Programs

The Department currently offers an NIH-funded training opportunity in the epidemiology and biostatistics of aging.

Positions on NIH institutional training grants may not be used for study leading to the MD, DDS, or other clinical, health-professional degrees except when those studies are a part of a formal combined research degree program, such as the MD/PhD. Similarly, trainees may not accept NIH support for studies that are part of residency training leading to clinical certification in a medical or dental specialty or subspecialty. It is permissible and encouraged, however, for clinicians to engage in NIH- supported full-time, postdoctoral research training even when that experience is creditable toward certification by a clinical specialty or subspecialty board.

Students enrolled in health-professional doctoral degree programs may receive support for a period of short-term, full-time research training as described above. Additionally, health-professional students or individuals in postgraduate clinical training may interrupt their studies for a year or more to engage in an extended period of full-time research training before completing their professional degree or other types of clinical training.

Trainees are required to pursue their research training on a full-time basis, devoting at least 40 hours per week to the program. Within the 40-hour-per-week training period, research trainees who are also training as clinicians must devote their time to the proposed research training and must confine clinical duties to those that are an integral part of the research training experience.

To be appointed to a training position supported by an NIH research training grant, an individual must be a citizen or noncitizen national of the United States or must have been lawfully admitted for permanent residence (i.e. in possession of a currently valid Alien Registration Receipt Card I-551, or some other legal verification of such status). Noncitizen nationals are generally persons born in outlying possessions of the United States (e.g. American Samoa and Swains Island). Individuals on temporary or student visas are not eligible.

Predoctoral trainees must have received a baccalaureate degree by the beginning date of their NIH appointment, and must be training at the postbaccalaureate level and enrolled in a program leading to a PhD in science or in an equivalent research doctoral degree program. Health-professional students who wish to interrupt their studies for a year or more to engage in full-time research training before completing their professional degrees are also eligible.

Departmental policy limits additional hours worked by NIH trainees to 10 hours per week during the academic year and 30 hours per week during summer.

NIH training grants support a large part of each trainee's tuition, stipend and insurance. Typically, additional funding is provided to support travel and other training related expenses. The amount of these funds and their restrictions vary by grant. Questions regarding these funds should be directed to the individual training program directors.

TEACHING ASSISTANTSHIPS

Beginning in their second year, all PhD students are expected to spend approximately five hours per week per term performing duties associated with their function as Teaching Assistant (TA) for a course. Typically, this involves:

- becoming familiar with the lecture and lab materials either by previously taking the course, sitting in on the course, or reviewing the materials;
- participating in lab sessions as needed;
- holding TA office hours;
- grading homework, quizzes, exams or projects;
- attending organizational meetings with the instructor(s) and other teaching assistants.

Teaching assistants are extremely valuable members of the instructional team. At times, students may feel more comfortable in approaching teaching assistants for help than the instructor. Teaching assistants should inform instructors of students who are experiencing unusual difficulties. Also, teaching assistants should provide feedback to the instructor if they discover typographical errors or mistakes in the course materials, problems with course data sets, difficulties in accessing the course website, or any other unanticipated troubles.

For certain large course sequences offered to public health professionals, a teaching assistant(s) may be assigned as a Lead Teaching Assistant. This position entails the additional duties of conducting 2-hour laboratory sessions approximately twice per week and meeting weekly with the course instructors. These additional responsibilities result in a total time commitment of approximately 10 hours per week. Fulfilling the role of Lead Teaching Assistant for two terms satisfies a student's teaching assistant commitment for the entire academic year.

In situations where we have more teaching assistants than are needed, more senior students will receive priority for being released from this responsibility. Teaching assistantships during the first 5 years are considered part of each PhD student's academic development. Therefore, these students are not paid for this teaching assistantship, except during the summer term (when TA service is voluntary).

Before each academic school year, student preferences for Teaching Assistant positions are collected by the academic coordinator (Mary Joy Argo, margo@jhu.edu) and positions are assigned prior to the start of each term.

TA Training

At the beginning of each academic year, we hold a mandatory, half-day TA training session for all 2nd-year students. This session was initiated in 2003 and, since then, has been held annually in late August or early September of each academic year. Although the session is arranged and mentored by a Biostatistics faculty member, senior doctoral students take responsibility for the session, the agenda and changes or modification in topics. Topics covered include: Preparedness and knowledge of the material; understanding the backgrounds of students in the course; grading expectations; interpersonal skills, best practices for conducting labs and holding office hours, and time management. These topics are highlighted and emphasized via skits and subsequent discussion, as well as role playing conducted by all participants. Small group breakouts discussions on TA expectations and responsibilities are organized by different types of courses (i.e. small, medium, large; department vs. schoolwide; graduate vs. undergraduate). In 2019, a section was added to the training session on tools for supporting mental health as a TA, as well as resources.

In addition to our departmental TA training session in August, we require Biostatistics 2nd-year PhD & ScM students to complete the Center for Teaching & Learning's online TA training module. This is a single, self-paced, online course that we feel is both complementary to and reinforcing of our departmental TA training. It is particularly important for those who are unable to attend the departmental TA training session in August. More information about the training is available at https://sites.google.com/site/ctltteachingtoolkit/teaching-assistants/ta-training. Please go to https://courseplus.jhu.edu/core/index.cfm/go/enr:enr.start/cID/1886/ to register for the July 1st offering (enrollment is ongoing) and complete the training no later than December 31st of your second year. If you do not complete the training by December 31st, you will need to sign up for the next session, which begins on January 1st.

ADVISING

Upon matriculation, all students are assigned an academic advisor who will serve as a resource for curriculum planning, part-time projects, registration approval, etc.

During the course of the first year, students are encouraged to attend working group meetings to proactively explore the research of the faculty as a whole. During the course of the first two years, students should start the process of identifying a thesis topic/advisor with the expectation that they start the thesis work in earnest following their second academic year. Typically, after the second year of study, students have already begun to establish collaborative relationships with faculty members. Shared interests and compatible work styles will usually lead to a student, at the end of the second year or beginning of the third year, requesting a faculty member to be his or her thesis advisor. Once a faculty member has agreed to be a thesis advisor, the student should notify Mary Joy Argo (margo@jhu.edu) immediately so that the proper records can be updated. As a courtesy, students should also notify their former academic advisor of this change.

The thesis advisor works with the students to plan for the school-wide preliminary oral examination, usually held during the first two terms of the third year. Once the student has

passed the preliminary oral examination, the thesis advisor assists the student in putting together a PhD committee and in preparing for the final thesis defense.

PhD ADVISORY COMMITTEES

In order to further strengthen faculty and student interaction in the PhD program as well as maximize advising opportunities for our junior faculty, students in their third year are required to identify a primary thesis advisor and a secondary faculty advisor within the Department of Biostatistics as well as two or three faculty members from outside the Department to serve as a "PhD committee." This committee meets at least once per year to review student progress and to provide a brief report to the graduate program and student. Students present thesis progress using appropriate written or visual aids and obtain feedback and suggestions to enhance their research productivity. These meetings also stimulate dialogue within the department and with outside faculty who participate. While it is anticipated that students will draw from this committee for their thesis readers, it is not required that they do so. At the end of each thesis advisory committee meeting, the committee should complete the Annual Thesis Committee Meeting Form to summarize views on student progress and specific recommendations for continued success. The student will retain a copy of the Annual Thesis Committee Meeting Form and return a copy to the Department Academic Coordinator Mary Joy Argo (margo@jhu.edu).

INDIVIDUAL DEVELOPMENT PLANS

As of the 2018-19 academic year, all enrolled and active doctoral students at the University must be evaluated annually starting with their first year in the program. The University policy is laid out here: http://homewoodgrad.jhu.edu/academics/policies/.

Based on the JHSPH Guide to Effective Doctoral Reviews, there are three major components that must be addressed for each student annually:

1. Student Self-Assessment and Individual Development Plan (IDP)
2. Monitoring of student progress in the program
3. Feedback to student

The concrete requirements for Biostatistics students are described in detail below.

1. Student Self-Assessment and Individual Development Plan

- Each student should complete the IDP in the Fall of each academic year, before the end of 2nd term.
- The student and advisor are required to meet in person to discuss the IDP during the 2nd term.
- After the meeting, the student should write up a brief summary (1 paragraph) including the goals and plans for the next year. The student is required to submit the summary to the Department Academic Coordinator (Mary Joy Argo, margo@jhu.edu) to go into the student's record, as documentation that the IDP was completed and discussed between student and advisor.

- The department is required by the school to have a record that the process was completed. This could be in the form of an email from the student to the Academic Coordinator with this summary paragraph, cc'ing the advisor.

2. Monitoring of student progress in the program

- Upon successfully completing the Preliminary Oral Examination, a Thesis Advisory Committee (see PhD Advisory Committees above) is formed to monitor the student's progress of his/her thesis research. The committee typically consists of 4-5 faculty members including the student's primary thesis advisor and should have adequate representation by both biostatistics faculty (2 faculty members) and nonstatistical scientists (2-3 faculty members). Members of the committee may have primary appointments in Biostatistics or in other departments of the university. Students are encouraged to select members of their committee in consultation with their thesis advisor. In addition to regularly scheduled meetings with their Thesis Advisory Committees, students are also encouraged to consult with their committee members for advice as necessary.
- Students are required to meet with their Thesis Advisory Committees at least once each year, before the end of 3rd term.
- At the end of each thesis advisory committee meeting, the committee should complete the Annual Thesis Committee Meeting Form to summarize views on student progress and specific recommendations for continued success. The student will retain a copy of the "Annual Thesis Committee Meeting Form" and return a copy to the Department Academic Coordinator.
- Each student will be reviewed by the teaching faculty of the department in a faculty meeting at the end of each academic year. The meeting will discuss students' academic progress. It is the student and advisor's responsibility to complete the annual IDP process and—for students having completed their preliminary oral examinations, thesis advisory committee meeting--before the annual departmental review. Students in their first two years additionally are reviewed by the teaching faculty in a mid-academic year meeting.

3. Feedback to student

- After the annual departmental review, the department will provide feedback to each student in writing by August 1, detailing progress in the program, evidence of completion of the IDP process and discussion, and summary of specific goals and expectations for the next year.

SUPPORT FOR TRAVEL

The Department wants its PhD students and graduates to be effective communicators of statistical and scientific research. Toward this end, the Joseph Zeger Travel Reimbursement Fund has been established to provide partial support for PhD students to present papers or posters at research meetings. The Fund recognizes Joseph Zeger, who believed all individuals, and not just those of means, should have the opportunity to achieve their full potential. Students must request permission from Dr. Hongkai Ji, graduate program director, in a brief letter, co-signed by the

advisor, which indicates the meeting and the paper title. Once students have obtained the necessary signatures, they should bring/email the letter of request to Mary Joy Argo (margo@jhu.edu) in Room E3523. Students will be reimbursed for up to a fixed amount that is set by the administrator annually. (The current amount is $500.) Because funds are limited, students may receive partial support for only one meeting per fiscal year (i.e. July through June). Funded students are also expected to present their paper to the Department's students and faculty in a formal or informal setting.

Students supported on NIH-funded training programs typically have additional conference registration and travel support available to them.

DEPARTMENT RESOURCES

SEMINARS

The Department offers a weekly seminar program featuring recent work by outstanding statistical scientists from around the world. Attendance is required for all PhD students. Seminar announcements are distributed via email and posted on the departmental website. For more information about seminars, please contact Kara Schoenberg (kschoe10@jhmi.edu).

WORKING GROUPS

Various formal and impromptu working groups and student learning groups exist throughout the Department. These groups provide supplemental seminars and didactic sessions, opportunities to observe faculty research-in-progress presentations and discussions, and opportunities for student presentation of research in progress. Student participation in these groups is strongly encouraged.

CONSULTING OPPORTUNITIES

The Johns Hopkins Biostatistics Center provides the latest in biostatistical and information science expertise to a wide range of clients in the Johns Hopkins Medical Institutions. We also consult to health researchers at other academic health centers, pharmaceutical companies, medical research organizations, managed care organizations and government agencies. Our clients have included Merck, Pfizer, the University of Maryland, and the U.S. Department of Justice.

The Center offers consulting on biostatistical issues related to the effective collection and interpretation of health information, including designing research studies; designing data collection systems and instruments; data entry and validation; data management and quality assurance; statistical analysis and data interpretation and professional and scientific report writing. There are numerous opportunities for hands-on experience in each of these areas, including consulting in a weekly biostatistics clinic available to Hopkins faculty and students.

To learn more about the Center and biostatistical consulting opportunities, please contact Dr. Gayane Yenokyan, Executive Director.

STUDENT OFFICES, LOCKERS, AND MAILBOXES

All PhD students are assigned an office space for their first five years. The Department's ability to provide offices to PhD students in their sixth year and beyond varies year by year and is dependent on space availability. Students without an office assignment are welcome to use the Computing Lab (aka Genome Café) and the common room of the Biostatistics Library.

Students without office assignments who would like a permanent place to store their belongings are free to choose any locker in the Wolfe St. Building and secure their belongings with their own lock or stop by the Student Affairs Office in E1002 and pick up a lock. Lockers are cleaned and fumigated every June. An email will be sent by the School to all students with the cleaning date in advance. All items must be removed prior to the cleaning date; any items left in lockers during the cleaning period will be discarded. The School is not responsible for any items left in lockers. Any personal locks left on the lockers will be cut off during the cleaning in June.

Student mailboxes are located along the wall facing the main Biostatistics office (Room E3527).

COMMON SPACES

Biostatistics Library

The Biostatistics Library, located in Room W3513 of the Wolfe Street Building, is open only to affiliated faculty, students, and staff.

- List of Departmental Journals
- Search the Biostatistics Library Catalog

Library Common Room & Genome Café

The library common room, located in W3513, and Genome Café, located in E3607, have been created to stimulate creativity, productivity and collaboration among members of the Department of Biostatistics and with our Hopkins and external colleagues. To maximize the rooms' value, please abide by the following general guidelines.

- Informal discussions and group meetings are encouraged. Be respectful of others not participating.
- To schedule use of the room for formal presentations, or for concerns about the space or equipment, please send an email to BiostatEvents@jhu.edu.
- Submit large computing jobs to the cluster. Use desktops for interactive computing only.
- Take your belongings with you at the end of work sessions and at the end of the day.
- Snack food and drinks are permitted but not in the immediate proximity of equipment.
- Leave the room cleaner than you found it.

COMPUTING

The [Biostatistics Information Technology committee](#) (BIT) at the Department of Biostatistics is responsible for advising the Biostatistics Chair on all issues related to computing. It also serves an oversight role over the Joint High Performance Computing Exchange (JHPCE).

The [Joint High Performance Computing Exchange](#) (JHPCE) is a High-Performance Computing (HPC) facility in the Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health. To join the JHPCE as a new user, fill out the [JHPCE new user request form](#).

WEBSITE

The Department's [website](#) is maintained and updated regularly by Erica Tunstall (etunsta2@jhu.edu). Here information can be found on almost all aspects of departmental life, including [academics and student life](#), [research and working groups,](#) and [seminars and events](#).

Students are automatically listed on a [section](#) of our website that displays basic information, such as room and phone numbers, name of advisor, and previous degrees. These pages are maintained by Erica Tunstall and are a valuable resource for prospective students and faculty members.

Students are strongly encouraged to create a personal website that can be accessed from their departmental listing. The creation of such a site is particularly important for senior students, as potential employers increasingly rely upon information posted upon job candidates' websites. Suggested materials to post are CVs, lecture slides, papers (i.e. oral exam presentations), software, teaching experience, and other indicators of professional expertise and experience. Students are encouraged to copy the page designs of faculty and other students. Students who have a personal website should notify Erica Tunstall (etunsta2@jhu.edu), who can insert a link to that website.

STUDENT LIFE

HEALTH INSURANCE

Fully-funded students have health insurance coverage for five years. This includes health insurance coverage under the Student Health Plan administered by EHP, the University Health Services (UHS) clinic fee, dental insurance, and vision insurance. For more information, click [here](#).

In addition, all JHSPH students are provided a free annual eye exam/contact lens evaluation through UHS. One comprehensive eye exam/contact lens evaluation per plan year is provided by the Wilmer Institute Comprehensive Eye Service at no cost to School of Medicine, Berman Institute of Bioethics, and Bloomberg School of Public Health participants. It is important that you identify yourself as a student or postdoctoral fellow when making the appointment. Appointments may be made at any of the following sites:

- Johns Hopkins Hospital 410-955-5080

- Greenspring Station 410-583-2800
- Columbia 410-910-2330
- White Marsh 443-442-2020
- Bel Air 410-399-8443
- Bethesda 240-482-1100

Note: Provider bills for routine eye examination/contact lens evaluations, and an Explanation of Benefits (EOB) if received, should be forwarded to the UHS Benefits Office for prompt payment by that office.

For any questions regarding health insurance, please contact Steve Bazzetta (sbazzet1@jhu.edu).

WELLNESS AND MENTAL HEALTH

Students' mental health are a priority for the department and university. The Student Assistance Program (JHSAP) is a free, convenient, and confidential evaluation and referral service available to all students in the School of Public Health. JHSAP offers identification and assessment of personal, family, and school/work-related issues, brief counseling and consultation, and referrals to appropriate and accessible services and resources.

Students are also supported by the Office of Student Life at the Bloomberg School, the UHS Office of Wellness and Health Promotion, and the UHS Mental Health program.

FITNESS

The Bloomberg School offers its own private fitness center for students, faculty and staff. The facility is a satellite of the Denton A. Cooley Center and features state-of-the-art Life Fitness strength equipment. It is located on the 9th floor, 615 N. Wolfe Street and is open 7:00 a.m. to 7:00 p.m., Monday through Friday, and provides a safe workout environment for faculty, staff and students with a captivating view of Baltimore. For more information, visit http://jhmifitness.com/.

SEXUAL HARRASSMENT AND ASSAULT

We do not tolerate sexual harassment of any kind in our community. Neither do we tolerate discrimination or harassment with respect to sex, race, ethnicity, sexual orientation, religious beliefs, or other characteristics comprising people's status and identities. These behaviors and perspectives are deplorable and unacceptable without exception.

Anyone who believes they are experiencing harassment or discrimination must feel free and open to seek redress. If you find yourself in such a situation, you will have the full support of the department in reporting it and in pursuing remedy.

The University is committed to promoting a safe and supportive environment for each and every member of our community. If you have been sexually assaulted or a victim of sexual violence, we urge you to reach out for emotional support and medical care. We also stand ready to assist

you with a complaint through JHU and/or local law enforcement. The University has developed avenues for reporting and for seeking help, as well, including:

- JHU Sexual Assault Helpline 410-516-7333 (confidential)
- University Sexual Assault Response and Prevention website
- Johns Hopkins Compliance Hotline 844-SPEAK2US (844-733-2528)
- JHU Office of Institutional Equity 410-516-8075 (nonconfidential)
- Johns Hopkins Student Assistance Program (JHSAP) 443-287-7000
- University Health Services - Mental Health (UHS-MS) 410-955-1892

SECURITY

Corporate Security is responsible for the oversight of security operations and investigations on the campuses of Johns Hopkins Medicine. Its force, which consists of security professionals and off-duty Baltimore City Police Officers, operates 24 hours a day, 7 days a week. Officers are posted at key areas inside and outside buildings and patrol the entire campus.

Although the security team works hard to keep the Hopkins campuses safe, there may be times where you'd feel more secure if you had a security escort. Corporate security offers complimentary protective services escorts for patients, visitors, students and employees. Wherever you are on campus, just call 410-955-5585 and an officer will meet you and walk you to your on-campus destination.

TRANSPORTATION

Homewood Transportation Services provides several shuttle services to faculty, staff and students. These include daytime services which connect the various Johns Hopkins properties across Baltimore, such as the popular Homewood - Peabody - JHMI Shuttle route, which connects the Johns Hopkins Homewood campus and the Johns Hopkins East Baltimore medical campus.

Beginning in the 2018-2019 academic year, JH SafeRide is powered by Lyft. This service provides free, safe travel between your home and school for Johns Hopkins University pre-doctoral students of SOM, SON or JHSPH who live near the Johns Hopkins East Baltimore medical campus. For more information, visit https://jhsaferide.jh.edu/.

For parking, registered Bloomberg School students can sign up for discounted monthly parking at the Church Home Garage (1600 E. Baltimore Street) and Ashland Garage (900 North Washington Street).

HOUSING

The average student rent in Baltimore is $800-$1200 per month. The 929 Building is the closest housing accommodation to the East Baltimore Medical Campus where the Bloomberg School is located. If you do not plan to bring a car, look for housing that is located on the Johns Hopkins shuttle route or other public transportation. Johns Hopkins hosts an off-campus housing service

to browse housing listings and post requests for roommates. For additional resources and tips on finding housing, click here.

JOHNS HOPKINS SCHOOL OF PUBLIC HEALTH GUIDEBOOK

Every year, a guidebook is published online (https://www.jhsph.edu/offices-and-services/student-affairs/resources/jhsph-guidebook) highlighting University and Bloomberg School policies and resources. This publication replaced the Academic Catalog in 2012.

FEEDBACK AND OMBUDSPERSON

We hope that students will feel welcome to reach out to their advisors, the Graduate Program Director, or the Department Chair to offer feedback or seek help. We recognize, however, that it may be difficult to reach out to such individuals with certain concerns. Therefore, there are two other avenues by which to reach out:

1. Students can provide anonymous feedback and comments about any aspect of the Department of Biostatistics, including the graduate program, at the following link: http://www.biostat.jhsph.edu/feedback/

2. Margaret Taub (mtaub@jhsph.edu) serves as the department's ombudsperson. Please reach out to her as a resource who can pass on concerns while maintaining student anonymity, provide help in finding information and support resources, assist in navigating difficult communications, or serve as a sounding board. She is empowered to maintain confidentiality within guidelines allowable under Title IX regulations (see https://oie.jhu.edu/policies-and-laws/jhu-policies/index.html).