

PhD in  
**BIOSTATISTICS**

2020-21 HANDBOOK



**IUPUI**

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## IUPUI Vision, Mission, and Values

IUPUI is an urban research university created in 1969 as a partnership by and between Indiana and Purdue Universities, with Indiana University as the managing partner. Thus IUPUI is a campus of Indiana University that grants degrees in 185 programs from both Indiana University and Purdue University. IUPUI offers the broadest range of academic programs of any campus in Indiana and is the state's principal site for graduate professional education. This campus ranks among the top fifteen in the country in the number of first professional degrees it confers and among the top five in the number of health-related degrees. IUPUI is the home campus for state-wide programs in medicine, dentistry, nursing, allied health, and social work and extends its program offerings through IUPUC (Columbus). IUPUI's University Library provides regional leadership for developing digital resources and making them available throughout the community. Building upon a tradition of excellence in higher education, IUPUI provides access for committed learners to quality education that conveys the skills, intellectual framework, and values necessary for life-long learning. Its programs and services influence thinking and practice throughout the state, across the country, and around the world. IUPUI serves as a catalyst for collaboration in teaching, research, and service among its faculty, students, and staff, and among the state's educational institutions, including colleges, universities, and schools of the Indianapolis region, and other learning organizations. IUPUI is home to dozens of interdisciplinary research centers and in the next century expects to become one of the nation's leading centers of interdisciplinary teaching and learning.

The **VISION** of IUPUI is to be one of the best urban universities, recognized locally, national, and internationally for its achievements.

The **MISSION** of IUPUI is to advance the State of Indiana and the intellectual growth of its citizens to the highest levels nationally and internationally through research and creative activity, teaching and learning, and civic engagement. By offering a distinctive range of bachelor's, master's, professional, and Ph.D. degrees, IUPUI promotes the educational, cultural, and economic development of central Indiana and beyond through innovative collaborations, external partnerships, and a strong commitment to diversity.

In pursuing its mission and vision, IUPUI provides for its constituents excellence in:

- Teaching and Learning
- Research, Scholarship, and Creative Activity
- Civic Engagement, Locally, Nationally, and Globally

With each of these core activities characterized by:

- Collaboration within and across disciplines and with the community,
- A commitment to ensuring diversity, and
- Pursuit of best practices

## IUPUI Statement of Values

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. We value the opportunities afforded by our location in Indiana's capital city and are committed to serving the needs of our community. Our students, faculty, and staff are involved in the community, providing educational programs, working with a wide array of community partners and clients, and engaging in field research spanning virtually every academic discipline. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of a diverse campus community of students, faculty, and staff; to continuous improvement of its programs and services; and to building a strong, welcoming campus community for all.

## Introduction

This handbook describes general information, requirements, regulations, and procedures for the Indiana University Ph.D. program in Biostatistics offered on the campus of Indiana University Purdue University Indianapolis ([IUPUI](#)). This program is administered by faculty in the [Department of Biostatistics](#) of the [Richard M. Fairbanks School of Public Health](#) with support from faculty in the [Indiana University School of Medicine](#), and the [Department of Mathematical Sciences](#) of the Purdue University [School of Science](#) at Indianapolis.

This PhD program in biostatistics combines the strength in statistical theory and modeling of the Department of Mathematical Sciences and the biostatistical methods research, health sciences applications, and public health experience of the Department of Biostatistics. This unique collaboration provides an excellent environment for collaborative and interdisciplinary study. With a low student/faculty ratio, this program also offers students many opportunities for close interaction with faculty and careful research guidance.

The program is designed for individuals with strong quantitative and analytical skills and a strong interest in biological, medical and/or health related sciences. It provides rigorous training in statistical theory and methodologies that are suitable for applications in research, collaboration and consulting on a broad spectrum of health and life science problems. The program stresses the theory and concepts underlying statistical methods, the interpretation of results from experimental as well as observational studies, and the practical realities of health-related studies and their analysis. The primary goal is to prepare the students for independent careers as biostatisticians in any professional health-related or biomedical environment, such as in medical research institutes, universities, public health or government agencies and private health-industries or organizations.

Financial support may be available for qualified students. The Biostatistics program offers support through research and teaching assistantships as well as fellowships. The level of scholarship can vary by the type of assignment and may include a tuition remission, health insurance coverage as well as a generous stipend. Support is limited and highly competitive. Student financial support is typically awarded to full-time students for up to 5 years granted satisfactory progress and good standing is maintained. Please contact - [info-biostat@iupui.edu](mailto:info-biostat@iupui.edu) for more information. Additional information regarding specific policies of the Indiana University Graduate School can be found in

## Program Requirements

### Program Competencies

1. Acquire biostatistical knowledge and interpersonal skills needed to collaborate with health science investigators.
2. Develop an appropriate statistical analysis plan in order to address the hypothesis arising from biomedical research.
3. Demonstrate ability to recognize methodological problems in biomedical research.
4. Derive improved methods as solutions to methodologic problems.

### Curriculum

All PhD candidates must satisfactorily complete a minimum of 90 credits that includes required Biostatistics Core courses, Statistics Electives courses, a Doctoral Minor, Electives courses, Independent Studies and directed dissertation research.

### Required Coursework

Every student in the program is required to complete the following 8 courses:

- STAT 51200 Applied Regression Analysis
- STAT 51900 Introduction to Probability \*
- STAT 52500 Generalized Linear Model \*
- STAT 52800 Mathematical Statistics I \*
- STAT 53600 Introduction to Survival Analysis \*
- PBHL-B 574 Applied Longitudinal Data Analysis \*
- PBHL-B 582 Introduction to Clinical Trials
- PBHL-B 584 Biostatistics Practicum

and any 4 of the following for a total 36 credits:

- STAT 61900 Probability Theory
- STAT 62800 Advanced Statistical Inference
- PBHL-B 616 Advanced Statistical Computing
- PBHL-B 626 Advanced Likelihood Theory
- PBHL-B 636 Advanced Survival Analysis
- PBHL-B 646 Advanced Generalized Linear Models
- PBHL-B 656 Advanced Longitudinal Data Analysis

(\* indicates the Program's Core Courses)

Every student in the program is also required to complete a fundamental epidemiology course and introductory courses in public health for a total of 6 credits:

- PBHL-E517 Fundamental of Epidemiology (3 credit hours)
- PBHL P510 Introduction to Public Health (3 credit hours)

In addition, every student must take an additional 6 credit hours of statistics/biostatistics courses. At least three credit hours of these electives must be taken from 600-level courses or above. The remaining 42 credit hours will be taken as additional coursework in a minor area (12 credits), further elective courses, independent studies, and directed dissertation research (at minimum 24 credits).

The PhD in Biostatistics is a 90-credit hours for the biostatistics program. The minor may be completed in any area related to the health and life sciences disciplines, such as pharmacology and toxicology, epidemiology, genetics, biology, physiology, bioinformatics, health policy, translational science and health economics, among many others.

## Qualifying Examinations

The Qualifying Examinations consist of two components, a written examination component and an oral examination component (often referred to as preliminary examination). All students must successfully complete these two parts prior to being admitted to Candidacy.

### 1) Qualifying examinations - written (required):

Students must pass an initial written qualifying examination in the areas of Probability, Mathematical Statistics, Generalized Linear Models, Longitudinal Data Analysis and Survival Analysis. The written qualifying examination is offered once a year during a week long- Qualifier Exam Session the week before classes start in August and is administered in two sections – Theoretical Biostatistics and Applied Biostatistics.

#### The format of the written qualifying exam

- The Theory Exam is an in-class exam that covers the materials from the five Ph.D core courses: Stat 51900, Stat 52800, Stat 52500, Stat 53600 and PBHL –B574
- The Applied Exam is a week-long take-home exam. Students will have access to a dataset from a real biomedical study with detailed explanation on study design and variables included in the dataset. Students will be asked to perform relevant data analysis to address several scientific questions. To pass the exam, students need to submit a technical report that contains five sections: introduction, statistical method and data analysis, results, discussion and reference, and successfully defend their work orally before the Exam Committee made by three faculty members.

The preparation and the administration of the written part of the qualifying examination is overseen by the Program Graduate Examination Committee. Students are expected to have completed and passed both sections of the written qualifying examination on or before their written qualifier deadline.

#### **Deadline for completion of the written qualifying part**

The deadline for having successfully completed the qualifying examination is three years for incoming full-time and part-time students with a master's degree and four years for full-time or part-time students entering the program without a master's degree. Students have at most two attempts to successfully



complete each part of the examination.

Financially supported full-time students who enter the program with a master's degree or equivalent are expected to have successfully completed the qualifying examination by August at the end of their second year; financially supported full-time students who enter the program without a master's degree are expected to complete the qualifying examination by August at the end of their third year. The department will not guarantee funding for full-time students beyond this period.

If students do not pass both sections of the examination by the above deadline, they will be terminated from the program.

A student will have at most two attempts to pass the written qualifying examinations. The first attempt must include the entire written examination, i.e. both the Theoretical and Applied sections. If one or both sections are not passed on the first attempt, then one additional attempt, on or before the deadline, is allowed. During the second attempt, the student may only sit for the section(s) not passed in the first attempt. A student's first attempt at the qualifying examination will result in one of the following three outcomes:

- a. Pass Both Written Sections: The student has demonstrated fundamental understanding of the core material and the examination committee believes he/she will be successful in completing the Ph.D. program.
- b. Pass One Section: The student has demonstrated fundamental understanding of one section, but lacks adequate understanding of the other section. The student must sit for the section not passed at a future examination session.
- c. Fail: The student has failed to demonstrate an adequate understanding of the material from the core courses and thus fails the examination. The student must sit for both sections at a future written examination session.

A student's second and final attempt at the written qualifying examination will result in one of the following two outcomes:

- a. Pass: The student has demonstrated fundamental understanding of the core material and the examination committee believes he/she will be successful in completing the Ph.D. program.
- b. Fail: The student has failed to demonstrate an adequate understanding of the material from the core courses and thus fails the examination, with privilege to continue in the program terminated.

Students who fail any part of the written qualifying examinations will be able to review their graded examinations and, if they choose to appeal the grade(s), will be allowed to do so within 30 days of receiving the grades. The program Directors will not accept for consideration any appeal beyond this one month period.

## II) Qualifying examinations - oral (required):

A student becomes eligible to take the oral part of the qualifying examinations after successfully passing the written qualifying examination. This examination consists of an oral presentation on an advanced research topic suggested by the student to the student's advisory committee, which

administers this examination. In preparation to this examination, the student must provide the committee with a paper (10 – 15 pages) outlining the advanced topic to be covered, clearly indicating the scope and depth of the planned research along with relevant references. In the examination, the student is expected to display an in-depth understanding of the chosen subject matter. The committee may ask the student questions which normally will be directed to the subject matter of the research but may, by natural extension, also cover any other relevant topic including the minor subject.

The oral qualifying examinations will normally be completed at the end of all required course work, before the student embarks on the dissertation. The student must pass this examination (as well as any remaining minor area requirements) before passing on to candidacy.

## Advising

**Academic Advisor:** Students admitted to the program will be assigned an initial academic advisor who may be consulted for advice on all the academic issues and the program. The Program Directors are also available for general consultation. The student may change advisor upon the consent of the new faculty member and the approval of the Program Directors who will also inform the original advisor of this switch. This academic advisor is the chair of the student's advisory committee.

**Advisory Committee:** Within one year of admission to the program, each student shall be assigned, in consultation with the Directors of the Program, an academic advisory committee. This committee will consist of at least two members of the program's graduate training faculty), the student's academic advisor who will serve as its chair and at least one member from another area. This committee will guide the student's doctoral program, will approve the student's plan of study and will oversee and conduct the oral qualifying exam in the student's research area, and the designation of a suitable research committee (and the advisory committee henceforth is abolished).

**Ph.D. Advisor and Research Committee:** Upon the successful passing of the oral qualifying examination, the student should identify, in consultation with the advisory committee, a professor from the program's graduate faculty who will serve as the student's primary research advisor and will direct the student's dissertation and will chair this committee. This advisor along with least two appointed members of the program's graduate training faculty, and at least one graduate faculty from outside of the program—will constitute the student research committee. The committee may consist of the same members as the student's original advisory committee, but is not required to. This committee has the responsibility of supervising the research, reading the dissertation, and conducting the Ph.D. thesis defense final examination.

## Minor Area

In addition to the 48 credits of formal statistics/biostatistics coursework, the student must complete 12 credits of coursework as minor in an area related to any life and health sciences disciplines or disciplines that will enhance their biostatistics research skill. The minor may be obtained in areas such as pharmacology and toxicology, epidemiology, genetics, biology, physiology, bioinformatics, health policy, translational science, health economics, computer science, and life sciences among many others, and it must be approved by the student's advisory committee. Minors are structured by the minor department and requirements differ and some

may include a Minor Area examination. Most minors have a requirement of 12 credits. Examples of Plans of Study for a minor area can be found in Appendix A.

## Admission to Candidacy

Following the passing of the oral qualifying examination (and minor area examination, if applicable) and the completion of all required coursework, the student's advisory committee will nominate the student to candidacy. Upon approval by the dean of the IU Graduate School, the student will be admitted to candidacy.

## Dissertation

The remaining credit hours, 30, to total 90 will contain at least 24 hours guided research dissertation hours. After passing the oral part of the qualifying examination (and the minor area examination, if applicable), and the formation of the Research Committee, the student's work on the dissertation may officially begin. The dissertation authored by the student, must contain original and publishable statistical/biostatistical research originating from and with application to well-defined life and health related problems. After consultation with and approval by the student's advisor and research committee, the student will submit to the University Graduate School (at the IUPUI Graduate Office, UL 1170) a one- or two-page prospectus of the dissertation research. If the proposed research involves human subjects, animals, biohazards, or radiation, approval from the appropriate university committee must also be obtained. The dissertation prospectus must be approved by the University Graduate School at least six months before the defense of the dissertation.

The student must submit the completed written dissertation to the research committee for reading and evaluation and subsequently will have to present and defend it orally in a public forum before the committee. The dissertation must meet departmental and University format requirements. Consult the Guide to the Preparation of Theses and Dissertations ("The Format Guide") - for use by students admitted to IU Graduate School Programs located at IUPUI. The Format Guide is available at the [IUPUI Graduate Office website](#).

## Dissertation of Three Publishable Papers

Rather than writing a conventional dissertation, students may elect to write a dissertation that consists of three related papers of publishable quality. The research committee must approve the election of the three-paper option. There are advantages and disadvantages to a three paper dissertation. Often, three paper dissertations can be submitted and published more efficiently because they are already organized and formatted as manuscripts for submission to a journal. However, three paper dissertations can also be more challenging to complete because they may cover more research questions and analyses than a conventional dissertation.

The table below describes potential ways to format a conventional dissertation versus a three papers dissertation. However, the exact format and content of a dissertation will be determined by the dissertation committee in collaboration with the student. Additional information on these options can be found at:

<https://fsph.iupui.edu/student-portal/forms.html>

### Comparing a Conventional Dissertation to a Three Paper Dissertation

	Conventional Dissertation	Three Papers Dissertation
Introduction and Outline of the	√	
Introduction to the Overall Topic		Include the logical link between the three papers
Conceptual or Theoretical Framework	√	√
Literature Review	√	Included in three papers
Methodology	√	Included in three papers
Results (Research Findings)	√	Included in three papers
Three separate, publishable papers of normal journal article length related to the overall theme		<ul style="list-style-type: none"> <li>• First Paper</li> <li>• Second Paper</li> <li>• Third Paper</li> </ul>
Summary, Interpretations, Conclusions, Recommendations for Policy	√	Concluding scholarly discussion of the implications of the integrated findings
Resources	√	Included in three papers
Appendices	optional	optional

### Final Examination (Defense)

Once the dissertation has been completed, the student must present and defend the contents of the dissertation or thesis before the Research Committee in an open colloquium or seminar. As an initial step in scheduling the defense the student should submit an unbound copy of the dissertation to each member of the research committee. All members of the research committee should read the dissertation in its entirety before attending the defense. Thirty days prior to the scheduled defense of the dissertation, the candidate must submit to the University Graduate School a one-page announcement of the final examination. This announcement must follow a format available in the Guide to the Preparation of Theses and Dissertations (“The Format Guide”) - for use by students admitted to IU Graduate School Programs located at IUPUI. The Format Guide is available at the [IUPUI Graduate Office website](#). The announcement should contain, among other things, a summary of the dissertation (not less than 150 words) which is informative and contains a brief statement of the principal results and conclusions. Once the final examination (defense) has been scheduled, the announced time and place of the defense must not be changed without the approval of the dean.

At the conclusion of the public presentation of the defense, the Research Committee may convene to an executive session with and without the student to further discuss the dissertation and its defense by the student. The Research Committee will conclude its deliberation with a vote on the outcome of the defense and examination (pass, conditional pass, deferred decision, or fail). The dissertation is finally approved when it is received by the University Graduate School with an acceptance page signed by a majority of the members of the research committee.

## Dissertation Submission

After passing the defense and prior to final submission, all students will meet with the IUPUI Graduate Office for a format review. Following acceptance by the research committee, the dissertation is submitted to the University Graduate School (at the IUPUI Graduate Office, UN 207). Please carefully follow the “Format Guide” - available at the [IUPUI Graduate Office website](#).

## General Requirements and Procedures

### Satisfactory Progress and Termination

Students must maintain satisfactory progress towards their degree objective to ensure their continued good standing in the program and financial support. The minimum criteria for satisfactory progress are a GPA of 3.00 or above, satisfactory research progress, and completion of other degree requirements (written and oral qualifying examinations, minor area requirements, candidacy requirements). If at any time the GPA drops below 3.0, the student will be placed on academic probation. Financial support may be rescinded if the GPA is not increased to 3.0 in a reasonable time period. Further, if the student’s GPA in two consecutive semesters is below 3.0 the student’s standing in the Biostatistics PhD program will be terminated. In addition, credit towards the doctoral degree will not be given for any course in which the student obtains a grade of “B-” or below. This includes students’ work on their research. If, in the opinion of the research committee, satisfactory research progress is not being made, a meeting of the student's research committee may be convened. This meeting will include a brief presentation by the student on the work accomplished up to that point, and/or a discussion concerning the problems which have hampered progress. If the consensus of the committee is that the student needs to show improvement, he/she will have 60 days to demonstrate a change in research performance. At the end of this time, financial support may be discontinued, if applicable.

If a student finds it necessary to withdraw from the graduate program, then he/she should provide as much notice as possible—especially if supported financially by the program. In the case of teaching or research assistants, students are expected to complete the semester once it has begun. Similarly, the program will provide a student with as much advance notice as possible if the student is dropped from the program for reasons of poor performance. In addition, the student must maintain continual enrollment (at least 1.0 credit hour per fall and spring semesters) in the program after passing the qualifying examination, not including summer sessions. The student must also be registered during the semester of graduation.

### Annual Reviews

All students in the program are required to file by June 1<sup>st</sup> of each year, an annual report with their advisor and advisory or research committee. The annual report will cover all of the student’s academic activities in the previous year and will typically include summaries of all course work, teaching or service activities and research progress. This annual report will be an integral part of the annual review of the student’s progress conducted by the Advisor and Directors which will provide written feedback to the student, including any recommendations or required actions. The feedback will be signed by the student’s committee chair as well as by the Directors of the Program.

## Transfer Coursework

Candidates for the Ph.D. degree may petition for up to 30 hours of graduate credit from other institutions. Students submit the [Petition for Approval of Transfer Course](#) form in order to initiate an appeal process and receive approval to apply a course completed at a different institution towards their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested, as needed.

## Expired Coursework

Normally, a course may not apply towards degree requirements if was completed more than seven years prior to the passing of the preliminary examination. Students submit the [Petition for Course Revalidation](#) form in order to initiate an appeal process and receive approval to apply an expired course towards their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested, as needed.

## Elective Coursework

Students submit the [Petition for Approval of Elective Course](#) form in order to initiate an appeal process and receive approval to apply a course completed in a different department towards their degree. Students must provide, at minimum, the syllabus for the course under evaluation. Other documentation may be requested, as needed.

## Time Limits for Completion

The student must receive acceptance of his or her dissertation and must submit a copy to the University Graduate School within seven years after passing the oral qualifying examination, and complete the degree in entirety within ten years from time of admission into the program. Failure to meet this requirement will result in the termination of candidacy and of the student's enrollment in the degree program. Any student whose candidacy lapses will be required to apply to the University Graduate School for reinstatement before further work toward the degree may be done formally. To be reinstated to candidacy in the University Graduate School, the student must: (1) obtain the permission of the departmental chairperson; (2) fulfill the departmental requirements in effect at the time of the application for reinstatement; (3) pass the current Ph.D. qualifying examination or its equivalent (defined in advance); and (4) request reinstatement to candidacy from the dean. Such reinstatement, if granted, will be valid for a period of three years, during which time the candidate must enroll each semester for a minimum of one credit.

## Financial Assistance

The Program offers financial support to qualified students in the form of Teaching or Research Assistantships (TA, & RA) or in the form of University Fellowships. In addition, supported students receive a fee scholarship, which remits most of the tuition costs and payment of the mandatory student health insurance premium. Student's financial support may be renewed for up to ten semesters, provided that the recipient is making satisfactory progress toward the degree and is discharging the teaching or research assignment in a quality and professional manner. Because the objective of the financial support of the stipend and fee scholarship is to provide the student with the opportunity to devote a full-time effort to their studies and research responsibilities it is

expected that recipients will not hold any outside employment.

## Teaching Assistantships

To qualify for a Teaching Assistantship, foreign students must take the SPEAK (oral English proficiency) exam administered by the IUPUI ESL program. Students who do not pass the exam would want to enroll in G020, *Communication Skills for TAs*, before retaking this exam.

Each semester the responsibilities of a teaching assistant will involve teaching related assignments (instruction, recitation, tutoring and or grading) of up to 20 hours per week during the Fall and Spring Semesters plus one if the six-weeks summer sessions. Vacation time to those receiving such assignments, is dictated by the academic calendar and it is not to exceed 4 weeks per academic year.

Students whose performance as a TA is unsatisfactory will be notified; if, at the end of the following semester, sufficient improvement has not been made, support will be terminated.

## Research Assistantships

Some faculty of the program may have research grants that include 12-month stipend, tuition remission, and fees for graduate students assigned to work on the funded research project. The availability of research assistantships will vary each year among the investigators and the funded research projects in the departments. The awards are usually not made by the Department but rather are arranged with the major professor serving as a PI or the leading investigator of the funded research project.

Students supported in this manner are expected to devote up to 20 hours per week to their assigned responsibilities in the funded research project(s) during the year. Vacation time to those receiving such assignments, must be pre-arranged with the RA supervisor and it is not to exceed 4 weeks per year.

Students whose performance as RA on the assigned funded research project(s) is insufficient will be notified and given one semester to correct the deficiency, or support will be terminated.

## University Fellowships

Ph.D. students with outstanding credentials may receive competitive, first year IUPUI Fellowships. Stipends may vary from the usual Program's support levels but students are guaranteed these levels of stipend as a minimum, after the first year, contingent on their satisfactory performance. All first year Fellowships come with fee remission and graduate student health insurance.

## Resources

### List of Required Forms

Throughout the period of enrollment in the Ph.D. program, specific forms must be filled out at certain points in the program. It is the student's responsibility to complete the forms, as required. Below is a list of all required forms with an explanation. All forms are available at the [IUPUI](#)

[Graduate Office website](#) and must be filed with the Graduate Programs Coordinator.

1. Appointment of Advisory Committee Form

Within one year of admission, each student must select an advisory committee, consisting of at least two members of the program's graduate training faculty, and at least one member from outside the program, preferably from the student's minor area (if already identified). The student should select at least one member to be the primary academic advisor.

2. Nomination of Candidacy Form

Following the passing of the oral qualifying examination and the completion of all required coursework, the student's advisory committee will nominate the student to candidacy. Upon approval of the dean of the IU Graduate School, the student will be admitted to candidacy.

3. Nomination of Research Committee Form

The research committee is selected when the student successfully concluded the oral qualifying examination and consists of at least four faculty members, including the student's advisor and at least one member from outside the program faculty. The committee may consist of the same members as the student's original advisory committee, but is not required to. The nomination form is filed after successful completion of the oral exam, and includes a one- to two-page summary of the proposed dissertation. The signatures of the faculty members on this form indicate that they agree to supervise the research.

4. PhD Minor Form

This form is filed as soon as a minor area has been agreed upon, and must be signed by the student's major advisor and the faculty member selected to be the student's minor advisor. Should the coursework selected for the minor change, a new form must be filed.

5. Change of Research Committee Member Form

The membership of the research committee may be changed. However, the final version of the research committee must be fixed no later than six months prior to the defense.

6. Announcement of Dissertation Defense

Thirty days prior to the scheduled defense of the dissertation, the candidate must submit to the University Graduate School (at the IUPUI Graduate Office, UN 207) a one-page announcement of the final examination. This announcement must follow Guide to the Preparation of Theses and Dissertations ("The Format Guide") - for use by students admitted to IU Graduate School Programs located at IUPUI. The Format Guide is available at the [IUPUI Graduate Office website](#). The announcement contains, among



other things, a summary of the dissertation (not less than 150 words) which is informative and contains a brief statement of the principal results and conclusions. Once the final examination has been scheduled, the announced time and place of the defense must not be changed without the approval of the dean.

## Campus and Department Policies

### Academic Integrity and Avoidance of Plagiarism

Students in the Biostatistics PhD Program are expected to conduct themselves as professionals and avoid acts of plagiarism, cheating, or other forms of academic dishonesty. As outlined in the IUPUI Code of Students Rights, Responsibilities and Conduct, “the procedure for imposing academic and disciplinary sanctions are designed to provide students with due process and procedural fairness, to ensure equal protection for all students, and to provide for the imposition of similar sanctions for similar acts of misconduct. At the same time, the procedures reflect the need to be concerned about the individual student involved in a particular case. The procedures therefore provide that the imposition of disciplinary sanctions must also be based upon a consideration of all circumstances in a particular case, including a student’s prior record of misconduct, if any.”

If a student is found to have participated in an act of academic misconduct, it will be dealt with immediately, according to the following steps:

Step 1: The instructor will notify the student in writing (via email or hard copy) of the offense and penalty. Penalties can include, but are not limited to, the following:

- Warning
- Lower grade for the assignment in which the infraction occurred
- Failing grade for the assignment in which the infraction occurred
- Failing grade for the course
- Recommendation for suspension or dismissal from the school.

Step 2: The student will be invited to meet with the instructor to discuss the situation in person as soon as possible. A third party from the Fairbanks School of Public Health will be in attendance at this meeting. The student will have an opportunity to share his/her comments and respond to the allegation. If the instructor concludes that the student did commit an act of misconduct, the instructor will complete the *Academic Misconduct Reporting Form*, with signatures, and submit it to the student, the Department Chair and the Associate Dean for Education and Training.

Step 3: The outcome of the meeting will be documented in writing within five business days with copies sent to the student, Department Chair, and Associate Dean for Education and Training. Acts of misconduct that warrant a recommendation for suspension or dismissal from the school will go before the Academic Progress Review Committee for deliberation and decision. If the student disagrees with the decision of the instructor or the Academic Progress Review Committee, the

student has the right to appeal the decision to the Associate Dean for Education and Training following the procedures and time period outlined in the IUPUI Code of Student Rights, Responsibilities and Conduct, <http://studentaffairs.iupui.edu/student-rights/student-code/disciplinary.shtml>.

## Academic Probation

In order to be in good academic standing, the Biostatistics PhD Program requires students to maintain a minimum 3.0 cumulative GPA. Students will be placed on academic probation if their semester and or cumulative GPS falls below a 3.0. Students on academic probation are given one semester to bring their cumulative GPA to a 3.0 or higher. If students are unable to bring their GPA up to a 3.0, their academic standing will be assessed by the Biostatistics PhD Academic Progress Review Committee, and a decision will be made as to whether or not they may continue in the program.

## Application for Graduation

Students are required to notify Student Services of their pending graduation by completing the Application for Graduation Form found on the Fairbanks School of Public Health website. The Office of Student Services will notify students of application deadlines in advance via email.

## Change of Address

It is important to keep your address up-to-date with the school and the university. This will ensure the prompt delivery of school-related information. Please note that official university mail for students on the IUPUI campus is sent to the student's current address. To update your address, please complete a change-of-address using One.IU.edu (<https://one.iu.edu>) and notify PhD Student Services.

## Course Authorization

Biostatistics PhD students need authorization to register for the following:

- Topics in Biostatistical Methods (PBHL B698)
- Biostatistics Doctoral Dissertation Research (PBHL B800)

Please contact the PhD Student Services to request course authorization. Students should register for B698 under the BIOS PhD Advisor and B699 under their Thesis/Research director.

## Course Transfer

In some cases, a student may be eligible to transfer coursework/credit hours earned in another degree program into the Health Policy and Management PhD Program. *The HPM PhD program only allows transfer of credit for the Public Health Foundations courses, which consist of 9 total credit hours.* Also, students are encouraged to consult with their advisory committee as to whether they would benefit most from transferring these credits versus substituting alternative coursework.

The student should complete a Request for Transfer form, Obtained from PhD Student Services, and attach a copy of the syllabus for the course to be transferred, along with other supporting documentation (e.g., examinations, papers). Transfer Requests should be submitted to the PhD Student Services Representative.

The course director and student advisor will evaluate the transfer request. They will consider the following criteria when making the decision:

- The course in question must be a graduate course in which the student received at least a B grade (no B-'s will be accepted).
- The topics covered must be similar to the topics covered in the Biostatistics PhD course as demonstrated by a comparison of the syllabi and other materials from the two courses, and supporting materials.
- The Course objectives must be similar to the objectives covered in the Biostatistics PhD course, as demonstrated by the syllabus.

When course transfer decisions have been made, the student will be notified in writing.

### Course Revalidation Policy

Normally, courses taken prior to enrolling in the Biostatistics PhD program will not be counted toward degree requirements if the credit was earned more than seven years prior to passing the qualifying examination. The student's advisor may, however, recommend to the Biostatistics PhD Academic Progress Review Committee that coursework taken beyond this time frame be revalidated if it can be demonstrated that the student's knowledge of course material remains current.

Currency of knowledge may be demonstrated by passing a more advanced Biostatistics PhD course in the same subject area, serving as a teaching assistant or instructor in a comparable or more advanced course, or publishing scholarly research demonstrating substantial knowledge of the content and fundamental principles of the course. Professional experience may also be used to justify course revalidation.

Students will work with their advisor to create a revalidation plan and complete the appropriate IUPUI Graduate Office form. Forms can be obtained from PhD Student Services. Each course under consideration for revalidation must be justified separately.

### Leave of Absence Policy

Generally, a leave of absence will not be granted to a student who has completed less than 7 credit hours in good academic standing. A non-medical leave of absence will not be granted if the request is submitted within two weeks of the beginning of final examinations at the end of a semester. The maximum cumulative leave of absence for personal or health problems may not exceed 18 months. No student may be granted a leave of absence solely because of poor academic performance.

To request a leave of absence, students must submit the PhD Leave of Absence Request Form (available on the FSPH website) to the Biostatistics Faculty Advisor. Leave of Absence requests

must be presented, in writing, either in hard copy or by email within two weeks of student's notification to take leave of absence. Written support from the student's advisor confirming the need for a leave of absence will be emailed to the Graduate Office and a copy must be documented in the student's file.

A student called to active duty may qualify for an incomplete in his or her coursework, provided that all the above criteria have been met. For more information please see the Office for Veterans and Military Personnel website at <http://veterans.iupui.edu/>.

### Pass/Fail Option

Biostatistics PhD students may not elect to take a graded course using the pass/fail options to fulfill part of the required 90 credits.

### Student Code of Conduct

Every Indiana University student is responsible for reading and understanding this Statement, as well as other expectations identified by individual schools or organizations relevant to an academic major, professional field, or on-campus residence. This Code of Student Rights, Responsibilities, and Conduct (<http://studentaffairs.iupui.edu/student-rights/student-code/>) is intended to identify basic rights, responsibilities, and expectation of all students and student groups to serve as a guide for the overall student experience at Indiana University.

## Campus and School Resources

### Adaptive Education Services (AES)

The Office of Adaptive Educational Services actively works to make campus life and learning accessible for students with disabilities. Sign language interpreters, note takers, readers, exam proctors, and classroom accommodations are services offered by Adaptive Educational Services. For more information, call 317-274-3241 or visit their website at <http://aes.iupui.edu/>.

### Bookstore

After you register, visit the bookstore website to view a complete textbook listing. Books are typically listed two weeks prior to the beginning of the semester.

Barnes and Noble IUPUI Bookstore

IUPUI Campus Center, 1<sup>st</sup> floor

420 University Blvd.

- Ordering Textbooks Online: To order textbooks online, visit the Barnes & Noble at IUPUI Bookstore website (<http://iupui.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=36052&catalogId=10001&langId=-1>). You can search for your books using the customized textbook listing, add them to your cart, pay for your books, and have them shipped to your home.
- Find Textbooks (<http://iupui.bncollege.com/webapp/wcs/stores/servlet/TBWizardView?catalogId=10001&langId=-1&storeId=36052>)
- Textbook Rentals (<http://iupui.bncollege.com/webapp/wcs/stores/servlet/BNCBRentalView?catalogId=10001&langId=-1&storeId=36052>)
- Sell Textbooks Back (<http://iupui.bncollege.com/webapp/wcs/stores/servlet/BNCBSellBackTextbookView?catalogId=10001&langId=-1&storeId=36052>)
- Digital content ([http://iupui.bncollege.com/webapp/wcs/stores/servlet/BNCB\\_DigitalBooks?catalogId=10001&langId=-1&storeId=36052](http://iupui.bncollege.com/webapp/wcs/stores/servlet/BNCB_DigitalBooks?catalogId=10001&langId=-1&storeId=36052))
- Campus Center Bookstore School Hours
  - Monday – Thursday 8:00 AM-8:00 PM
  - Friday – 8:00 AM-7:00 PM
  - Saturday – 8:00 AM-5:00 PM
  - Sunday – 12:00 PM-5:00 PM
- Campus Center Bookstore Summer Hours
  - Monday – Friday 8:00 AM-6:00 PM
  - Saturday – 8:00 AM-5:00 PM
  - Sunday - Closed

## Bursar Office

For all fee and fee payment information please go to the Office of the Bursar at <http://www.bursar.iupui.edu/>. Information regarding such topics as refunds, billing due dates, how to pay bill, pay options, master fee rate listings, tuition/fee estimation and other services software can be found on their website.

### Refund Periods-Regular Semester

100% during 1<sup>st</sup> week of classes

75% during 2<sup>nd</sup> week of classes

### Drop/Add-Schedule Adjustment Periods

Course deleted from record

Withdrawal with a "W", no signatures required.

50% during 3 <sup>rd</sup> week of classes	Withdrawal with a “W”, advisor signature required.
25% during 4 <sup>th</sup> week of classes	Withdrawal with a “W”, advisor signature required.
0% during 5 <sup>th</sup> – 8 <sup>th</sup> week of classes	Withdrawal with a “W”, advisor signature required.
0% during 9 <sup>th</sup> – 12 <sup>th</sup> week of classes	Withdrawal with a “W” or “F”, professor and advisor signature required.
0% during 13 <sup>th</sup> – end of semester	Withdrawal with a “W” or “F”, professor, advisor, and Dean signatures are required.

## Campus Computer Labs

Printing at IUPUI is easy! You can release your print jobs with a simple swipe of your JagTag. Below is general information about printing on campus. For more information about printing at IUPUI, visit <http://JagTag.iupui.edu/Students.asp?content=Printing-on-Campus>.

Use your print allocation in these locations:

Informatics and Communications Technology complex (ICTC) 131 (24 hour computer lab)

University Library (UL)

Business/SPEA (BS) 3000

Campus Center (CE) (Theater Level and 2<sup>nd</sup> floor near the elevators)

Education/Social Work (ES) Consortium (Rooms 2116, 2117, 2119, 2121, and 2124)

Engineering/Science & Technology (SL)

Science Building (LD)

Eskenazi Hall (HR)

Nursing School (NU)

IUPUI has a pay-for-print policy for **graduate students**. You’ll need to make sure you have money in your regular JagTag Account to pay for and release your print jobs. Visit Deposit Options at <https://JagTag.iupui.edu/Students.asp?content=Deposit-Options> to make a deposit.

## Campus Map

IUPUI’s official interactive online campus map <http://map.iupui.edu/>.

## Canvas

Indiana University has selected Canvas as its next learning management system. To learn more, visit the Canvas website at <https://canvas.iu.edu/lms-prd/app>.

## Counseling and Psychological Services (CAPS)

Counseling and Psychological Services (CAPS) <http://studentaffairs.iupui.edu/health-wellness/counseling-psychology/index.shtml> provides direct professional psychological services including crisis response, counseling, assessment, and referral that are accessible to, and provide for, the general well-being of all IUPUI students. Each student is eligible for 6 free individual counseling sessions while at IUPUI, after a small assessment fee is paid; there is no charge for group counseling sessions once the assessment fee is paid.

## Email

Email is considered an appropriate mechanism for official communication from Indiana University to IU students. The University reserves the right to send official communications to students by email with the full expectation that students will receive email and read these messages in a timely fashion.

Official university email accounts are available for all students once they have been admitted to the University. Official university communications will be sent to the students' official university email addresses. For IUPUI, this is the @iupui.edu, @imail.iu.edu, or @umail.iu.edu address.

Students are expected to check their email on a frequent and consistent basis in order to keep abreast of university-related communications. In addition to their university email account, students should also check for course-related email within Canvas. The same user ID and password (passphrase) are used for Canvas as the university email system (see more information below).

Students who choose to have their email forwarded to a private (non-IUPUI) email address outside the official university network address, do so at their own risk. The University is not responsible for any difficulties that may occur in the proper or timely transmission or access of email forwarded to any unofficial email address, and any such problems will not absolve students of their responsibility to know and comply with the content of official communications sent to students' official IU email addresses. Instructions on forwarding email may be found at:

<https://one.iu.edu/collection/iu/access-management>.

- [Need Help with Email, Canvas or One.IU Account?](#)

If you are having problems with the Account management Service or need assistance, please contact your campus support center or help desk at: 317-274-4357 (274-HELP).

Phone support is available 24 hours a day, seven days a week. You can also email the Help Desk at [ithelp@iu.edu](mailto:ithelp@iu.edu).

## Financial Aid Office

The Office of Student Financial Aid Services administers federal, state, university, and private funds in the form of scholarships, grants, loans, and work-study part-time employment. The Office of the Bursar disburses all financial aid, except work-study. Work-study students receive paychecks biweekly.

The Office of Student Financial Services <http://www.iupui.edu/~finaid/> is located in the IUPUI Campus Center room 250A. Students can contact the office by phone 317-274-4162 or FAX to 317-

274-5930. Telephone advising hours run from 8:30 am – 5:00 pm, Monday through Friday. Students can also email the office at [finaid@iupui.edu](mailto:finaid@iupui.edu), for more information and resources see the following (<http://www.iupui.edu/~finaid/office/contact/contactinfo.html>).

## IU Ware

IU Ware <http://iuware.iu.edu/Windows> is a software distribution service for Indiana University students, faculty, and staff.

IU Ware offers a wide variety of software packages at no charge, including site-licensed products from Adobe, Microsoft, Symantec, Thomson Reuters, and others. Software packages include programs for reading email and web browsing, as well as antivirus and office applications. The University pays for the relevant licenses through agreements with vendors, allowing students, faculty, and staff to use the programs available through IUWare free of charge. The IUWare server is regularly updated, and so patches and upgrades for IU-supported software are consistently available.

## Libraries

Your gateway to the world's knowledge.

No matter what kind of degree you are seeking at IUPUI, you'll have access to a library (<http://ulib.iupui.edu/>) that offers exactly what you need when you need it.

### University Library Reference and Service Desk: 317-274-0469

Monday – Thursday	7:30 am – Midnight
Friday	7:30 am – 9:00 pm
Saturday	8:00 am – 6:00 pm
Sunday	10:00 am – Midnight

### Ruth Lilly Medical Library: 317-274-7182

Monday – Friday	7:00 am – 9:00 pm
Saturday	8:30 am – 9:00 pm
Sunday	12:00 pm – 9:00 pm

### Dental School Library: 317-274-7204

Monday – Thursday	7:30 am – 10:00 pm
Friday	7:30 am – 5:00 pm
Saturday	9:00 am – 4:30 pm
Sunday	1:00 pm – 5:00 pm

### School of Law Library: 317-274-4028

Monday – Friday	8:00 am – 10:00 pm
Saturday	9:00 am – 5:00 pm



## One.IU

One.IU (<https://one.iu.edu/>) is Indiana University's web-based application portal that provides a common front door to online services at all IU campuses. For example, you may view your current schedule, Bursar and Financial Aid information, and your transcript through the Student Center app on One.IU. You may also change your mailing address on this system.

## Online Learning

Students who have never registered for an online course before may have the impression that online courses are less intensive and easier than face-to-face courses, *but this is not the case*. Many of our online courses require active student involvement, and assignments to be completed within a specific timeframe, etc., and should be expected to be just as challenging as face-to-face courses.

## Parking and Transportation

Parking passes are available online at Parking and Transportation Services (<http://www.parking.iupui.edu/>). Students may purchase parking permits in person at the Parking Services office on Vermont Street, 1004 W. Vermont Street, Indianapolis, IN 46202. Parking Services hours: M – F: 8:00 am – 5:00 pm. Questions can be directed to 317-274-4232.

## Public Safety Escort

If you are on campus alone at night, the IUPUI Safety Escort Service can provide someone to walk or drive you to your car or another campus destination. Call 317-274-SAFE (7233). This service only operates on University and IU Health-related campus properties.

## Registrar Office

### Academic Calendars

The Office of the Registrar maintains all academic calendars. The fall 2016 academic calendar and long term academic campus calendars can be accessed at <http://registrar.iupui.edu/>.

### Course Withdrawals

It is important for students to withdraw formally from a course in a timely fashion, whenever circumstances prevent students from completing it (or all courses in a given semester). Students who stop attending class without properly withdrawing from the class will receive a grade of F. Note that withdrawals starting in Week 13 of a regular session or Week 5 of a summer session are rarely granted. **Poor performance in a course is not grounds for a late withdrawal.** Grade replacement can be used to raise poor grades, no matter what the cause.

Students should contact their academic advisor to explore their options in the event that they need to withdraw from a course and to ensure they understand the process for withdrawing from courses correctly.

There are two types of withdrawals, depending on the timing of the withdrawal:

- A **timely withdrawal** is one that occurs during the Office of the Registrar's official withdrawal periods. These withdrawals must occur before Week 13 of class during Fall or Spring term or before Week 5 of a summer session.
- A **late withdrawal** is one that occurs after the official withdrawal periods – that is, requests to withdraw from the 13<sup>th</sup> week through the last day of classes. These withdrawals are not routine and are considered only under extraordinary circumstances. Poor performance is not grounds for a late withdrawal. Students should be prepared to substantiate reasons for late withdrawals. In the event that a request for a late course withdrawal is denied, the student may consider grade replacement to improve a low grade.

Students may not withdraw from a course after the student has completed the course requirements. Students who seek to change a course grade to a “W” after the conclusion of a course must follow the Grade Appeal procedure. Such a request is rarely granted and requires extraordinary circumstances that prevented the student from withdrawing during the normal semester. **Poor performance in a course is not grounds for seeking a grade change after the completion of a course.**

Students may use either eDrop or the paper format of these options to adjust their schedules. Instructions for eDrop are available at [http://registrar.iupui.edu/eDoc/eDrop\\_student.html](http://registrar.iupui.edu/eDoc/eDrop_student.html). Students should contact Shawne Mathis [snmathis@iu.edu](mailto:snmathis@iu.edu) or 317-278-0337 for assistance with dropping or adding a course.

### (Drop/Add) Schedule Adjustments

eDrop and eAdd starts the second week of class and ends at the end of the 8<sup>th</sup> week of class.

Any fall or spring semester drop and add request made after the first week require the approval of the student's academic advisor. Added courses after the first week also require the instructor's signature for the course the student wishes to add. Instructor signatures and the signature of the academic advisor are required for withdrawals further into the term (see also Course Withdrawal).

Students are responsible for adjusting their schedules according to the official campus procedures. Students who fail to follow the official process for dropping a course may jeopardize their academic record. Students should be aware that not attending a class and/or not paying for a class are not 'official' ways of dropping a course.

## Grading Systems and Standards

FSPH has adopted the official grading system and grade point values of Indiana University.

A+ or A	4.0	C	2.0
A-	3.7	C-	1.7
B+	3.3	D+	1.3
B	3.0	D	1.0
B-	2.7	D-	0.7
C+	2.3	F	0.0

A (4.0) Outstanding achievement. Student performance demonstrates full command of course material and evinces a high level of originality and/or creativity that far surpasses course expectation.

A-(3.7) Excellent achievement. Student performance demonstrates thorough knowledge of course materials and exceeds course expectations by completing all requirements in a superior manner.

B+(3.3) Very good work. Student performance demonstrates above-average comprehension of the course materials and exceeds course expectations on all tasks as defined in the course syllabus.

B (3.0) Good work. Student performance meets designated course expectations, demonstrates understanding of the course materials, and performs at an acceptable level.

B-(2.7) Marginal work. Student performance demonstrates incomplete understanding of course materials.

No points are assigned for the following grade symbols: I (incomplete), R (deferred), NC (no credit), NR (no report by instructor), S/F (satisfactory/failure), or W (withdrawn).

Based on these grade point values, Health Policy and Management PhD students must maintain cumulative grade average of 3.0 in their coursework each semester to remain in good standing. Courses approved as part of the student's curriculum requirements are included in the calculation of the Health Policy and Management PhD Grade Point Average (GPA).

The following policies apply:

Only courses with a grade of "B" or better will count toward graduation, although ALL grades (except ineligible course work and transfer credit) are used in computing the university GPA.

If a B- is earned in a required course, the course must be repeated until a grade of B or better is earned. All grades (including those from original and repeated courses) are used to calculate the student's GPA.

## Grade Point Average Calculation

An easy to use resource for calculating semester and projected GPA's can be found at <http://registrar.iupui.edu/gpa-calculate.html>.

## Incompletes

A grade of incomplete (I) indicates that a 'substantial portion' of the work in a course has been satisfactorily completed by the student as of the end of the semester. The incomplete can be given to a student facing a hardship such that it would be unjust to hold the student to the established time limits for completing the work. Students should contact their instructor to determine if they are eligible for the incomplete. Poor performance is not grounds for an incomplete. The Fairbanks School of Public Health follows campus guidelines, which can be accessed at <http://registrar.indiana.edu/grades/grade-values/grade-of-incomplete.shtml> in granting incompletes.

Incompletes must be removed within a time period specified by the instructor, but the time period may not exceed one year after the semester in which the student was enrolled in the course. The incomplete will revert to an 'F' if not completed within the specified timeframe.

## Missing Classes (Including Exams)

It is the student's responsibility to attend every class session. The instructor is not obligated to excuse any student from assignments/reports/exams or allow a late (or early) submission. Each student is responsible for knowing their instructors' policies for absences so the student can properly handle those days when they are ill or otherwise cannot attend class. The course syllabi include the instructors' policies for absences.

## Registration

Students register for courses via the Student Center app on One.IU. Visit <http://registrar.iupui.edu/registration-guide/> for the IUPUI Registration Guide.

Office of the Registrar		
IUPUI Campus Center Suite 250	Hours of Operation	
420 University Boulevard	Monday – Thursday:	8:00 am – 6:00pm
Indianapolis, IN 46202-5144	Friday:	9:00 am – 5:00pm
Telephone: (317) 274-1501	I Saturday:	9:00am – 12:00pm
Web address: <a href="http://registrar.iupui.edu">http://registrar.iupui.edu</a>		
E-mail: <a href="mailto:iupuireg@iupui.edu">iupuireg@iupui.edu</a>		

Students may register by computer through the first week of classes (see Schedule of Classes and Academic Information for directions). Students who have not attended IUPUI for a semester need

to call the Office of the Registrar at 317-274-1519 or Shawne Mathis, [snmathi@iu.edu](mailto:snmathi@iu.edu), or 317-278-0337 to request “Term Activation” before they can register.

Students that have been out of the IU system for two or more consecutive terms must contact Shawne Mathis, [snmathi@iu.edu](mailto:snmathi@iu.edu), or 317-278-0337.

Information on Late Registration fees can be accessed at <http://registrar.iupui.edu/registration-guide/bursar/late-fees.html>.

## Students Called to Active Duty

Any student who is a member of the U.S. armed forces or the Indiana Military Reserves and is called to active duty, specialized training, or as part of disaster relief efforts is encouraged to finish his/her coursework if at all possible. Students who cannot complete their courses have the option of withdrawing from all courses with a 100% refund of tuition and fees, if they meet certain requirements. Alternatively, student who are called to active duty may qualify for an incomplete.

The complete campus policy is available at the IUPUI Office of the Registrar at Military Withdrawal at <http://registrar.iupui.edu/registration-guide/bursar/late-fees.html>.

## Withdrawal

There are circumstances when the “W” is an appropriate grade. The “W” indicates that the student has withdrawn from the course after a portion of the semester has lapsed. A grade of “W” is automatically assigned if withdrawal occurs after the first week but before the end of the first eight weeks of a regular-length semester or during the first week of an eight-week session. After that time, it is necessary to petition for a withdrawal. If the petition is granted, the student may withdraw and a “W” will be assigned for the course. The electronic drop/add form is available at One.IU and must be completed and signed by the student, instructor, and the student’s advisor.

During the last three weeks of a fifteen week course or the last two weeks of a six week course, the petition for withdrawal from coursework is generally not granted. Such a request would only be granted in extraordinary situations.

## Emergency Withdrawal Policy at IUPUI

The policy detailing emergency withdrawal procedures at IUPUI is available at [http://registrar.iupui.edu/emergency\\_withdrawal.html](http://registrar.iupui.edu/emergency_withdrawal.html).

## Student Advocate

The IUPUI Student Advocate provides objective, impartial and confidential assistance to students, faculty and parents in situations involving students. Anyone who has a student related question, complaint, conflict or general concern may contact the Student Advocate Office as an initial,

neutral, and confidential first step toward resolution. The Student Advocate may also be able to assist students who are experiencing financial emergencies by helping them identify potential sources of emergency funding. The Student Advocate can be reached at 317-274-3699 or visit the website at <http://studentaffairs.iupui.edu/student-rights/student-advocate/contact-us.shtml>.

## Student Health Services

A student's health plays an important role in success in the academic environment. Our campus offers many resources and opportunities for students to find assistance with health concerns. All IUPUI students may receive care through Student Health at <http://studentaffairs.iupui.edu/health-wellness/student-health/services/index.shtml> on a fee for service basis. All x-rays or referrals will be the responsibility of the student.

## Student ID Cards

The IUPUI JagTag (<http://www.JagTag.iupui.edu/>) is free to all enrolled students at IUPUI. The IUPUI JagTag can be used as a campus identification, library card, print release validation card, physical education and recreation sports card, and Learning Center Cluster information card. The IUPUI JagTag may also be used by students, faculty, and staff to purchase food and drinks from campus vending machines as well as from various dining locations across campus and around town.

## Student Insurance Plans

Information on IU Student Health Insurance Plans including rates, benefits, and provisions can be located at <http://graduate.iupui.edu/support/health-insurance.shtml>.

The university does not use social security numbers as a student's primary identification number. While in most cases, students will be able to complete their business with the university through One.IU by use of a user ID and passphrase, there may be occasions when a student ID number may be required. Students may obtain their university ID numbers by viewing the Personal Information app in One.IU or by bringing photo identification to the Office of the Registrar.

## University Writing Center

The University Writing Center (UWC), <http://liberalarts.iupui.edu/uwc/>, is a service available to all IUPUI students, both graduate and undergraduate. Students can work one-on-one with experienced readers and writers to improve their writing process and receive constructive feedback on their assignments.

Students can schedule a 45-minute session online at <http://uwconline.iupui.edu/>, by stopping by one of our locations or by calling us at 317-274-2049. When scheduling online, please note that graduate students must work only with faculty consultants.

## Student Involvement

### Student Life

The Division of Student Affairs, <http://studentaffairs.iupui.edu/>, as educator and advocates, provides student-centered services, consulting, facilities, learning experiences and programs for students, faculty, staff, alumni and the community.

### Student Representation on Committees

#### PhD Program Committee

This committee reviews proposals for new courses and dual degrees, recommends actions to the Faculty Committee, discusses issues related to the academic program, and reflects on short-term and long-term planning matters (public health competencies, course development, and curriculum content). The committee meets monthly during the fall and spring semesters. A PhD student representative is appointed by the PhD Student Association to sit on this committee.

#### PhD Student Association

This association represents all students enrolled in the three FSPH PhD programs. Student leaders are actively involved in organizing professional development activities, student social gatherings, and philanthropic events. This committee meets monthly or as needed. Officers are elected annually by the PhD student body.

#### Graduate and Professional Student Organization (GPSG)

The Graduate and Professional Student Organization is the graduate student government body on the campus of IUPUI. An FSPH PhD student is appointed to represent fellow PhD students at the IUPUI GPSG monthly meetings.

## Appendix A - PhD Minors

### A1: Example of Doctoral Minor in Epidemiology

The Department of Epidemiology in the Richard M. Fairbanks School of Public Health offers a rigorous, highly focused 12-credit hour minor in Epidemiology. The field of epidemiology is growing in national and international importance, is integral to many areas of pursuit, enhances analytic and data-based management skills that are desirable for many doctoral level research projects, offers population-based research perspectives, offers skills that are of interest to the private and public sectors, and formally acknowledges the course work that doctoral students are currently taking as electives through the Department of Public Health.

The minor in Epidemiology will provide students with concepts and principles of the research, field, theory and practice of epidemiology so that they will be able to:

- Use epidemiologic methods to collect data, study, analyze, and report the patterns of disease in human populations for diverse audiences.
- Use biostatistics to analyze and report public health data.
- Understand and apply descriptive epidemiology to assess health status and the burden of disease in populations.
- Understand, apply and interpret epidemiologic research methods and findings to the practice of public health.
- Demonstrate the ability to identify and use existing sources of epidemiologic data at the local, state, national and international level.
- Understand the key components of public health surveillance and public health screening programs.
- Develop written and oral presentation based on epidemiologic analysis for both public health professionals and lay audiences.
- Demonstrate a basic level of SAS programming for data set creation, data management and data analysis.

The minor in Epidemiology offers the opportunity to draw together students from health related doctoral programs from many schools, including the Schools of Nursing, Dentistry, Medicine, Health, Physical Education and Recreation, Health and Rehabilitative Sciences, Public and Environmental Affairs, and others. Epidemiology faculty in the School of Public Health will serve as advisors for the minor.

### Curriculum:

The curriculum for the 12 credit hour minor in Epidemiology provides students with a rigorous grounding in the background and application of epidemiology.

### Required Courses for the 12-hour Minor in Epidemiology:

- E517: Fundamentals of Epidemiology
- E601: Advanced Epidemiology



Plus two courses from the following:

E563: Systematic Review and Meta-analysis  
E609: Infectious Disease Epidemiology  
E610: Chronic Disease Epidemiology  
E618: Cancer Epidemiology  
E629: Introduction to Molecular Epidemiology  
E635: Foundations of Public Health Informatics  
E715: Design & Implementation of Observational Studies  
E675: Fundamentals of Injury Epidemiology  
E765: Nutritional Epidemiology  
E780: Pharmaco-epidemiology

In addition to the 12 credit hours, students will be required to pass a Minor Area Exam based on the courses taken to assess the competencies listed above.

Satisfactory completion of the requirements for the minor in Epidemiology will be monitored by the student's minor advisor on their program/dissertation committee. Doctoral students must notify the School of Public Health before beginning their course of study for the minor. All courses must be taken within the school. No transfer credit is allowed. No credit will be awarded toward a minor in Epidemiology if students earn a Master of Public Health degree or Graduate Certificate in Public Health.

### Course Descriptions:

PBHL E563: Systematic Review and Meta-analysis in Health Sciences 3.0 cr. Fall Semester  
P: E517, B551 or B561 or permission of instructor. This course provides graduate students with an overview of fundamental concepts and methods of systematic review and meta-analysis in health sciences. Principles and methods in conducting a systematic review and meta-analysis are illustrated through case studies of public health and clinical medicine, with emphasis on training students' practical skills in the conduct of systematic reviews and meta-analyses in various public health and clinical settings.

PBHL E517: Fundamentals of Epidemiology 3.0 cr. Fall Semester  
This course introduces basic epidemiologic concepts including determinants of health and patterns of disease in populations and implications of disease processes on prevention strategies and policy development. Among the topics to be covered are measures of morbidity and mortality, sources of data, and design of research studies and clinical trials.

PBHL E601: Advanced Epidemiology 3.0 cr. Spring Semester  
This course provides students with an in-depth understanding of advanced epidemiologic concepts and an understanding of epidemiologic techniques not covered in other classes. Topics included will represent cutting edge techniques, philosophical issues and insights to appropriately conduct and interpret the findings of epidemiological studies. Prerequisite: PBHL E517 & B551 or B651

**PBHL E609: Infectious Disease Epidemiology 3.0 cr.**

This course is designed to provide a basic overview of the infectious disease process, including disease agents, transmission routes, immunity and public health significance. The course introduces principles of infectious disease epidemiology, including outbreak investigation and surveillance, using case studies as examples. Concepts on globalization of disease, microbial ecology, and disease eradication are discussed.

**PBHL E610: Chronic Disease Epidemiology 3.0 cr.**

This course examines chronic health conditions from epidemiological perspectives. Concepts include distribution, determinants, diagnosis, measures of severity, treatment modalities, surveillance measures, survival and prognosis, and quality of care measures. Research methods, prevention strategies and screening tests are presented. Clinical experts present diagnosis and treatment methods. Prerequisite: PBHL E517 or equivalent.

**PBHL E618: Cancer Epidemiology, 3.0 cr.**

P: E517. This course is an overview of cancer epidemiology, focusing on key concepts, etiologic research, applications to public health practice and major epidemiologic methods. This course is designed for students who have an interest in epidemiology.

**PBHL E629: Introduction to Public Health, 3.0 cr.**

Prereq: E517 & B551 or B561. This course will introduce students to basic genetic epidemiologic concepts, including human genetics, concepts and methodology used in genetic epidemiology. Students will gain an understanding of the role of Genetic Epidemiology in designing and interpreting studies to determine genetic roles in common diseases. Among the topics to be covered are introduction to human genetics, introduction to the field of genetic epidemiology, study designs used in genetic epidemiology, and issues in study design and analysis.

**PBHL E635: Foundations in Public Health Informatics, 3.0 cr.**

This course will introduce the application of Informatics in the Public Health field. The course will include a brief review of core public health functions, describe the current policies defining the use of informatics in public health, and outline the history of the application of informatics principles in both public health and clinical health systems.

**PBHL E715: Design & Implementation of Observational Studies (3 hrs.)**

P: E517. This course examines fundamental aspects of designing and implementing observational epidemiology studies. The focus is on developing strategies to increase the validity of the study results by using techniques to control for possible confounding factors and biases. Topics include sampling methods, sensitivity, data weighting, standardization, selection of cases and controls, matching, data collection and project management.

**PBHL E675: Fundamentals of Injury Epidemiology (3 hrs.)**

P: E517& B551. This course will introduce students to basic epidemiologic concepts of injury, both intentional and unintentional. We will discuss the burden of injury and its effect on public health, patterns of injury in populations, the use of descriptive techniques, and secondary data sources. Students will gain an understanding of the role of Injury Epidemiology in developing prevention strategies and policy. Among the topics to be covered are measures of mortality and morbidity, design and analysis of observational studies, community health assessment and program evaluation.

PBHL E765: Nutritional Epidemiology, 3.0 cr.

This course provides students with an overview of fundamental concepts and methods of nutritional epidemiology and the current state of knowledge on well-studied associations between diet and chronic diseases. Emphasis will be placed on the design, implementation, analysis, and interpretation of nutritional epidemiologic studies. : PBHL E517 & B551 or B651

PBHL E780: Pharmaco-Epidemiology, 3.0 cr.

Prereq: E517 & B551. This is an introductory pharmaco-epidemiology course. Students will learn how principles of epidemiologic methods are used to evaluate the safety, effectiveness, and utilization patterns of medical products (e.g., drugs, devices, and vaccines) in human populations, with a focus on observational studies. Related topics, including therapeutic risk management, data sources and ethical principles will be discussed. Advanced methodology, including approaches to address confounding by indication and misclassification will be introduced.

## Appendix B – List of courses

### 500 Level Courses

STAT 51200 Applied Regression (3 cr.) P: STAT 51100. Inference in simple and multiple linear regression, residual analysis, transformations, polynomial regression, model building with real data, nonlinear regression. One-way and two-way analysis of variance. Use of existing statistical computing package.

STAT 51300 Statistical Quality Control (3 cr.) P: STAT 51100. Control charts and acceptance sampling, standard acceptance plans, continuous sampling plans, sequential analysis, statistics of combinations, and some nonparametric methods. Use of existing statistical computing packages.

STAT 51400 Design of Experiments (3 cr.) P: STAT 51200. Fundamentals, completely randomized design, randomized complete blocks. Latin squares, multi-classification, factorial, nested factorial, incomplete blocks, fractional replications, confounding, general mixed factorial, split-plot and optimum design. Use of existing statistical computing packages.

PBHL–B 515 Biostatistical Practicum (1–3 cr.) P: STAT 52100; PBHL B527, B546; or consent of instructor. Real world projects in biostatistics involving participation in consulting sessions, directed reading in the literature, research ethics, design of experiments, collection of data and applications of Biostatistical methods. Detailed written and oral reports required.

STAT 51900 Introduction to Probability (3 cr.) P: MATH 26100. Algebra of sets, sample spaces, combinatorial problems, conditional probability, independence, random variables, distribution functions, characteristic functions, special discrete and continuous distributions, distributions of function of random variables, limit theorems.

STAT 52000 Time Series and Applications (3 cr.) P: STAT 51900. A first course in stationary time series with applications in engineering, economics, and physical sciences. Stationary, auto-covariance function and spectrum; integral representation of a stationary time series and interpretation; linear filtering; transfer function models; estimation of spectrum; multivariate time series; Kalman filtering, Burg's algorithm.

STAT 52100 Statistical Computing (3 cr.) P: STAT 51200. This course demonstrates how computing can be used to understand the performance of core statistical methods and introduces modern statistical methods that require computing in their application. Covers relevant programming fundamentals in at least two programming environments (e.g. SAS and R/Splus).

STAT 52200 Sampling and Survey Techniques (3 cr.) P: STAT 51200 or STAT 51100. Survey designs, simple random, stratified, cluster and systematic sampling; systems of sampling; methods of estimation, ratio and regression estimates, costs; non-response analysis; spatial sampling.

STAT 52300 Categorical Data Analysis Models (3 cr.) P: STAT 52800 or equivalent, or consent of instructor. Generating binary and categorical response data, two-way classification tables, measures of association and agreement, goodness-of-fit tests, testing independence, large sample

properties. General linear models, logistic regression, probit and extreme value models. Log-linear models in two and higher dimensions; maximum likelihood estimation, testing Goodness-of-fit, partitioning Chisquare, models for ordinal data. Model-building, selection and diagnostics. Other related topics as time permits. Computer applications using SAS.

STAT 52400 Applied Multivariate Analysis (3 cr.) P: STAT 52800 or equivalent, or consent of instructor. Extension of univariate tests in normal populations to the multivariate case, equality of covariance matrices, multivariate analysis of variance, discriminate analysis and misclassification errors, canonical correlation, principal components, factor analysis.

STAT 52500 Generalized Linear Model (3 cr.) P: STAT 52800 or equivalent or consent of instructor. Generalized linear models, likelihood methods for data analysis, diagnostic methods for assessing model assumptions. Methods covered include multiple regression, analysis of variance for completely randomized designs, binary and categorical response models, and hierarchical log-linear models for contingency tables.

PBHL–B 527 Introduction to Clinical Trials (3 cr.) P: STAT 51200, exposure to survival analysis; or consent of instructor. Prepares biostatisticians for support of clinical trial projects. Topics: fundamental aspects of the appropriate design and conduct of medical experiments involving human subjects including ethics, design, sample size calculation, randomization, monitoring, data collection analysis and reporting of the results.

STAT 52800 Mathematical Statistics I (3 cr.) P: STAT 51900. Sufficiency and completeness, the exponential family of distributions, theory of point estimation, Cramer- Rao inequality, Rao-Blackwell Theorem with applications, maximum likelihood estimation, asymptotic distributions of ML estimators, hypothesis testing, Neyman-Pearson Lemma, UMP tests, generalized likelihood ratio test, asymptotic distribution of the GLR test, sequential probability ratio test.

STAT 52900 Bayesian Statistics and Applied Decision Theory (3 cr.) P: STAT 52800 or equivalent. Bayesian and decision theoretic formulation of problems; construction of utility functions and quantification of prior information; choice of prior; methods of Bayesian decision and inference,; Bayesian computations; MCMC methods; empirical Bayes; hierarchical models, Bayes factors; combination of evidence; game theory and minimax rules, Bayesian design and sequential analysis.

PBHL–B 530 Statistics Methods in Bioinformatics and Computational Biology (3 cr.) P: STAT 51200, 51900; or consent of instructor. Covers statistical methods used in many areas of bioinformatics research, including sequence alignment, genome sequencing and gene finding, gene expression microarray analysis, transcriptional regulation and sequence motif finding, comparative genomics, and proteomics. Pending final approval.

STAT 53200 Elements of Stochastic Processes (3 cr.) P: STAT 51900 or equivalent. A basic course in stochastic models including discrete and continuous time processes, Markov chains and Brownian motion. Introduction to topics such as Gaussian processes, queues and renewal processes and Poisson processes. Applications to economics, epidemic models, birth and death processes, point processes, and reliability problems.

STAT 53300 Nonparametric Statistics (3 cr.) P: STAT 51900 or equivalent. Binomial test for

dichotomous data, confidence intervals for proportions, order statistics, one-sample signed Wilcoxon rank test, two-sample Wilcoxon test, two-sample rank tests for dispersion, Kruskal-Wallis test for one-way layout. Runs test and Kendall test for independence, one and two sample Kolmogorov-Smirnov tests, nonparametric regression.

STAT 53600 Introduction to Survival Analysis (3 cr.) P: STAT 51700. Deals with the modern statistical methods for analyzing time-to-event data. Background theory is provided, but the emphasis is on the applications and the interpretations of results. Provides coverage of survivorship functions and censoring patterns; parametric models and likelihood methods, special lifetime distributions; nonparametric inference, life-tables, estimation of cumulative hazard functions, the Kaplan-Meier estimator; one and two-sample nonparametric tests for censored data; semiparametric proportional hazards regression (Cox Regression), parameters' estimation, stratification, model fitting strategies and model interpretations. Heavy use of statistical software such as R and SAS.

PBHL-B 574 Applied Longitudinal Data Analysis (3 cr.) P: STAT 51200, 52500; or permission of instructor. Covers modern methods for the analysis of repeated measures, correlated outcomes and longitudinal data. Topics: repeated measures ANOVA, random effects and growth curve models, generalized estimating equations (GEE) and generalized linear mixed models (GLMMs). Extensive use of statistical software, e.g. SAS, R.

PBHL-B 587 Nonlinear Mixed Models (3 cr.) P: Undergraduate statistics course and familiarity with statistical inference. This course will develop the student's ability to understand the pharmacokinetic/pharmacodynamic model, fit the nonlinear mixed model through the required software package, conduct the diagnosis of model fitting, perform the hypothesis tests, and provide the interpretation of the data.

### 600 Level Courses

PBHL-B 612 Modern Statistical Learning Methods (3 cr.) P: STAT 52500. This course covers the various topics pertaining to the modern methods of high-dimensional data analysis

STAT 61900 Probability Theory (3 cr.) P: STAT 51900, 52800. Theory Measure theory based course in probability. Topics include Lebesgue measure, measurable functions and integration. Radon-Nikodym Theorem, product measures and Fubini's Theorem, measures on infinite product spaces, basic concepts of probability theory, conditional probability and expectation, regular conditional probability, strong law of large numbers, martingale theory, martingale convergence theorems, uniform integrability, optional sampling theorems, Kolmogorov's Three series Theorem, weak convergence of distribution functions, method of characteristic functions, the fundamental weak compactness theorems, convergence to a normal distribution, Lindeberg's Theorem, infinitely divisible distributions and their subclasses.

PBHL-B 616 Advanced Statistical Computing (3 cr.) P: STAT 52100, experience with R/Splus programming. This course covers selected computational techniques useful in advanced statistical applications and statistical research, such as methods for solving linear equations, numerical optimization, numerical integration, Bayesian methods, bootstrap methods, and stochastic search algorithms.

PBHL–B 626 Advanced Likelihood Theory (3 cr.) P: STAT 51900; STAT 52800. This course covers classical theories in likelihood-based parametric estimation methods with applications in statistical modeling for biomedical research. Main topics include general large sample theorems; Kullback-Leibler information theorem and efficient influence function with and without nuisance parameters; asymptotic theorems of maximum likelihood estimation; trinity of inference in statistical modelling; EM-algorithm theory; extended likelihood theory.

PBHL–B 627 Statistics in Pharmaceutical Research (3 cr.) P: STAT 51200; PBHL B527, B546. An overview of the drug development process, including the various phases of development from pre-clinical to post marketing. Topics: statistical issues in design, study monitoring, analysis and reporting. Additional topics may include regulatory and statistical aspects of population pharmacokinetics and real world applications.

STAT 62800 Advanced Statistical Inference (3 cr.) P: STAT 51900, 52800, C: STAT 61900. Real analysis for inference, statistics and subfields, conditional expectations and probability distributions, UMP tests with applications to normal distributions and confidence sets, invariance, asymptotic theory of estimation and likelihood based inference, U-statistics, Edgeworth expansions, saddle point method. Course is still subject to approval by The University Graduate School.

PBHL–B 634 Stochastic Modeling in Biomedical and Health Sciences (3 cr.) P: STAT 52800. The aim of this course is to develop those aspects of stochastic processes that are relevant for modeling important problems in health sciences. Among the topics to be covered are: Poisson processes, birth and death processes, Markov chains and processes, semi-Markov processes, modeling by stochastic diffusions. Applications will be made to models of prevalence and incidence of disease, therapeutic clinical trials, clinical trials for prevention of disease, length biased sampling, models for early detection of disease, cell kinetics and family history problems. Course is still subject to approval by The University Graduate School.

PBHL–B 636 Advanced Survival Analysis (3 cr.) P: STAT 53600, 62800. Addresses the counting process approach to the analysis of censored failure time data. Standard statistical methods in survival analysis will be examined, such as the Nelson-Aalen estimator of the cumulative hazard function, the Kaplan-Meier estimator of the survivor function, the weighted logrank statistics, the Cox proportional hazards regression model, and the accelerated failure time model.

PBHL–B 646 Advanced Generalized Linear Models (3 cr.) P: PBHL B546. The theory of classical and modern approaches to the analysis of clustered data, repeated measures, and longitudinal data: random effects and growth curve models, generalized estimating equations, statistical analysis of multivariate categorical outcomes, estimation with missing data. Discussion of computational issues: EM algorithm, quasi-likelihood methods, Bayesian methods for both traditional and new methodologies.

PBHL-B 688 Theory of Statistical Genetics (3 cr.) P: Graduate level statistics courses (such as B527, B546, and B536) and Q730: Methods in Human Genetics. This course is designed to provide solid training in statistical theory used in genetic analyses.

PBHL–B 698 Topics in Biostatistical Methods (1–3 cr.) P: Consent of instructor. Directed study and reports for students who wish to undertake individual reading and study on approved topics.

PBHL-B 800 Research-Ph.D. Thesis (1-15 cr.) P: Must have been admitted to candidacy. See advisor for more information. Research required by the graduate students for the sole purpose of writing a Ph.D. Dissertation.



## Appendix C – Graduate faculty and their research interests (As of August 2020)

1. **Benzion Boukai**, Program Co-Director, Chancellor’s Professor of Statistics; Ph.D., Statistics, 1988, SUNY Binghamton; *statistical inference, sequential analysis, Bayesian-frequentist interface*
2. **Joanne Daggy**, Assistant Research Professor of Biostatistics, Ph.D., Statistics, 2009, Purdue University; *multivariate modeling via copulas, longitudinal analysis, health services research*
3. **Sujuan Gao**, Professor of Biostatistics; Ph.D., Statistics, 1991, University of Southampton; *analysis of complex survey data, statistical methods for longitudinal data and missing data*
4. **Fang Li**, Associate Professor of Statistics; Ph.D., Statistics, 2004, Michigan State University; *nonparametric models, kernel smoothing techniques, time series, stochastic process*
5. **Xiaochun Li**, Associate Professor of Biostatistics; Ph.D., Statistics, 1996, University of British Columbia; *design and analysis of clinical trials, bioinformatics, medical informatics, nonparametric regression*
6. **Yang Li**, Associate Professor of Biostatistics; Ph.D., Statistics, 2013, University of Missouri-Columbia; *Health Data Analysis; Survival Analysis; Recurrent Event Data Analysis; Longitudinal Data Analysis; Panel Count Data Analysis; Design and Analysis of Clinical Trials; Big Data Analysis; Statistical Genomics/Proteomics*
7. **Ziyue Liu**, Associate Professor of Biostatistics; Ph.D., Biostatistics, 2010, University of Pennsylvania; *longitudinal data analysis, functional data analysis, time series analysis, clinical trials*
8. **Patrick O. Monahan**, Professor of Biostatistics; Ph.D., Measurement and Statistics, 2002, University of Iowa; *psychometric methodologies applied to behavioral research*
9. **Seho Park**, Research Assistant Professor of Biostatistics; Ph.D., Ph.D., Statistics, 2018, Iowa State University; *Data integration, multi-level modeling, bayesian hierarchical modeling, causal inference, missing data analysis, complex survey sampling design.*
10. **Hanxiang Peng**, Associate Professor of Statistics; Ph.D., Mathematics, 2001, SUNY Binghamton; *asymptotic theory, robust regression and data mining, modeling of correlated binary data, survival analysis*
11. **Susan M. Perkins**, Professor of Biostatistics; Ph.D., Biostatistics, 1997, University of Michigan; *categorical data analysis, clinical trials design and analysis, behavioral research*
12. **Francis Pike**, Research Assistant Professor of Biostatistics; Ph.D., Biostatistics, 2011, University of Pittsburgh; *Joint modelling, oncology.*
13. **Chandan K. Saha**, Associate Professor of Biostatistics; Ph.D., Biostatistics, 2001, University of Iowa; *statistical methods for longitudinal studies and clinical trials*

14. **Jyotirmoy Sarkar**, Professor of Statistics; Ph.D., Statistics, 1990, University of Michigan; *statistics, probability, economics*
15. **Fei Tan**, Associate Professor of Statistics; Ph.D. Biostatistics 2009, Florida State University; *survival analysis, modeling of correlated binary data, mixed effects model*
16. **Wanzhu Tu**, Interim Chair, Department of Biostatistics, Professor of Biostatistics; Ph.D., Statistics, 1997, University of South Carolina; *longitudinal data analysis, semiparametric regression.*
17. **Honglang Wang**, Assistant Professor of Statistics, Ph.D. Statistics 2015, Michigan State University; *longitudinal and functional data analysis, high dimensional data analysis, statistical genetics and genomics*
18. **Huiping Xu**, Associate Professor of Biostatistics; Ph.D. Statistics, 2007, Purdue University; *latent variable analysis, longitudinal analysis, health services research.*
19. **Constantin Yiannoutsos**, Professor of Biostatistics; Ph.D., Statistics, 1991, University of Connecticut; *diagnostic test validation, longitudinal data analysis, clinical trials, HIV epidemiology*
20. **Pengyue Zhang**, Research Assistant Professor of Biostatistics; Ph.D. Biostatistics, 2016, Indiana University; *large-scale health data analysis, pharmacovigilance, pharmacoepidemiology, and study design.*