Twin Cities Campus

Biostatistics Ph.D.

School of Public Health - Adm

School of Public Health

Link to a list of faculty for this program.

Contact Information:
School of Public Health, MMC 819, A395 Mayo Memorial Building, 420 Delaware Street, Minneapolis, MN 55455 (612-626-3500 OR 1-800-774-8636)
Email: sph-ask@umn.edu
Website: http://www.sph.umn.edu

- Program Type: Doctorate
- Requirements for this program are current for Fall 2020
- Length of program in credits: 53 to 67
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

The biostatistics PhD prepares graduates to conduct original research, collaborate and consult with biomedical researchers, implement and disseminate results of this research, and teach and mentor others in the field.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.70.

Other requirements to be completed before admission:
At least three semesters of calculus (including multivariable) and one semester of linear algebra, and two semesters of undergraduate courses in probability and mathematical statistics are strongly recommended. Real analysis or an equivalent is recommended. Experience with programming language (e.g., R, Java, C) and exposure to applied statistics is helpful, but not required.

In addition to completing the SOPHAS application, applicants must submit the following directly to SOPHAS:
Statement of purpose and objectives (an essay describing past education, experience, and current professional career objectives)
Résumé or curriculum vitae
Official postsecondary transcripts from all institutions attended, including previous study at the University of Minnesota (have transcripts sent directly from the institutions to SOPHAS)
Three letters of recommendation from persons qualified to assess academic work; clinical, public health, or professional experience; and leadership potential

Special Application Requirements:
Applications are accepted for fall semester admission only. All admitted international Ph.D. applicants are required to provide a World Education Services (WES) document verification report prior to beginning the program.

Proof of English Proficiency
Applicants whose native language is not English, or whose academic study was done exclusively at non-English speaking institutions, must prove English proficiency by providing either official Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) scores. Official report of the scores should be sent directly to SOPHAS using designation code 5688 for the TOEFL or designation code SOPHAS for the IELTS. Scores must be less than two years old. The preferred minimum English language test scores for admission to the School of Public Health are listed below.

The English Language test requirement may be waived if an applicant can provide proof of one of the following:
- Completion of 16 semester credits/24 quarter credits (within the past 24 months) in an academic program at a recognized institution of higher learning in the U.S. or Canada.
- An Educational Commission for Foreign Medical Graduates (ECFMG) certificate. Students should have an official or attested copy sent directly to the University of Minnesota School of Public Health at the address listed above.

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Information current as of March 28, 2024

Applicants must submit their test score(s) from the following:

- GRE
  - General Test - Verbal Reasoning: 150
  - General Test - Quantitative Reasoning: 146
  - General Test - Analytical Writing: 4

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 100
  - Paper Based - Total Score: 600
- IELTS
  - Total Score: 7
- MELAB
  - Final score: 80

Key to test abbreviations(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

29 to 43 credits are required in the major.
24 thesis credits are required.

This program may be completed with a minor.

Use of 4xxx courses towards program requirements is not permitted.

A minimum GPA of 3.3 is required for students to remain in good standing.

At least 3 semesters must be completed before filing a Degree Program Form.

Students entering the program without a statistics or biostatistics master's degree may need to complete additional preparatory coursework in their first year, selected in consultation with the advisor and Biostatistics director of graduate studies upon admission. Students who have not taken a real analysis course may need to complete MATH 4603 Advanced Calculus. Those who have taken a real analysis course are strongly encouraged, but not required to, take MATH 5615H. Preparatory coursework cannot be applied toward degree requirements.

Courses must be taken A/F, unless offered only S/N.

Biostatistics Core Requirements (19 credits)

PUBH 6250 - Foundations of Public Health (2.0 cr)
PUBH 7450 - Survival Analysis (3.0 cr)
PUBH 8401 - Linear Models (3.0 cr)
PUBH 8403 - Research Skills in Biostatistics (1.0 cr)
PUBH 8412 - Advanced Statistical Inference (3.0 cr)
PUBH 8432 - Probability Models for Biostatistics (3.0 cr)
PUBH 8442 - Bayesian Decision Theory and Data Analysis (3.0 cr)

Biostatistics Electives (9 credits)

Select at least 9 credits, in consultation with the advisor, from the following:

PUBH 7420 - Clinical Trials: Design, Implementation, and Analysis (3.0 cr)
PUBH 7465 - Biostatistics Consulting (2.0 cr)
PUBH 8422 *{Inactive}*(3.0 cr)
PUBH 8445 - Statistics for Human Genetics and Molecular Biology (3.0 cr)
PUBH 8446 - Advanced Statistical Genetics and Genomics (3.0 cr)
PUBH 8452 - Advanced Longitudinal Data Analysis (3.0 cr)
PUBH 8462 - Advanced Survival Analysis (3.0 cr)
PUBH 8472 - Spatial Biostatistics (3.0 cr)
PUBH 8475 - Statistical Learning and Data Mining (3.0 cr)

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PUBH 8482 - Sequential and Adaptive Methods for Clinical Trials (3.0 cr)
PUBH 8485 - Methods for Causal Inference (3.0 cr)
PUBH 8492 - Theories of Hierarchical and Other Richly Parametrized Linear Models (3.0 cr)

Health Science Elective (1 credit)
Take at least one credit offered by other School of Public Health divisions or Health Sciences programs. This course is chosen in consultation with the advisor.
PUBH 6xxx
PUBH 7xxx
PUBH 8xxx

Thesis Credits
Take at least 24 doctoral thesis credits.
PUBH 8888 - Thesis Credit: Doctoral (1.0 - 24.0 cr)

Requirements for students entering the PhD without a master's in statistics or biostatistics
Students entering the PhD without a master's in statistics or biostatistics must complete an additional 14 credits, selected in consultation with advisor.

Additional Biostatistics Coursework (14 credits)
Take the following courses for 14 credits:
STAT 8101 - Theory of Statistics 1 (3.0 cr)
STAT 8102 - Theory of Statistics 2 (3.0 cr)
PUBH 7405 - Biostatistical Inference I (4.0 cr)
PUBH 7406 - Biostatistical Inference II (3.0 cr)

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