DOCTOR OF PHILOSOPHY IN THE FIELD OF HEALTH DATA SCIENCE, APPLIED BIOSTATISTICS CONCENTRATION

Program Co-Directors: G. Diao, and T. Hamasaki

The doctor of philosophy in health data science develops data science leaders for applications in public health and medicine. The program advances the field by:

- Providing rigorous training in the fundamentals of health and biomedical data science.
- Fostering innovative thinking for the design, conduct, analysis, and reporting of public health research studies.
- Providing practical training through real-world research opportunities at research centers and institutes directed by departmental faculty.

Students choose one of two concentrations: applied biostatistics or applied bioinformatics.

The program offers a unique blend of the two disciplines, which helps practitioners become successful collaborators in interdisciplinary research. Each concentration focuses on the foundations of the respective discipline to acquire fundamental knowledge and experience in the subject area while gaining core knowledge in the foundations of the other concentration.

Visit the program website (https://publichealth.gwu.edu/content/health-and-biomedical-data-science-phd/) for additional information.

ADMISSIONS

Visit the Milken Institute School of Public Health website (https://publichealth.gwu.edu/) for additional information about academic programs and information about GWSPH. Graduate admissions information, including application requirements and deadlines, can be found on the GWSPH Graduate Admissions website (https://publichealth.gwu.edu/admissions/graduate-admissions/).

REQUIREMENTS

The following requirements must be fulfilled: 72 credits, including 14 credits in core courses, 28 credits in concentration-specific courses, a minimum of 12 credits in elective courses, 3 credits in practicum courses, and a minimum of 12 credits in dissertation research. In addition, students are required to complete the University’s Graduate Teaching Assistantship Certificate program.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PUBH 6080</td>
<td>Pathways to Public Health</td>
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<tr>
<td>PUBH 6421</td>
<td>Responsible Conduct of Research (taken for 1 credit)</td>
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<tr>
<td>PUBH 6850</td>
<td>Introduction to SAS for Public Health Research</td>
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<td>PUBH 6851</td>
<td>Introduction to R for Public Health Research</td>
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<td>PUBH 6852</td>
<td>Introduction to Python for Public Health Research</td>
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<td>PUBH 6860</td>
<td>Principles of Bioinformatics</td>
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<td>PUBH 6886</td>
<td>Statistical and Machine Learning for Public Health Research</td>
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<tr>
<td>PUBH 8099</td>
<td>Doctoral Topics (Cross Cutting Concepts in Public Health; taken for 1 credit)</td>
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<tr>
<td>PUBH 8870</td>
<td>Statistical Inference for Public Health Research I</td>
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**Applied biostatistics concentration-specific courses**

- PUBH 6866 Principles of Clinical Trials
- PUBH 6869 Principles of Biostatistical Consulting
- PUBH 8879 An Introduction to Causal Inference for Public Health Research
- PUBH 6887 Applied Longitudinal Data Analysis for Public Health Research
- PUBH 8871 Statistical Inference for Public Health Research II
- PUBH 8875 Linear Models in Biostatistics
- PUBH 8877 Generalized Linear Models in Biostatistics
- PUBH 8878 Statistical Genetics
- PUBH 8880 Statistical Computing for Public Health Research
- STAT 6227 Survival Analysis

**Electives**

A minimum of 12 credits in elective courses, including at least 3 credits in bioinformatics courses, at least 3 credit in biostatistics courses, and at least 3 credits in cognate area courses.

**Practicum courses (counseling and research)**

- PUBH 8283 Doctoral Biostatistics Consulting Practicum
- PUBH 8413 Research Leadership
**Dissertation research**

PUBH 8999  
Dissertation Research (taken for 12 to 15 credits)

**Additional requirements**

Additional program requirements include, but are not limited to completion of the University’s Graduate Teaching Assistantship Program Certificate, which includes enrollment in UNIV 0250. The 1 credit earned in UNIV 2050 does not count toward the total number required for the degree.

*Visit the GTAP website (https://gradfellowships.gwu.edu/graduate-teaching-assistantship-program-gtap/) for additional information.*