

# DOCTOR OF PHILOSOPHY IN THE FIELD OF HEALTH DATA SCIENCE, 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: biostatistics or 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 11 credits in core courses, 27 credits in concentration-specific courses, at least 12 credits in elective courses, 1 credit in research literature, and at least 12 credits in dissertation research. In addition, students must complete 1 credit in UNIV 0250 Graduate Teaching Assistant Certification.

Code	Title	Credits
<b>Required</b>		
Core courses		
PUBH 6080	Pathways to Public Health	

PUBH 6421	Responsible Conduct of Research (taken for 1 credit)
PUBH 6850	Introduction to SAS for Public Health Research
PUBH 6851	Introduction to R for Public Health Research
PUBH 6852	Introduction to Python for Public Health Research
PUBH 6860	Principles of Bioinformatics
PUBH 6886	Statistical and Machine Learning for Public Health Research
PUBH 8001	Doctor of Philosophy Seminar on Cross-Cutting Concepts in Public Health
Biostatistics concentration-specific courses	
PUBH 6864	Applied Survival Analysis for Public Health Research
PUBH 6866	Principles of Clinical Trials
PUBH 6887	Applied Longitudinal Data Analysis for Public Health Research
PUBH 8870	Statistical Inference for Public Health Research I
PUBH 8871	Statistical Inference for Public Health Research II
PUBH 8875	Linear Models in Biostatistics
PUBH 8877	Generalized Linear Models in Biostatistics
PUBH 8879	An Introduction to Causal Inference for Public Health Research
PUBH 8880	Statistical Computing for Public Health Research

### Electives

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

### Research Leadership

PUBH 8413	Research Leadership
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### Dissertation research

PUBH 8999	Dissertation Research (taken for a minimum of 12 total credits)
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### Additional requirements

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

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