

DOCTOR OF PHILOSOPHY IN THE FIELD OF HEALTH DATA SCIENCE, BIOINFORMATICS CONCENTRATION

Program Director: K Crandall

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, 18 credits in required concentration courses, at least 18 credits in elective courses, 1 credit in research leadership, and 12 to 24 credits in dissertation research. Additional requirements include, but are not limited to, completion of a graduate teaching assistantship program certificate.

Code	Title	Credits
Required		
Core courses		
PUBH 6080	Pathways to Public Health	

PUBH 6421	Responsible Conduct of Research
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

Concentration-specific courses

15 credits in bioinformatics courses

PUBH 6854	Applied Computing in Health Data Science
PUBH 6859	High Performance and Cloud Computing
PUBH 6861	Public Health Genomics
PUBH 6868	Quantitative Methods
PUBH 6884	Bioinformatics Algorithms and Data Structures
PUBH 8885	Computational Biology

Electives

A minimum of 18 credits in elective courses. Students must take 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 12 to 24 credits)
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Additional requirements

Additional program requirements include but are not limited to completion of the University's Graduate Teaching Assistantship Program (GTAP) certificate, which includes enrollment in UNIV 0250.*

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