

# DOCTOR OF PHILOSOPHY IN THE FIELD OF HEALTH DATA SCIENCE, APPLIED 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: 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.

## 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, 15 credits in required concentration courses, 18 minimum credits in elective courses, a 1 credit in practicum, 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
<b>Required</b>		
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 8099 Doctoral Topics (Cross Cutting Concepts in Public Health topic only)

PUBH 8870 Statistical Inference for Public Health Research I

Concentration-specific courses

15 credits in applied bioinformatics courses.

PUBH 6854 Applied Computing in Health Data Science

PUBH 6859 High Performance and Cloud Computing

PUBH 6861 Public Health Genomics

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.

### Practicum (teaching/research)

PUBH 8413 Research Leadership

### Dissertation research

PUBH 8999 Dissertation Research (taken for 12 to 24 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. \*

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