MASTER OF SCIENCE IN THE FIELD OF HEALTH DATA SCIENCE, BIOSTATISTICS CONCENTRATION

Program Director: A. Elmi

The master of science in health data science program positions graduates to be leaders and practitioners in public health and medicine. 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.

Biostatistics concentration

The biostatistics concentration prepares graduates to conduct research, undertake evaluation studies, and monitor population health status in academic, government, private sector, and community health settings. Through this research, students gain an understanding of the risk factors for chronic diseases such as diabetes, and how infectious diseases, such as Zika, Ebola, HIV/AIDS, and COVID-19, spread. Graduates work with the most vulnerable communities in order to improve health outcomes.

Visit the program website (https://publichealth.gwu.edu/content/health-and-biomedical-data-science-ms/) 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: 36 credits, including 9 credits in core courses, 18 credits in concentration-specific courses, 7 credits in elective courses, and 2 credits in consulting and thesis practicum.

Code	Title	Credits
Required		
Core courses		
PUBH 6080	Pathways to Public Health	
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 8870	Statistical Inference for Public Health Research I	
Biostatistics concentration-specific courses		
PUBH 6862	Applied Linear Regression Analysis for Public Health Research	
PUBH 6864	Applied Survival Analysis for Public Health Research	
PUBH 6865	Applied Categorical Data Analysis for Public Health Research	
PUBH 6866	Principles of Clinical Trials	
PUBH 6887	Applied Longitudinal Data Analysis for Public Health Research	
PUBH 8871	Statistical Inference for Public Health Research II	
Electives		
7 credits in pre-approved elective courses common to both program concentrations (biostatistics and bioinformatics) and/or courses limited to the biostatistics concentration listed below. Other courses may be approved in advance by the advisor.		
Electives options common to both the biostatistics and bioinformatics concentrations:		
PUBH 6853	Use of SAS for Data Management and Analysis	
PUBH 6856	Advanced SAS for Public Health Research	
PUBH 8885	Computational Biology	
PUBH 6899	Topics in Biostatistics and Bioinformatics	
PUBH 8875	Linear Models in Biostatistics	
PUBH 8877	Generalized Linear Models in Biostatistics	
STAT 6223	Bayesian Statistics: Theory and Applications	
Elective options limited to the biostatistics concentration		
PUBH 6003	Principles and Practices of Epidemiology	
PUBH 6299	Topics in Epidemiology	
PUBH 6861	Public Health Genomics	

PUBH 6863	Applied Meta-Analysis
PUBH 6886	Statistical and Machine Learning for Public Health Research
PUBH 6899	Topics in Biostatistics and Bioinformatics
PUBH 8879	An Introduction to Causal Inference for Public Health Research
STAT 6227	Survival Analysis
Practicum (consulting and thesis)	
2 credits, taken as follows:	
PUBH 6869	Principles of Biostatistical Consulting (1 credit)
PUBH 6898	Master of Science Thesis (taken for 1 credit)