Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

Milken Institute School of Public Health
Department of Biostatistics and Bioinformatics

Master of Public Health
Biostatistics
2026-2027
Note: All curriculum revisions will be updated immediately on the website
http://publichealth.gwu.edu

Program Director

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Mission Statement

The mission of the Biostatistics Program is to educate graduate students in developing the necessary methodological and quantitative skills to successfully apply statistical methods to the biological, biomedical and health services sciences. In addition to enhance students' capacity to think critically and creatively, we are determined to deepen their commitment to improving the public's health, to engaging in and promoting public service – qualities that are essential for future biostatisticians and public health practitioners.

Goals

The goals of the Biostatistics Program are to ensure that graduates:

- Understand and adhere to high scientific standards for research;
- Understand how to apply statistical methods to biological/biomedical sciences and health services
- Understand and follow guidelines for ethical treatment of research participants;
- Communicate research findings to a lay audience; and
- Respect cultural diversity throughout all of the above.

Program Prerequisites

Before joining the MPH Biostatistics degree program, students must complete one semester of college level calculus with a grade of B or better to be considered for admission. Students should enroll in a calculus refresher short course before or during the first term as needed.

Program Requirements

The MPH degree program in biostatistics consists of 45 credits. These credits are based on a series of Core Courses (14 credits) and Program-Specific Courses (22 credits), and electives (7 credits). The total 45 credit program also includes a Culminating Experience (2 credits) where students apply their didactic education in a real-world setting.

As an accredited School of Public Health, students in all GWSPH MPH programs are also required to fulfill both an interprofessional team experience and an applied practice experience. GWSPH has incorporated these requirements into the curriculum as follows:

All students accepted to this MPH program must follow the policies and regulations outlined in the GW Bulletin and the GWSPH Student Handbook. This includes, but is not limited to:

- Minimum Grade Point Average (GPA)
- Minimum Course Grades
- Continuous Enrollment
- Maximum Time to Degree
- Required Minimum Degree Credits
- Transfer Credit Policy
- CITI Training
- Integrity Quiz and Plagiarism
- Professional Enhancement (PE) Hours
- Interprofessional Education (IPE) Experience
- Applied Practice Experience (Practicum)
- Culminating Experience (e.g., CE)

Program-Specific Competencies

The MPH in Biostatistics focuses on developing students' skills in the statistical analysis and interpretation of health research data. The following competencies were developed in concert with professors of biostatistics courses (at GWU as well as from other CEPH-accredited MPH programs), biostatistics textbooks, conversations with prospective employers likely to hire MPH-biostatistics graduates, and with experience teaching biostatistics courses to MPH students. ASPPH Education Committee competencies were also consulted.

Upon completion of the MPH in Biostatistics, students will demonstrate functional competence to:

- **Design, Plan, and Conduct Studies:** Apply basic principles of biostatistics to contribute to the design, planning, and conduct of public health and biomedical studies. Relevant courses: PUBH 6862, 6864, 6865, 6866, 6869, 6899*, 6015

- **Manage Data:** Manage databases from public health and biomedical studies using statistical software, e.g., SAS®. Relevant courses: PUBH 6850, 6851, 6852, 6853, 6862, 6864, 6865, 6899*, 6015

- **Analyze Data and Interpret Results:** Analyze data by applying methodological concepts and interpret the results from public health and biomedical studies. Relevant courses: PUBH 6850, 6851, 6852, 6853, 6862, 6864, 6865, 6868, 6869, 6899*, 6015

- **Communicate Results:** Communicate results from statistical analysis in layman's terms as a member of a multidisciplinary research team on public health or biomedical studies. Relevant courses: PUBH 6850, 6851, 6852, 6853, 6866, 6869, 6899*, 6015

- **Apply Ethical Principles:** Identify and apply basic ethical principles pertaining to data confidentiality and interpretation of statistical results derived from public health and biomedical data. Relevant courses: PUBH 6866, 6869, 6899*, 6015

*Selected biostatistics topics/electives

Sample Special Project Topics

- Longitudinal Assessment of Disease Severity Markers in Renal Patients
- Analysis of USDA Data Trends on Toxic Residues in Animal Food Sources

- Alternative Methods for Analyzing Knee Surgery Outcome Data
- Correlates of Cerebral Spinal Fluid Substances in HIV Patients
- Development of a Prediction Model for Mortality in ICU Patients

Sample Culminating Experience Topics

Cancer:

Inflammatory Breast Cancer
Disparities in Cancer Diagnosis and Treatment
Associations between Behavioral Factors and Cancer

HIV/AIDS:

Use of Technology in the Care of HIV
Infected Individuals
Care of Pediatric and Adolescent HIV-Infected Patients
Adherence to Antiretroviral Medications
Development of Resistance to Antiretroviral Medications

Infectious Disease:

Listeria at Meat Packaging Plants
Food Contamination and Surveillance

Other:

Racial/Ethnic Disparities in Low Birth Weight
Use of Standardized Case Definitions in Adverse Events following Immunization Surveillance

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Master of Public Health
BIOSTATISTICS

Program-at-a-Glance
2026-2027

Begin Planning Your Applied Practice Experience During Year 1

Required Core Course (16 credits)		**Credits**	**Semester Offered**
PUBH 6000	MPH Applied Practice Experience	0	All
PUBH 6003	Principles & Practice of Epidemiology	3	Fall, Spring, Summer 10 wk
PUBH 6007	Social & Behavioral Approaches to Public Health	2	Fall, Spring, Summer I
PUBH 6009	Fundamentals of Program Evaluation	2	Fall, Spring, Summer I
PUBH 6011	Environmental & Biological Fundamentals of Public Health	3	Fall, Spring, Summer 10 wk
PUBH 6012	Fundamentals of Health Policy	2	Fall, Spring, Summer I
PUBH 6021	Essentials of Public Health Practice & Leadership 1	1	Fall, Spring, Summer I
PUBH 6022	Essentials of Public Health Practice & Leadership 2	1	Fall, Spring, Summer I
PUBH 6023	Interprofessional Education Experience	0	Fall, Spring Summer
PUBH 6015	Culminating Experience	2	See Advisor
Required Departmental Courses (22 credits)			
PUBH 6850	Introduction to SAS for Public Health Research	1	Fall
PUBH 6851	Introduction to R for Public Health Research	1	Fall
PUBH 6852	Introduction to Python for Public Health Research	1	Fall
PUBH 6853	Use of SAS for Data Management and Analysis	3	Fall, Spring
PUBH 6862	Applied Linear Regression Analysis for Public Health Research	3	Fall
PUBH 6864	Applied Survival Analysis for Public Health Research	3	Fall
PUBH 6865	Applied Categorical Data Analysis for Public Health Research	3	Spring
PUBH 6866	Principles of Clinical Trials	3	Spring
PUBH 6868	Quantitative Methods	3	Spring
PUBH 6869	Principles of Biostatistical Consulting	1	Spring
Electives (7 credits)			
PUBH 6xxx	Any SPH (PUBH, HSML, EXNS) graduate level course	7	Fall, Spring, Summer

Course Distribution	**Credits**
Public Health Core Courses	14
Culminating Experience	2
Required Departmental Courses	22
School of Public Health Electives	7
Total Degree Credits	45

Course Descriptions and Registration information can be found on the website:
http://publichealth.gwu.edu/academics

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Biostatistics

Advising Tips

NOTE: Always see your advisor for course scheduling and sequencing strategies, but remember that proper course selection, fulfilling requirements, and on-time graduation are your responsibilities.

The Master of Public Health (MPH) curriculum consists of four types of courses:

- Required Core Courses
- Required Program-Specific Courses
- Electives
- Required Practicum and Culminating Experience

The MPH core courses are designed to provide students with a broad public health context as well as a critical foundation for subsequent coursework. Early completion of these core courses ensures that students will have the base of knowledge to successfully complete the program specific courses and to get as much as possible out of them. As such, entering students are expected to enroll in MPH core courses in accordance with the following guidelines:

- We expect MPH students to complete the MPH core courses in their first year following their admission into the program (fall/spring/summer).
- Students may take core courses in any order.

Part-time students (who generally take 5 to 7 credits per semester) will typically concentrate on taking just core courses in their first year, and then take program-specific courses in their second and third years.

In order to help assure that all students complete core courses in the first year of study, GW SPH will offer all core courses during all three semesters (fall, spring, and summer). This will allow students who wish to complete their MPH degree within two years to do so, and will allow every student to make steady progress toward completing the MPH degree. Most of the MPH Biostatistics program specific courses are offered twice in each academic year (fall/spring semesters).

We recognize that there may be exceptional circumstances that make it difficult for a student to complete core courses in the first year as outlined above. Any such student should discuss this situation with his or her academic advisor.

For additional information and resources regarding registration, course descriptions, schedule of classes, advising, etc. follow this link: http://publichealth.gwu.edu/academics

Table 1 (full time students) and Table 2 (part time students) present sample course schedules that students admitted to the MPH program in biostatistics can use as a guideline to structure their program of studies. It is noteworthy that in either sample course schedule a fully 45 credits are required to complete the degree, including core courses (14 credits), program specific courses (22 credits), public health electives (7 credits) and the culminating experience (2 credits). See below.

Milken Institute School of Public Health
MPH in Biostatistics (45 cr)

Sample Schedule for 2-Year Completion (Summer start)

Semester	Cr	Course #	Course Name
Summer 1st year	2	PUBH 6007	Social & Behavioral Approaches to Public Health
5 credits	3	PUBH 6011	Environmental and Biological Fundamentals
Fall 1st year	2	PUBH 6012	Fundamentals of Health Policy
9 credits	1	PUBH 6021	Essentials of Public Health Leadership & Practice 1
	1	PUBH 6850	Introduction to SAS for Public Health Research
	1	PUBH 6851	Introduction to R for Public Health Research
	1	PUBH 6852	Introduction to Python for Public Health Research
	3	PUBH 6862	Applied Linear Regression Analysis for Public Health Research
Spring 1st year	3	PUBH 6853	Use of Statistical Packages: Data Management and Data Analysis
9 credits	3	PUBH 6866	Principles of Clinical Trials
	3	PUBH 6868	Quantitative Methods
Summer 2nd year	2	PUBH 6009	Fundamentals of Program Evaluation
5 credits	3	PUBH 6xxx	PUBH Electives
Fall 2nd year	0	PUBH 6000	MPH Applied Practice Experience
8 credits	3	PUBH 6003	Principles and Practice of Epidemiology
	1	PUBH 6022	Essentials of Public Health Leadership & Practice 2
	3	PUBH 6864	Applied Survival Analysis for Public Health Research
	1	PUBH 6xxx	PUBH Elective
Spring 2nd year	2	PUBH 6015	Culminating Experience
9 credits	0	PUBH 6023	Interprofessional Education Experience
	3	PUBH 6865	Applied Categorical Data Analysis for Public Health Research
	1	PUBH 6869	Principles of Biostatistical Consulting
	3	PUBH 6xxx	PUBH Elective

Milken Institute School of Public Health
MPH in Biostatistics (45 cr)

Sample Schedule for 3-Year Completion (Fall start)

Semester	Cr	Course #	Course Name
Fall 1st year	2	PUBH 6007	Social and Behavioral Approaches to Public Health
5 credits	1	PUBH 6850	Introduction to SAS for Public Health Research
	1	PUBH 6851	Introduction to R for Public Health Research
	1	PUBH 6852	Introduction to Python for Public Health Research
Spring 1st year	2	PUBH 6009	Fundamentals of Program Evaluation
7 credits	2	PUBH 6012	Fundamentals of Health Policy
	3	PUBH 6866	Principles of Clinical Trials
Summer 1st year	3	PUBH 6011	Environmental and Biological Fundamentals
4 credits	1	PUBH 6xxx	PUBH Elective
Fall 2nd year	1	PUBH 6021	Essentials of Public Health Leadership & Practice 1
7 credits	3	PUBH 6853	Use of Statistical Packages: Data Management and Data Analysis
	3	PUBH 6862	Applied Linear Regression Analysis for Public Health Research
Spring 2nd year	3	PUBH 6003	Principles and Practice of Epidemiology
6 credits	0	PUBH 6023	Interprofessional Education Experience
	3	PUBH 6865	Applied Categorical Data Analysis for Public Health Research
Summer 2nd year	3	PUBH 6xxx	PUBH Electives
3 credits			
Fall 3rd year	0	PUBH 6000	MPH Applied Practice Experience
7 credits	1	PUBH 6022	Essentials of Public Health Leadership & Practice 2
	3	PUBH 6864	Applied Survival Analysis for Public Health Research
	3	PUBH 6xxx	PUBH Electives
Spring 3rd year	2	PUBH 6015	Culminating Experience
6 credits	3	PUBH 6868	Quantitative Methods
	1	PUBH 6869	Principles of Biostatistical Consulting