

BIOSTATISTICS, MASTER OF SCIENCE (M.S.) WITH A CONCENTRATION IN CLINICAL RESEARCH AND BIOSTATISTICS

Program goal

The mission of the VCU Department of Biostatistics is to improve human health through methodological research, the education of graduate students and health science researchers in biostatistical methods and applications, and collaborative health sciences research. Faculty members conduct methodological research motivated by collaborative alliances, which in turn contributes to and enhances the department's educational mission. By focusing on the integration of methodological and collaborative research, students develop strong biostatistical and communication skills, enabling them to assume leadership positions in academia, government and industry.

Student learning outcomes

This training program is designed to be completed in 12 months (three semesters: fall, spring, summer) and will help students achieve the following learning outcomes.

Biostatistics core outcomes

1. Explain biostatistical concepts, ideas and methods in plain terms to non-biostatistical researchers using exceptional written and oral communication skills
2. Effectively collaborate with biostatistical and health science researchers
3. Demonstrate fluency in a minimum of two computational languages

Clinical research and biostatistics concentration-specific outcomes

1. Design an observational or experimental research study in a clinical setting
2. Synthesize findings and evidence from multiple clinical research sources

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the **Graduate School website** and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as

published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the [academic regulations section](#) for additional information on academic regulations for graduate students.

Degree candidacy requirements

A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master's or doctoral status according to the degree candidacy requirements of the student's graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student's faculty regarding the student's academic achievements and the student's readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

Visit the [academic regulations section](#) for additional information on degree candidacy requirements.

Graduation requirements

As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the [academic regulations section](#) for additional information on graduation requirements.

Apply online today. (<https://www.vcu.edu/admissions/apply/graduate/>)

Admission requirements

Degree:	Semester(s) of entry:	Deadline dates:	Test requirements:
M.S.	Fall preferred	Applications received prior to May 15 given priority consideration	GRE (optional)

In addition to the general admission requirements of the VCU Graduate School (<https://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements/>), students applying to the clinical research and biostatistics concentration must hold the M.D., D.D.S., Ph.D., D.P.H., D.O., Pharm.D. or an equivalent health professional terminal degree from an accredited college or university. Applicants with international M.D. degrees are considered on an individual basis. The applicant must have a minimum undergraduate GPA of 3.00. Applicants must also submit a letter detailing career goals and how the M.S. in Biostatistics with a concentration in clinical research and biostatistics applies to those goals, as well as at least three letters of recommendation.

Degree requirements

In addition to the general VCU Graduate School graduation requirements (<https://bulletin.vcu.edu/academic-regs/grad/graduation-info/>), M.S. students must complete a minimum total of 33 graduate credit hours.

In addition to meeting VCU Graduate School and program requirements for graduation, all students enrolled in the School of Public Health must demonstrate competence in foundational public health learning objectives. This requirement is waived for students who previously completed a CEPH-accredited degree at the bachelor's, master's or doctoral level.

Applied examination

Students pursuing the M.S. degree must pass an applied examination administered after completion of the following courses: BIOS 524, BIOS 601, BIOS 602 and BIOS 606. This examination is graded as pass or fail. A student who does not pass the applied examination will have one opportunity to retake the examination.

Thesis

There is no thesis requirement for the M.S. program.

Course requirements

Course	Title	Hours
Required core courses		
BIOS 524	Biostatistical Computing	3
BIOS 601	Analysis of Biomedical Data I	3
BIOS 602	Analysis of Biomedical Data II	3
BIOS 603	Biostatistical Consulting (one-credit course taken two semesters)	2
BIOS 606	Clinical Trials	3
BIOS 690	Biostatistical Research Seminar (one-credit course taken two semesters)	2
BIOS 697	Directed Research in Biostatistics	1
OVPR 601	Scientific Integrity	1
Required concentration courses		
BIOS 531	Clinical Epidemiology	3
BIOS 535	Behavioral Measurement	3
BIOS 635	Structural Equation Modeling	3
Elective courses		
Select six credits from these suggested electives:		6
BIOS 543	Graduate Research Methods I	
BIOS 544	Graduate Research Methods II	
BIOS 549	Spatial Data Analysis	
BIOS 660	Sequential Analysis and Advanced Design and Analysis of Clinical Trials	
Total Hours		33

The minimum number of graduate credit hours required for this degree is 33.

Students who complete the requirements for this concentration will receive a Master of Science in Biostatistics.

Contact

Nitai Mukhopadhyay, Ph.D.
Professor and graduate program director

ndmukhopadhy@vcu.edu
(804) 827-2053

Additional contact (admissions and prospective students)
Kate Huck, M.Ed.
Education Coordinator, Department of Biostatistics
huckk@vcu.edu
(804) 827-2049

Program website: [biostatistics.vcu.edu](http://www.biostatistics.vcu.edu) (<http://www.biostatistics.vcu.edu/>)