



# Biostatistics Major

Bachelor of Science in Public Health

[www.sph.unc.edu/bios](http://www.sph.unc.edu/bios)

- Biostatistics is the discipline concerned with the improvement of human health through the application and advancement of statistical science.
- A biostatistician applies innovative statistical methods to help understand public health issues and disease, including the basic medical sciences. Biostatisticians design, conduct and analyze research projects related to human health.
- Biostatistics consists of a strong background in mathematics, advanced course work in statistical applications, theory and computing, as well as in-depth understanding of health sciences.
- A major in Biostatistics provides an excellent foundation for employment or continued study, including medical school admission.

## What are the strengths of our undergraduate major in Biostatistics?

**Our supportive learning environment:** The small size of our program (about 30-40 students per cohort), coupled with faculty and staff commitment to student success, helps create a very supportive learning environment.

**Our department:** The Department of Biostatistics is part of the UNC-CH Gillings School of Global Public Health, which is ranked the top *public* school of public health in the country, ranked #2 overall, according to the 2021 US News and World Report. We are believed to be the first department in the country to offer an undergraduate degree in Biostatistics. **Our faculty:** We have over 40 faculty members doing research in a variety of methodology areas (such as survival analysis, clinical trials, and genetics) and collaborative fields (such as cancer, cardiovascular disease, and environmental health). **Admission to the program is competitive.** Strong applicants have excellent academic performance with particular attention to the prerequisites, quantitative abilities, and interests.

## What are the admission requirements and prerequisite courses for this major?

- Visit [Application Deadlines & How to Apply](#) for more information
- Online application, 2 letters of recommendation (at least one from a math/statistics teacher), personal statement, resume
- 3.0 Cumulative GPA in order to be eligible to apply
- SAT/ACT quantitative scores
- Approximately 60 credit hours completed (we are typically a junior entry major)
- Recommended: Complete all General College requirements in your first 2 years at UNC
- Course credits via transfer, AP exams, and UNC courses are acceptable for prerequisites
- Many of your prerequisite courses should be completed at the point of application submission
- Applicants should earn a grade of C (not C-) or better in all prerequisite courses
- **Prerequisite courses**
  - BIOL 101 & BIOL 101L: Principles of Biology & Introductory Biology Laboratory
  - COMP 110: Introduction to Programming or COMP 116: Introduction to Scientific Programming
  - MATH 231: Calculus of Functions of One Variable I
  - MATH 232: Calculus of Functions of One Variable II
  - MATH 233: Calculus of Functions of Several Variables

## **Major Requirements (once admitted/grade of C or better)**

- SPHG 351: Foundations of Public Health
- SPHG 352: Public Health Systems and Solutions
- EPID 600: Principles of Epidemiology for Public Health
- BIOS 500H: Introduction to Biostatistics
- BIOS 511: Introduction to Statistical Computing and Data Management
- BIOS 545: Principles of Experimental Analysis
- BIOS 550: Basic Elements of Probability and Statistical Inference I
- BIOS 664: Sample Survey Methodology
- BIOS 668: Design of Public Health Studies
- BIOS 691: Field Observations in Biostatistics
- BIOL 201: Ecology and Evolution or BIOL 202: Molecular Biology and Genetics
- MATH 381: Discrete Mathematics or STOR 215: Foundations of Decision Sciences
- MATH 521: Advanced Calculus I or MATH 528: Mathematical Methods for the Physical Sciences I
- MATH 547: Linear Algebra for Applications

## **Undergraduate Research**

Students are encouraged to consider doing senior honors research and should consult individual faculty members for opportunities. However, some students choose to take advantage of the myriad part-time employment opportunities with our faculty members as research assistants working on their research and service projects or opportunities within nearby Research Triangle Park.

## **Honors in Biostatistics**

The Department of Biostatistics offers an honors program in which undergraduates can pursue individualized study and undertake a special project. Students who have a grade point average of 3.3 or higher are eligible to participate in honors research and write an honors thesis. Students completing an honors program must register for BIOS 693H and 694H.

## **Dual Bachelor's–Master's Degree Program**

Undergraduate students with appropriate math and biostatistics backgrounds have the opportunity to pursue a dual bachelor's–graduate degree. This dual BSPH–Master of Science (MS) program identifies a coherent course of study for students to complete some of the MS degree requirements in biostatistics while pursuing the BSPH degree with a major in biostatistics.

## **Sample of Graduate and Professional School Destinations**

UNC Chapel Hill, University of Washington, Harvard University, University of Michigan, Emory University, Columbia University, NC State University, Duke University, Johns Hopkins University, University of Virginia, Wake Forest University, Vanderbilt University, Medical University of SC

## **Career Opportunities for Biostatistics Graduates**

The job market for skilled biostatisticians has been excellent. Previous graduates have taken positions in the pharmaceutical industry, contract research organizations (CROs), medical settings, academics, and government agencies involved in health care. Salaries for biostatisticians are very competitive. Employers of biostatisticians include: GlaxoSmithKline, Merck, IQVIA, Duke Clinical Research Institute, Eli Lilly, Harvard School of Public Health, Rho, PPD, Ciba Vision, SAS Institute, American Cancer Society, Family Health International, Centers for Disease Control, and many academic institutions.