BIOSTATISTICS MAJOR, B.S.P.H.

Contact Information
Department of Biostatistics
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Biostatistics is a discipline concerned with the improvement of human health through the application and advancement of statistical science. The undergraduate major in biostatistics prepares students to apply quantitative skills to a variety of health-related issues, including clinical trials, environmental studies, population studies, and studies involving patterns of disease, disability, and death. The curriculum consists of a strong mathematical foundation; advanced coursework in statistical applications, theory, and computing; and an understanding of the public health sciences.

The Department of Biostatistics in the Gillings School of Global Public Health was the first undergraduate program in the country to offer an undergraduate degree in biostatistics. The degree provides an excellent foundation for continued studies (primarily graduate school in biostatistics, epidemiology, or medical school) and a strong foundation for employment in the health care industry for highly qualified students interested in quantitative methods applied to public health and medicine.

Admission (http://catalog.unc.edu/undergraduate/schools-college/public-health/#admissiontext) to the program is required.

Requirements
In addition to the program requirements listed below, students must:

- attain a final cumulative grade point average of at least 2.0
- complete a minimum of 45 academic credit hours earned from UNC–Chapel Hill courses
- take at least half of their major course requirements (courses and credit hours) at UNC–Chapel Hill
- earn a C (not C-) or better in prerequisite, core public health, and department-required courses

For more information, please consult the degree requirements section of the catalog (http://catalog.unc.edu/undergraduate/general-education-curriculum-degree-requirements/#degereerequrementstext).

Core Requirements

Public health core courses:
ENVR 600 Environmental Health 3
EPID 600 Principles of Epidemiology 3
HBEH 600 Social and Behavioral Sciences in Public Health 3
HPM 600 Introduction to Health Policy and Management 3

Other core courses:
BIOS 500H Introduction to Biostatistics 3
BIOS 511 Introduction to Statistical Computing and Data Management 4
BIOS 545 Principles of Experimental Analysis 3
BIOS 550 Basic Elements of Probability and Statistical Inference I 4
BIOS 664 Sample Survey Methodology 4
BIOS 668 Design of Public Health Studies 3
BIOS 691 Field Observations in Biostatistics 1

Additional Requirements

BIOL 101 Principles of Biology 4
& 101L and Introductory Biology Laboratory 1, H 4
COMP 110 Introduction to Programming 1, H 3
or COMP 116 Introduction to Scientific Programming 3
MATH 231 Calculus of Functions of One Variable I 1 3
MATH 232 Calculus of Functions of One Variable II 1 3
MATH 233 Calculus of Functions of Several Variables 1, H 3
BIOL 201 Ecology and Evolution 2, H 4
or BIOL 202 Molecular Biology and Genetics 3
MATH 381 Discrete Mathematics 3
MATH 521 Advanced Calculus 1 H 3
or MATH 528 Mathematical Methods for the Physical Sciences I 3
MATH 547 Linear Algebra for Applications 3

Total Hours 63

H Honors version available. An honors course fulfills the same requirements as the nonhonors version of that course. Enrollment and GPA restrictions may apply.

1 required before matriculation into the program
2 have prerequisites, BIOL 101 and CHEM 101 or CHEM 102

Special Opportunities in the Department of Biostatistics

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 B.S.P.H.–M.S. program identifies a coherent course of study for students to complete some of the M.S. degree requirements in biostatistics while pursuing a B.S.P.H. degree with a major in biostatistics. More information is available on the department Web site (http://sph.unc.edu/bios/faqs-undergraduates-2).

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. Faculty members’ readiness to guide the students in their honors work governs the final selection of those allowed to enter the program. Students completing an honors program must register for BIOS 693H and BIOS 694H.

Experiential Education
The required course, BIOS 664, fulfills the General Education experiential education requirement. In addition, students are required to take BIOS 691 during the fall semester of the senior year. This course consists of an orientation to and observation of six or more major nonacademic institutions in North Carolina’s Research Triangle Park area that employ biostatisticians, including contract research organizations, nonprofit...
companies, and government agencies. BIOS 691 does not fulfill the General Education experiential education requirement.

**Laboratory Teaching Internships and Assistantships**
Students are encouraged to investigate part-time employment during the academic year and full-time employment during the summer after their junior year with members of our faculty and their collaborators on current research and service projects.

**Study Abroad**
Students are encouraged to participate in the University’s study abroad programs in the summers or before matriculating to the B.S.P.H. in biostatistics program. Identification of a study abroad program early in the student’s career is necessary for course planning purposes.

**Undergraduate Awards**
The Theta Chapter of Delta Omega honors up to 10 percent of the department’s graduates with an award of excellence. Awards are presented in the spring as part of the biostatistics awards ceremony. Among the recent graduates, a notable proportion of students has been inducted into Phi Beta Kappa.

**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 on their research and service projects or opportunities within nearby Research Triangle Park.