

# Biostatistics and Bioinformatics



EMORY  
LANEY  
GRADUATE  
SCHOOL



The Ph.D. program in Biostatistics and Bioinformatics prepares students for research careers by offering a blend of theoretical and methodological courses. Our teaching curriculum is based on the principle that almost every biostatistician will have to spend at least some of his/her time on statistical analysis of real-life data. Therefore, we prepare our students to be familiar with a variety of statistical methods and approaches by exposing them to real-life problems through consulting activities, field studies, and internships.

## Research and Consultation

Emory's Biostatistics and Bioinformatics program offers students an unparalleled range of challenging research projects, as well as possible career opportunities.

Biostatistics and Bioinformatics faculty collaborate with researchers in a variety of disciplines, developing and applying statistical methodology in search of solutions to medical and public health problems. They have ties with many affiliates both within Emory and in the broader health research community. These affiliates include the Carter Center of Emory University, the Emory School of Medicine, Grady Memorial Hospital, Wesley Woods Geriatric Hospital, the Georgia Department of Human Resources, the Georgia Mental Health Institute, the Georgia Medical Care Foundation, the Atlanta Veteran's Administration Center, the American Cancer Society national headquarters, the U.S. Centers for Disease Control and Prevention (CDC), and various branches of the National Institutes of Health.

Specific research projects cover a broad range of issues and methodologies. Some samples include:

- a five-year, NIH funded effort to develop powerful computer modeling techniques to analyze and respond to infectious disease outbreaks;
- efforts to apply biostatistical methods to the analysis of genetic data to further our understanding of complex disorders such as Parkinson's disease and schizophrenia;
- the development of statistical methods to analyze the distribution of the burdens of environmental hazards between different socioeconomic groups.

For a full list of current and recent research projects, visit [www.sph.emory.edu/bios/research.php](http://www.sph.emory.edu/bios/research.php).

In addition to conducting their own research, Biostatistics and Bioinformatics faculty offer comprehensive statistical consultation and computational services to faculty, staff, and students in the Rollins School of Public Health, other divisions of the Woodruff Health Sciences Center, and throughout the University, through the Biostatistics Consulting Center (BCC).

# DISCOVER

the unexpected

## Opportunities for Practical Training

Biostatistics and Bioinformatics graduate students often have opportunities for practical experience, through collaborative research with biostatistics faculty members or through summer internships with some of the many entities affiliated with the program. In the past, students have held internships at the CDC and at nationally prominent pharmaceutical and consulting firms. Teaching opportunities have also been available.

## Computing

Faculty and students have access to a variety of central servers, workstations, and microcomputers running DOS, UNIX, and other operating systems, and to a dedicated computer lab with twelve Pentium personal computers. Each Ph.D. student's office is equipped with a PC.

## Curriculum

The Ph.D. program in Biostatistics and Bioinformatics is designed for individuals with strong quantitative skills and background or interest in the biological, medical, or health sciences. To the extent possible, the curriculum of each student is tailored to his or her background and interests. Students can enter the Ph.D. program with a bachelor's or a master's degree.

The Ph.D. coursework can be completed in 2 – 3 years, depending on students' previous training. Our website has a list of required courses. Following the relevant coursework, students take a Ph.D. Methods Exam and a Ph.D. Theory Qualifying Exam.



The dissertation can be completed in two years.

In addition to the general Biostatistics curriculum, the program offers two specialized training programs.

**BIostatISTICS IN GENETICS, IMMUNOLOGY, AND NEURO-IMAGING (BGIN) TRAINING PROGRAM** gives Ph.D. students in Biostatistics the opportunity to learn to develop statistical and computational innovations applied in one of three areas of concentration. Students choose a focus area and work with related degree programs in the Graduate Division of Biological and Biomedical Sciences—Genetics and Molecular Biology, Immunology and Molecular Pathogenesis, Neurosciences, and Population Biology, Ecology, and Evolution (PBEE). The students take the core Biostatistics program, electives in biostatistics and in their area of scientific concentration, as well as participate in three laboratory rotations to enhance their applied experiences. The goal of the program is to produce biostatisticians who are knowledgeable in their applied field of bioscience with the ability to further the science and insight with new statistical methods.

**ENVIRONMENTAL BIostatISTICS TRAINING PROGRAM** focuses on the interaction of two research themes:

- statistical methods for environmental policy, pertaining to setting and enforcing standards for priority pollutants, quantitative risk assessment, and assessments of environmental justice concerned with differential impacts of environmental exposures across sociodemographic groups); and
- statistical methods in quantitative disease ecology, e.g., quantifying environmental impacts on vector-borne diseases and zoonoses such as rabies and Lyme disease, including investigations of the phylogeography or spatial patterns of particular genetic strains of such diseases.

The training program integrates these two main areas through coursework and a “research rotation” for trainees. The program involves faculty from Biostatistics, Environmental and Occupational Health, Epidemiology, Biology, and Law.

## Students

Students entering graduate programs in Biostatistics and Bioinformatics come from a variety of undergraduate fields. Many have undergraduate degrees in mathematics, applied mathematics or statistics. Others may have majored in the biological or social sciences. Specific requirements vary depending on the particular degree sought by a student, but all students are expected to have a strong undergraduate background in mathematics or statistics and a strong desire to study the theory and application of statistical methods in the biological and health sciences.

Employment prospects for Ph.D. level biostatisticians have been excellent in recent years. Positions as researchers and data analysts are commonly available in industry, academia and government agencies. The monthly news magazine of the American Statistical Association (ASA), *Amstat News*, contains nationwide listings of career opportunities for biostatisticians.

Recent graduates from our program have gone on to diverse positions:

- Research Associate, Duke University
- Amgen, Inc.
- Jackson Heart Study, Jackson State University
- Data Administrator/Lead Project Coordinator, Department of Biostatistics, Emory University
- Senior Research Biostatistician, Bristol-Myers Squibb, New Jersey
- Centers for Disease Control and Prevention
- Research Associate, Center for Biostatistical AIDS Research, Harvard University
- Senior Statistician, Eli Lilly Corporate Center

## Faculty

The program has over 30 core and approximately 20 visiting or adjunct faculty members, many with joint appointments in other departments at Emory or with our affiliated organizations.

Our website has a complete list of faculty and their research interests: [www.sph.emory.edu/bios/faculty.php](http://www.sph.emory.edu/bios/faculty.php).

## Contact Information

For more information and application materials contact:

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## About the Rollins School of Public Health

At Emory's Rollins School of Public Health, students learn to identify, analyze, and intervene in today's most pressing public health issues. The school is located in Atlanta, Georgia, often referred to as the "Public Health Capital of the World"—the city is also home to the U.S Centers for Disease Control and Prevention; CARE; the American Cancer Society; The Carter Center; the Arthritis Foundation; numerous state and regional health agencies; and health-related research programs of Emory University's Woodruff Health Sciences Center. This setting is ideal for hands-on research, collaborations with the world's leading public health agencies, and interdisciplinary work with national and international organizations.

The school comprises six academic departments: behavioral sciences and health education, biostatistics, environmental and occupational health, epidemiology, health policy and management, global health, and hosts over 20 interdisciplinary centers as well as a distance learning program.

In addition to four doctoral programs offered through the Laney Graduate School, the Rollins School of Public Health offers Master of Public Health, Master of Science in Public Health, Master of Science in Clinical Research (jointly with the Emory School of Medicine), and dual degree MPH programs with the schools of business, law, medicine, physician assistant, and nursing.

Visit [www.sph.emory.edu](http://www.sph.emory.edu).



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Requests for Additional Information:

RECRUITMENT AND ADMISSIONS

Ph.D. Program  
Biostatistics  
Rollins School of Public Health  
Emory University  
1518 Clifton Road  
Atlanta, GA 30322

404-727-6028 (ask for Biostatistics  
and Bioinformatics)

[biosadmit@sph.emory.edu](mailto:biosadmit@sph.emory.edu)

<http://www.graduateschool.emory.edu>  
<http://www.sph.emory.edu/bios>