Curriculum Overview and Timeline

First Year: Core courses designed to provide a solid foundation in biostatistics
Second Year: Elective courses tailored to the choice of 1 of 3 tracks:
• Clinical and Translational Research | • Biomedical Data Science | • Mathematical Statistics

	FALL		SPRING	
Year One	• • • Introduction to Statistical Theory and Methods I		• • • Introduction to Statistical Theory and Methods II	**Qualifying Exam & Practicum**
	• • • Applied Biostatistical Methods I		• • • Applied Biostatistical Methods II	
	• • • Introduction to the Practice of Biostatistics – Biology		• • • Introduction to the Practice of Biostatistics – Communication	
	• • Introduction to Statistical Programming – R		• • Introduction to Statistical Programming – SAS	
	• Software Tools for Biomedical Data Science		• Data Science with R	
	• • • Career Prep and Development I		• • • Career Prep and Development II	
Year Two	• • • Survival Analysis		• • • Categorical Data Analysis	**Graduation!**
	• • • Generalized Linear Models		• • • Longitudinal Data Analysis	
	• • • Statistical Methods for Learning and Discovery		• • • Analysis of Observational Studies	
	• • Clinical Trial Design and Analysis		• • • Statistical Genetics and Genetic Epidemiology	
	• Statistical Programming for Big Data		• Case Studies in Biomedical Data Science	
	• Advanced Statistical Inference		• Linear Models and Inference	
	• Probability and Measure		• Modern Inferential Techniques and Theory	
			• Advanced Statistical Computing	

"My goal is to direct the **country's most student-centered biostatistics program** — one whose graduates are exceptionally well-trained in the science, art, and practice of biostatistics, and are highly valued in the rapidly evolving field of biomedical research." – *Megan Neely, Ph.D. (Director of Graduate Studies Master of Biostatistics Program, Assistant Professor) Department of Biostatistics & Bioinformatics, Duke University Medical Center*

"The interns and graduates who have come to work with us have been well prepared with a solid base of statistical and programming knowledge, good communication skills, and an enthusiastic desire to learn, contribute, and be part of our team."

– *Terry Weber Sosa, Vice President, Biostatistics, QuintilesIMS*

We are here to help:
Kendall Mincey, Program Coordinator
Email: biostat-admissions@duke.edu
Phone: 919-668-5876

For more information, visit https://biostat.duke.edu/ education/master-biostatistics/overview

Master of Biostatistics Program
Duke University School of Medicine

Master of Biostatistics Program
Duke University School of Medicine

This two-year program prepares aspiring biostatisticians and data scientists to make outstanding contributions to biomedical research in academic, government, and industry settings.

Pursue individualized studies at a WORLD-RENOWNED medical institution.

Acquire **cutting-edge knowledge and skills** applicable across the biomedical sector.

Advance CRITICAL INSIGHTS into basic and translational biomedical research to improve patient care.

Why Duke?

> **Faculty practice what they teach,** participating in research at the forefront of biomedical science across the world-renowned Duke University School of Medicine.

> **A low student-to-faculty ratio** supports individualized student-centered learning — more than 50 faculty work with approximately 60 first- and second-year students.

> **Duke's world-class biomedical research enterprise** offers wide-ranging graduate study opportunities in biostatistics, from clinical trials to statistical genetics, from bioinformatics to biomedical data science.

> **One-of-a-kind career development** tools and training give Duke students an advantage in the marketplace.

"As a biology major, I was looking to improve my quanti-tative skills. Through the numerous internship and project opportunities that Duke makes available, I was able to put to use all of the cutting-edge skills I learned in the classroom. The environment for learning is wonderful. The administrators of the program are really invested in the success of their students."
– *Rituparna Altner*
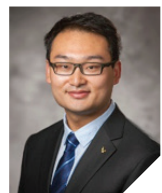
"The program not only provided me with the **rigorous academic training** needed to get into a PhD program, but with the **practical skills** to be a professional biostatistician. Additionally, I worked with many experienced biostatisticians from whom I learned so much." – *Xingyan (David) Wang*

For more information visit **https://biostat.duke.edu/education/master-biostatistics/overview**

Mastery of state-of-the-art biostatistical methodology + career development savvy = a strong foundation for professional success

As biomedical research becomes increasingly **quantitative and complex**, we equip you with:
> a strong foundation in statistical inference,
> targeted training in statistical programming in languages like R, SAS, and Python,
> a broad knowledge base in understanding human biology and its analytical application in the field, and
> the ability to effectively communicate statistical principles to multi-disciplinary research teams.

Unlike other programs, ours includes a top executive coach who teaches a yearlong course in **career preparation and development** that provides you with:
> professional resumes and cover letters,
> information on how to best manage your digital presence,
> professional development input,
> career counseling and coaching,
> interview and employment negotiation skills, and much more.

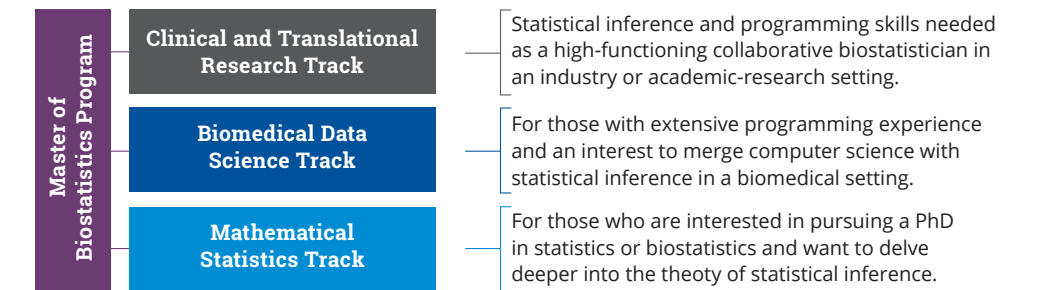Graduates become **statistical programmers, biostatisticians, and data scientists** at leading institutions such as:
> Quintiles, Rho, Pharmaceutical Product Development, INC Research, Astellas Pharmaceuticals, PAREXEL, Novella, FHI 360, Blue Cross Blue Shield, Cigna, and Boehringer Ingelheim.
> Duke Clinical Research Institute, Fred Hutchinson Cancer Research Center, Lieber Institute for Brain Development at Johns Hopkins University, Duke Human Vaccine Institute, Duke University Biostatistics Core, and University of Pennsylvania Medical Center.

Graduates also go on to pursue **doctoral positions** in Biostatistics and Statistics programs, among them:
> Duke University, University of Michigan, Boston University, MD Anderson at the University of Texas, University of Pennsylvania, North Carolina State University, Penn State, and University of North Carolina.

"**The MB program at Duke is a unique experience.** The faculty and staff go above and beyond to make sure their students succeed and the research opportunities in the area are unparalleled. Regardless of your goal after graduation, academia or industry, you can find opportunities that will prepare you for your future career. – *Emily Perry, MB*

Targeted Training

After graduation, a broad spectrum of employment and post-graduate opportunities will be available to students. To help students best leverage their training, the program offers three specialization tracks for students to tailor their training to their post-graduation goals.

Master of Biostatistics Program		
Clinical and Translational Research Track	—	Statistical inference and programming skills needed as a high-functioning collaborative biostatistician in an industry or academic-research setting.
Biomedical Data Science Track	—	For those with extensive programming experience and an interest to merge computer science with statistical inference in a biomedical setting.
Mathematical Statistics Track	—	For those who are interested in pursuing a PhD in statistics or biostatistics and want to delve deeper into the theoty of statistical inference.

For more information about how to select a track, visit **https://biostat.duke.edu/education/master-biostatistics/choose-a-track**

"I am proud to be affiliated with a program that prepares students so well for a career in the biomedical sciences. Graduates are prepared with the technical expertise, real world experience, and soft skills needed for the collaborative jobs common in our industry." – *Laura Helms Reece, Co-CEO of Rho, Chapel Hill, NC*