MS
PhD

SCHOOL OF
PUBLIC HEALTH
UNIVERSITY OF MINNESOTA

BIOSTATISTICS

Earn your degree from internationally-recognized leaders in the development and application of statistical methods for addressing important challenges in medicine and public health.

WHAT DO BIOSTATISTICIANS DO?

Biostatisticians develop and apply data analysis tools that drive biomedical research. They are key members of research teams in every field of biomedicine including neuroscience, genetics/genomics, cancer, heart disease, HIV, and mental health.

Biostatisticians:

- Develop and apply new statistical methods.
- Collaborate with biomedical researchers to plan, design, and analyze clinical and population studies.
- Act as consultants for government, industry, and legal proceedings.
- Teach and train the next generation of biostatisticians.

BIOSTATISTICIANS FIND ANSWERS TO SOME OF THE TOUGHEST SCIENTIFIC QUESTIONS, INCLUDING:

- **Imaging:** What brain regions are most active/suppressed in individuals with clinical depression?
- **Emerging infectious diseases:** What are the long-term consequences of the Ebola Virus Disease?
- **Statistical genetics:** Which combinations of genes put you at highest risk for heart disease?
- **Tobacco regulatory science:** Would reducing the nicotine content of cigarettes reduce nicotine exposure and dependence?

DEGREE OPTIONS

The School of Public Health offers master's (MS) and doctoral (PhD) degrees in Biostatistics.

ADVANTAGES OF THE PROGRAM

Highly ranked. Biostatistics at the UMN School of Public Health is ranked #9 in the country by U.S. News and World Report.

Supportive environment. With a student-to-faculty ratio of 3:1 (less than 2:1 for PhD students), class sizes are small and faculty are invested in the success of each student.

Great place to be. Minneapolis and St. Paul —the 16th largest metropolitan area in the U.S. with a population of more than 3.5 million—is vibrant, diverse, and widely recognized for its affordability and high quality of life.

ADMISSIONS

Students with a strong quantitative background and interest in biomedical research are best suited for academic success in biostatistics. No prior coursework in biology is needed.

PREREQUISITES

- 3 semesters of calculus (including multivariable calculus)
- 1 semester of linear algebra

RECOMMENDATIONS

- Undergraduate coursework in probability and mathematical statistics is not required, but is strongly recommended.
- Experience with a programming language (e.g., R, Java, C, Python) and exposure to applied statistics is helpful, but not required.
- Real analysis or an equivalent proof-based course is recommended for students applying to the PhD program.

NOTE FOR PHD

If your goal is to obtain a PhD in Biostatistics, we encourage you to apply directly to the PhD program, even if you don't already hold a master's degree. If you are not admitted to the PhD and do not hold a previous master's degree in statistics or biostatistics, you will be considered for admission to the master's program if you indicate your interest in your SOPHAS application.

FINANCIAL SUPPORT

All admitted PhD students are guaranteed four to five years of financial support including tuition, health insurance, and an annual stipend.

Master's students are often able to secure funding through a wide variety of available teaching and research assistantships.

The Division of Biostatistics administers an NIH training grant in genetics. These grants provide support to eligible students (U.S. citizens and permanent residents) who are interested in receiving focused training in this area.

CAREERS

With the rise of big data, biostatistics is a rapidly developing field and demand for biostatisticians is very high. Most students have a job lined up prior to graduation.

Graduates are highly sought out by public and private organizations and research institutions including: universities, government agencies (NIH, FDA, CDC), pharmaceutical companies, medical device manufacturers, and health insurance companies.

STUDENT SPOTLIGHT

Abhirup Datta (Biostatistics, PhD '16) is currently an associate professor in Biostatistics at John's Hopkins Bloomberg School of Public Health. As a doctoral student at University of Minnesota (UMN), Abhirup was a member of a UMN team who developed a new statistical model designed to use global plant data to accurately estimate the amount of greenery across the Earth and its effects on the environment. The model will be used to produce highly detailed maps projecting various climate change scenarios associated with plant coverage. *(Abhirup is pictured here with Michael T. Osterholm, UMN School of Public Health professor and director, Center for Infectious Disease Research and Policy)*

FOR MORE INFORMATION
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