

# School of Natural Sciences and Mathematics

Master of Science in Bioinformatics and Computational Biology



## Program Description

The Master of Science in Bioinformatics and Computational Biology is an interdisciplinary program at the University of Texas at Dallas, offered jointly by the Departments of Mathematical Sciences and Biological Sciences. Combining coursework from the disciplines of Biology, Computer Science, Mathematics and Statistics and incorporating research-based experiences with faculty members into the curriculum, the program caters to the growing demand for scientists who have cross-disciplinary expertise.

Taught by top-tier faculty of the School of Natural Sciences and Mathematics, the Bioinformatics and Computational Biology program offers a choice between two tracks that accounts for students' educational backgrounds: 1) students with a general background in science and engineering or 2) students with a more focused background in biological sciences.

Both tracks offer a choice between elective groups designed to help students build additional expertise in one of three specialized subfields—Computer Science, Statistics or Biology—and both offer opportunities to conduct research alongside accomplished faculty members. These tracks and elective groups allow students to customize their degree program based on their academic backgrounds, intellectual interests, and career aspirations.

## Benefits

The Bioinformatics and Computational Biology master's program ensures that students gain a broad understanding of bioinformatics, computational biology, and related subfields; that they apply their knowledge and analytical skills to create effective and novel solutions to practical problems; and that they communicate and work effectively in collaborative environments.

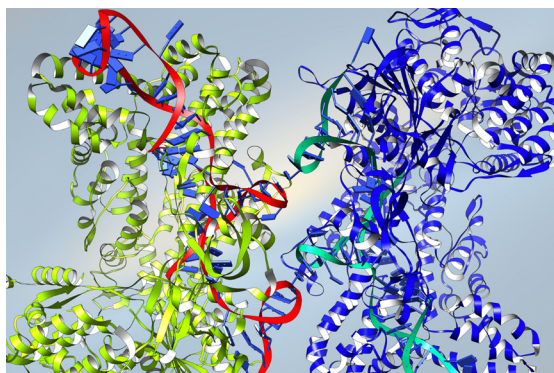
Other benefits include:

- **World-Class Faculty:** The program is led by faculty of the School of Natural Sciences and Mathematics who are widely cited experts in their respective fields.
- **Comprehensive Curriculum:** Courses in the Bioinformatics and Computational Biology master's program will introduce students to new ideas, technologies, and competencies while also teaching them the skills they'll need to thrive in competitive, ever-changing industries.
- **Facilities:** A cluster of buildings and research labs on the northwest side of campus comprise the over 300,000-square-foot space where students can explore the sciences including the famous Natural Sciences and Research Lab – the “mermaid building” and the Sciences Building. Opened in 2020, the 186,000-square-foot Sciences Building is home to state-of-the-art labs for advanced research in mathematical, biological, and physical sciences.
- **Location:** Situated in the greater Dallas region—recently rated by *Forbes* magazine as the #1 “Best City for Jobs”—UT Dallas provides students with easy access to employers and internship opportunities, not to mention a large and supportive alumni population.

## Career Opportunities

Graduates of the Bioinformatics and Computational Biology master's program go on to pursue professional careers in many different organizations and industries, such as:

- Biopharmaceutical and biotechnology companies
- Research labs
- Hospitals
- Universities
- Software companies



*Molecular structure of the CRISPR/Cas9 system. This molecular complex is fundamental for gene editing technologies and is the focus of state-of-the-art computational studies.*

## Contact Information

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[utdallas.edu/math/graduate/](https://utdallas.edu/math/graduate/)

For more information about careers in bioinformatics and computational biology, view the career page of the International Society for Computational Biology.

### Marketable Skills

Students gain expertise in the disciplines of Biology, Computer Science, Mathematics, and Statistics. They also gain practical experience by getting involved in research with faculty members. They are well prepared to pursue a career in biopharmaceutical and biotechnology industries, research labs, healthcare institutions, and software companies.

- Creative and critical thinking; specialized knowledge of bioinformatics methods, tools and practices; advanced understanding of statistical, scientific and technical language and how to use it; ability to analyze and interpret large quantities of data.
- Ability to interpret bioinformatics results in real-world terms; ability to communicate ideas of bioinformatics and computational biology to others clearly and succinctly.
- Ability to construct logical scientific arguments and conclusions with accuracy and clarity; proficiency in computer programming languages including R; ability to work on intellectual challenges.

### Application Deadlines and Requirements

Please take note of all application deadlines and visit the Apply Now webpage to begin the application process. See the Department of Mathematical Sciences and the Department of Biological Sciences website for additional information.

Applicants to the Bioinformatics and Computational Biology master's degree program should have:

- A bachelor's degree or its equivalent in Biology, Mathematics, Statistics, or in another science/engineering discipline, and must have completed at least one semester of Calculus.
- Test Scores: Currently optional.
- Letters of Recommendation: Applicants must submit 3 letters of recommendation from individuals able to judge the candidate's potential for success in the master's degree program.
- International applicants must submit a TOEFL score of at least 80 on the internet-based test. Scores must be less than two years old. See the Graduate Catalog for additional information regarding English proficiency requirements for international applicants.

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