DOCTOR OF PHILOSOPHY WITH A MAJOR IN BIOINFORMATICS

Participating Schools

• College of Computing
• School of Biological Sciences
• School of Biomedical Engineering
• School of Chemistry and Biochemistry
• School of Industrial and Systems Engineering
• School of Mathematics

Objective of the Program

The mission of the Georgia Tech Bioinformatics PhD Program is to educate and prepare graduate students to reach the forefront of leadership in the field of bioinformatics and computational biology; and to integrate research and education on the use of information technologies in biology and medicine. Thus, the program leading to a PhD in Bioinformatics is an interdisciplinary program spanning a variety of academic departments at Georgia Tech.

Bioinformatics is a multidisciplinary field in which life sciences, computer science, physical sciences, and engineering are merged to solve both fundamental and applied problems in biology and medicine. The outcomes of bioinformatics and computational biology particularly include:

• new and global perspectives into the organization and function of biological systems (fundamental biology);
• new and novel targets for drug discovery and development; and
• genetic/proteomic profiling for pharmaco-genomics or personalized medicine.

Thus, Bioinformatics is emerging as a strategic discipline at the frontier between Biology, Biochemistry, Biomedicine, Bioengineering, Computer Science and Mathematics, impacting fundamental science, medicine, biotechnology, and society.

With its broad mission statement, this program at Georgia Tech has the following focus / strength areas:

• Development of software tools, algorithms, and databases for gene identification, protein structural prediction, clustering analysis, and data mining.
• Application of bioinformatics to disease diagnosis, classification, prognosis, and treatment.
• Application of bioinformatics to fundamental biology and systems biology.

The requirements for each student in the PhD program in Bioinformatics include the successful completion of a set of core courses in Biology, Biochemistry, Mathematics, and Computer Science, while the main emphasis of the program is on the successful completion of an original and independent research project. Each student must also complete a minor program of study in accordance with Institute policies.

PhD Bioinformatics (http://bioinformatics.gatech.edu/)