

2016

# Graduate Certificate in Computational Molecular Biology Overview

Nova Southeastern University

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# Graduate Certificate in Computational Molecular Biology 2016

## About the Certificate

A recent report from Georgetown University indicated that the American healthcare sector of society will continue to grow, potentially creating >4 million new jobs by 2020. More than 80% of these new jobs will require advanced degrees ([GenomeWeb's 12th Annual Salary Survey](#)).

Part of this surge will include the analysis of DNA or "genomic" data (the complete set of coding instructions- A,C,G,T - required for an organism to live). For example, medicine will become more "personalized", since having one's own genome sequence could possibly better determine the probability of disease, or adverse effects to drugs based on unique genetic differences. Modern DNA sequencing has recently compared our genomes to that of our extinct ancestor, the Neanderthal, and found high levels of similarity and integration.

Therefore, in this context, this computational molecular biology certificate intends to assist students' entry into the genomics industry and workforce, projected to grow (see companies such as <http://dna.ancestry.com>). It will provide a solid foundation to both genomics and computer science fields, introduce bioinformatics theory, resources and databases, and enable a gateway to more advance studies in computational molecular biology.

### Gainful Employment Disclosure

- Interpret complex genomic data
- Manage large caches of genetic sequences
- Database management & applications
- Bioinformatics and data analysis
  - Four Courses (2 computer science & 2 molecular biology)
    - BCOR 5585: Genomics
    - BMME 8050 (MSIT 501): Foundations of Programming
    - BMME 8051 (MMIS 630): Database Management and Applications
    - BMME 8053: Introduction to Bioinformatics
  - Available online/in house
  - Courses do not have to be taken over consecutive semesters
  - Enrollment at any term
  - Applicants with any undergraduate major will be considered for admission.

### Admissions Information

All of NSU's programs are fully accredited by the Southern Association of Colleges and Schools.