A major in the biological sciences is not only a stepping stone towards medical school and a career as a medical doctor, but a major in Biology also provides one with opportunities that extend beyond the medical field. Biology majors pursue work in fields such as Medicine, Dentistry, Medical Technology, Physician Assistantship, and Physical Therapy; research in fields from cells and molecules to organisms to ecosystems; and education at both the high school and collegiate levels. Biology is a comprehensive major, which provides students with competency in not only the biological sciences, but also the chemical sciences, physics, mathematics, and computer science.

Biology majors have numerous employment options both within and outside of the health sciences field. CSI offers elective courses in cell biology, Botany, Marine Biology, Genetics, Neurosciences, Ecology and more, preparing students for careers in their chosen profession. Biology coursework also prepares students for careers in the government and private sector. Equipped with research, critical thinking, experimentation, and data analysis skills, biology graduates may pursue careers in market research, regulatory affairs, quality control, environmental or medical law. From all subdisciplines in Biology to lobbying and science policy analysis, biology graduate career opportunities abound.

**Degrees Offered**
The College of Staten Island offers the Bachelor’s degree in Biology with an option in Bioinformatics and Adolescent Education and a Master of Science degree in Biology with an option in Biotechnology. The department participates in the joint program for the Bachelor’s degree in Biochemistry and a minor in Biochemistry, and in the interdisciplinary program leading to the Bachelor’s degree in Medical Technology (More Med. Tech. information can be found on the Med. Tech fact sheet).

The department is also active in the University’s Doctoral program in Biology.

**The Undergraduate Major**
Biology majors choose from five tracks once the major is declared: i) Ecology, Evolution and Behavioral Biology; ii) Bioinformatics; iii) Molecular, Cellular and Developmental Biology; iv) Neuroscience; and v) Health Science. Students may also opt for the Biology/Adolescence Education option. Students must complete pre-major courses before they can declare their major, and these courses must be completed with a minimum grade of C.

**Biology Prerequisites**
- All four of the following courses:
  - BIO 170 General Biology I ................................(3 cr.)
  - BIO 171 General Biology I Laboratory ..................(1 cr.)
  - BIO 180 General Biology II ................................(3 cr.)
  - BIO 181 General Biology II Laboratory ..................(1 cr.)
- One of the following three units:
  - MTH 230 Calculus I with Pre-Calculus .................(6 cr.)
  - MTH 229 Calculus Computer Laboratory .................(1 cr.)
  - or
  - MTH 231 Analytical Geometry and Calculus I ...........(3 cr.)
  - MTH 229 Calculus Computer Laboratory .................(1 cr.)
  - or
  - MTH 235 (MTH 235 Accelerated Calculus I, Mathematics Minor) Accelerated Calculus I .................(5 cr.)
  - MTH 229 Calculus Computer Laboratory .................(1 cr.)
- One of the following two courses:
  - MTH 214 Applied Statistics Using Computers ..........(3 cr.)
  - BIO 272 Biometrics ...........................................(4 cr.)

**Biology/Bioinformatics Prerequisites**
- All four of the following courses:
  - BIO 170 General Biology I .................................(3 cr.)
  - BIO 171 General Biology I Laboratory .................(1 cr.)
  - BIO 180 General Biology II ................................(3 cr.)
  - BIO 181 General Biology II Laboratory .................(1 cr.)
- One of the following three units:
  - MTH 230 Calculus I with Pre-Calculus .................(6 cr.)
  - MTH 229 Calculus Computer Laboratory .................(1 cr.)
  - or
  - MTH 231 Analytical Geometry and Calculus I ..........(3 cr.)
  - MTH 229 Calculus Computer Laboratory .................(1 cr.)
  - or
  - MTH 235 (MTH 235 Accelerated Calculus I, Mathematics Minor) Accelerated Calculus I .................(5 cr.)
Members of the CUNY Research Foundation tour the Advanced Imaging Facility. Here Professor William L’Amoreaux describes and electron micrograph of a vaso vasorum. The image was captured by CSI valedictorian Evelyn Okeke.

Honors
The honors program in Biology is available to seniors with at least a 3.50 GPA. The program requires a minimum of one year to complete. Students may receive up to eight credits for independent study (BIO 594) while completing the honors program; they do not automatically gain entrance however, into the honors program by registering for independent study.

To be accepted into the honors program, the student must first obtain approval from a full-time member of the department, who will serve as that student’s adviser, to carry out an honors research project. The student must then prepare and present a detailed written preliminary proposal of the honors research project for approval to a three-member departmental committee. Students are accepted into the program on the recommendation of this committee. The committee’s recommendation is based on its evaluation of the preliminary proposal. The student will meet with his or her committee midway through the first semester for evaluation of the project. In addition, the student will submit a written progress report to the committee at the end of the first semester. On the basis of this report, the committee will decide whether the student should proceed further. If the student does not continue in the honors program, he or she may still acquire the credits for independent study.

When the research is completed, the student is required to write up the research in the form of a thesis that will be evaluated at early and final stages by the committee. The thesis format must adhere to that used by leading biological journals, or as outlined in the AIBS style manual. The ultimate decision on thesis format lies with the committee.

Because it will take at least one year to complete the honors program in Biology, it is suggested that the student begin work during the summer immediately following the junior year.

Graduate Studies in Biology
The Master of Science degree program in Biology is designed to provide research training and experience in the discipline of biology and allows students to specialize in such areas as molecular/cellular experimentation and evolution, ecology, and behavior. The program is an appropriate foundation for students whose current goal is a terminal master’s degree as a credential for laboratory or field research and for students who intend to continue to study toward the doctorate.

A second track within the MS in Biology program is the Biotechnology track. Students in this track combine coursework with research opportunities in the biotechnology industry or biotechnology-related research in higher education.

The MS program in Biology is coordinated by Dr. Shailbal Mitra and the Biotechnology track is coordinated by Dr. William L’Amoreaux. Dr. Dan McCloskey serves as chair of the advisory committee for pre-medicine students.

![BIOLOGY](image)

**FACTS IN BRIEF (continued)**

**MTH 229** Calculus Computer Laboratory ..........(1 cr.)

**BIO 272** Biometrics ........................................(4 cr)

**CSC 126** Introduction to Computer Science ......(4 cr)

**Honors**

The honors program in Biology is available to seniors with at least a 3.50 GPA. The program requires a minimum of one year to complete. Students may receive up to eight credits for independent study (BIO 594) while completing the honors program; they do not automatically gain entrance however, into the honors program by registering for independent study.

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**Annual Salaries**

**Careers in Biology**

| 1–4 years experience* | ..............................................$44,784 |
| Entry level Biologist* | ..............................................$42,379 |

*Source: Payscale.com, Based on 2014 Median Salary for Bachelor of Science in Biology.

**Entry level Research Scientist*** ..............$69,965

**Microbiologist Median Pay in 2012†** ..............$66,280

**Growth rate for Microbiologists, from 2012–2022†** ..............................................7%

†Source: Bureau of Labor Statistics, US Dept. of Labor

**Department of Biology • Building 6S, Room 143**

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