

# Computational Biology

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The Center for Computational Molecular Biology (CCMB) offers Ph.D. degrees in Computational Biology to train the next generation of scientists to perform cutting edge research in the multidisciplinary field of Computational Biology. During the course of their Ph.D. studies students will develop and apply novel computational, mathematical, and statistical techniques to problems in the life sciences. Students in this program must achieve mastery in three areas - computational science, molecular biology, and probability and statistical inference - through a common core of studies that spans and integrates these areas.

The Ph.D. program in Computational Biology draws on course offerings from the disciplines of the Center's Core faculty members. These areas are Applied Mathematics (APMA), Computer Science (CS), the Division of Biology and Medicine (BioMed), Brown Center for Biomedical Informatics (BCBI), and the School of Public Health/Biostatistics (SPH). Our faculty and Director of Graduate Studies (DGS) work with each student to develop the best plan of coursework and research rotations to meet the student's goals in their research focus and satisfy the University's requirements for graduation.

Applicants should state a preference for at least one of these areas in their personal statement or elsewhere in their application. In addition, students interested in the intersection of Applied Mathematics and Computational Biology are encouraged to apply directly to the Applied Mathematics Ph.D. program (<http://www.brown.edu/academics/applied-mathematics/graduate/>), and also to contact relevant CCMB faculty members (<https://www.brown.edu/academics/computational-molecular-biology/about/people/faculty-and-staff/>).

Our PhD program assumes the following prerequisites: mathematics through intermediate calculus, linear algebra and discrete mathematics, demonstrated programming skill, and at least one undergraduate course in chemistry and in molecular biology. Exceptional strengths in one area may compensate for limited background in other areas, but some proficiency across the disciplines must be evident for admission.

- Ph.D. Program Overview & Handbook ([https://www.brown.edu/academics/computational-molecular-biology/sites/brown.edu.academics.computational-molecular-biology/files/uploads/Comp%20Bio%20Ph.D.%20Program%20requirements%20%26%20handbook\\_1.pdf](https://www.brown.edu/academics/computational-molecular-biology/sites/brown.edu.academics.computational-molecular-biology/files/uploads/Comp%20Bio%20Ph.D.%20Program%20requirements%20%26%20handbook_1.pdf)) (pdf file)
- FAQ (<http://brown.edu/academics/computational-molecular-biology/frequently-asked-questions/>)

The application process to the CCMB graduate program is run through the Graduate School (<http://www.brown.edu/academics/gradschool/>)