# What Can I Do With a Major in Mathematical and Computational Biology?

Below is a list of job titles, employers and graduate schools that Harvey Mudd College mathematical and computational biology alumni have chosen in the last five years.

## Job Titles

Associate Computational Biologist
Bioinformatics Analyst
Computer Science Introductory Course Coordinator
Consultant
Fisheries Biologist
Junior Anesthesia Specialist
Math Teacher
Program Manager
Project Coordinator
Research Associate
Software Engineer
Solutions Engineering Analyst
Store Manager
Volunteer

## Employers

Broad Institute
California Department of Fish & Game
Collaborative Drug Discovery
Deallus Group
Deloitte
Goldman Sachs
Harvey Mudd College
Helix
Intellectual Ventures
Laserfiche
Marathon Sport
MBio Diagnostics
Microsoft
Peace Corps
The Webb Schools
UC Irvine Medical Center
University of California, Berkeley

## Starting Salary Summary

**High Salary Range**
$75,000–$120,000

**Low Salary Range**
$45,000–$54,999

**Median Salary Range**
$65,000–$69,999

## Graduate Schools

American Museum of Natural History
Arizona State University
California Institute of Technology
Duke University
Georgia Institute of Technology
Humboldt State University
Johns Hopkins University
Pacific Northwestern University of Health Sciences
Tufts University
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of California, San Francisco
University of California, Santa Cruz
University of Iowa-Carver College of Medicine
University of Washington

## Summer Employers

Amazon
Boston University (psychology lab internship)*
Broad Institute
Climate Change Working Group
DxTerity Diagnostics
GKRH
Johns Hopkins Hospital (REU)*
Los Alamos National Laboratory*
NIMBioS (REU)
Oregon Health and Science University
San Diego Zoo Institute for Conservation Research
Southwest Fisheries Science Center
Trinity County Resource Conservation District*
U.S. Environmental Protection Agency*

**companies that hired first-year students*

## Average Summer Wage

**First-year**
$3,670 stipend

**Sophomore**
$4,540 stipend

**Junior**
$5,040 stipend

Here are just a few areas that may interest a mathematical and computational biology major.

| Area | Employers |
|---|---|
| **PROGRAMMING** | |
| Systems | Software and computer companies |
| Scientific application | Research laboratories |
| Project management | Colleges and universities |
| Testing | Governmental agencies |
| | Management consulting firms |

Areas of interest for a mathematical and computational biology major (CONTINUED)

| Area | Employers |
|---|---|
| **SYSTEMS DEVELOPMENT**<br>Analysis<br>Design<br>Support<br>Quality assurance<br>Data processing | Local, state and federal government<br>Financial institutions<br>Insurance companies<br>Consulting firms<br>Manufacturers<br>Technology companies<br>Research institutions |
| **INTERNET**<br>Software design<br>Systems analysis | Online service providers<br>Computer/equipment vendors<br>Internet-related companies (browsers, search engines, web design services) |
| **PROGRAMMING**<br>Systems<br>Scientific application<br>Project management<br>Testing | Software and computer companies<br>Research laboratories<br>Colleges and universities<br>Governmental agencies<br>Management consulting firms |
| **BIOTECHNOLOGY**<br>Research and development<br>Education | Pharmaceutical companies<br>Biotech firms<br>State and federal government laboratories and agencies<br>Agricultural industry<br>Colleges and universities |
| **GENETICS**<br>Research and development related to animals, plants and humans<br>Genetic counseling | Pharmaceutical companies<br>Biotech firms<br>Government laboratories (e.g., U.S. Department of Agriculture, U.S. Fish and Wildlife Service and National Institute of Health)<br>Hospitals and medical centers |
| **MICROBIOLOGY**<br>Research and development<br>Education<br>Quality control | Pharmaceutical companies<br>Private research foundations<br>Hospitals and public health facilities<br>Food, chemical, pharmaceutical and cosmetic companies<br>Environmental and pollution control agencies<br>Museums, national and state parks<br>Zoological/botanical gardens |

## What You Can Do Now

- Obtain summer research, part-time, volunteer, or internship experience to test the fields of interest and gain valuable experience
- Develop strong computer, mathematics and verbal and written communication skills
- Take additional courses in chemistry, physics, economics and statistics
- Complete an undergraduate lab research project with a professor
- Learn federal, state and local government job application processes since these are large employers of this major
- Become familiar with entrance exams for graduate school in your area of interest
- Build relations with faculty for research opportunities and later letters of recommendation

## What You Can Do After Graduation

- An undergraduate degree is often sufficient for entry-level positions, such as laboratory assistant, technician, technologist or researcher, but an advanced degree may open more doors and definitely more upper-level positions.
- A master's degree will be helpful for advanced positions or for consulting jobs. Some community colleges will hire master's level teachers.
- A PhD is needed for academic positions and certain areas of research.