

## **Microbial Biology Career Snapshot**

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**Microbial Biology (MB)** concentrates on the study of microbes – microorganisms such as bacteria, fungi, algae, protozoa, and viruses that compose the overwhelming majority of the earth's biological mass. The discipline focuses on the interactions between microorganisms and the environment, and investigates the fundamental roles that microbes play in maintaining the health of our biosphere. This includes how microbes can be used to help combat environmental pollutants, facilitate energy production, and influence the progress of medical research on infectious diseases. For students heading toward medical school or other health professions, or for those interested in biology in general, the major provides an excellent foundation in the biological sciences. Offered by the Department of Plant and Microbial Biology (PMB): <http://pmb.berkeley.edu>

### **Key Skills**

- Develop your research skills through classroom, lab, or field work. Gain experience conducting a research project, whether it is one you design independently or one you collaborate on with a faculty member or graduate student. Determination, follow through, organization, and attention to detail are key elements of the investigative process within the biological sciences.
- Learn how to effectively scrutinize, analyze, and interpret data. You increase the likelihood of your success in this field if you are able to think in logical, innovative, and creative ways.
- Strive to communicate clearly and well, though the development of excellent writing and speaking skills. It is important for you to present the results of your scientific work to technical and non-technical audiences, because biologists often write grant proposals or reports to secure research project funding. Practice your communication skills by sharing your research in the form of a paper, report, research poster, or public presentation.
- Stay on top of the latest technology and techniques by getting hands-on experience with laboratory equipment and computer software for data analysis or simulations. Your technical skills will prove to be valuable when you are seeking graduate or professional school admission, or your first job.

### **Career Pathways**

Our graduates gain a solid understanding of biological principles at the micro level and receive strong scientific training that teaches micro-analytic approaches to biological problem solving. The Microbial Biology degree offers outstanding preparation for students interested in graduate education in the biological, medical, or other health sciences. The degree is also well suited for students who intend to pursue careers related to biology, science in general, or technology, such as those involving technical research in government, academia, or industry, including biotechnology. Graduates can also pursue a range of careers that go beyond the scope of the discipline in areas such as health or environmental consulting, science teaching, technology, or technical writing and editing.

### **Public and Non-Profit Sector Jobs**

- **Non-profit health organizations or institutes:** Work in public health laboratories or facilities, clinics and hospitals, biomedical research institutes such as the Howard Hughes Medical Institute, or with control boards, to manage programs or do research aimed at improving health and preventing disease.
- **Various governmental agencies:** With a background in the biological sciences, conduct research or consult for federal, state, or local government laboratories, agricultural experiment stations, environmental and pollution control agencies, or service agencies, such as the National Institutes of Health, University of California Cooperative Extension, or the Environmental Protection Agency.
- **Teaching and research:** Teach or do research in the biological sciences at colleges and universities, in particular those with professional schools of medicine, nursing, pharmacy, dentistry, public health, veterinary medicine, forestry, or agriculture.

## Private Sector Jobs

- **Health industry:** Pursue a career as a health professional in medicine, nursing, pharmacy, physical therapy, dentistry, optometry, and other similar fields. Be involved in research and development of pharmaceuticals or cosmetics.
- **Industrial laboratories:** Conduct laboratory testing and other research for companies dealing with biotechnology, agriculture, food or chemical processing and manufacturing, or textiles.
- **Private research foundations or institutes:** Direct research projects or programs focusing on specific topics of interest to a particular organization, such as new and emerging infectious diseases.
- **Technology industry:** Put your technical skills to use in various fields related to technology, such as software engineering, computer programming, web design, or web consulting.
- **Communications and media:** Work in technical writing or editing for newspapers or publishing companies, including scientific magazines, professional journals, periodicals, textbooks, or biological books. Combine creative skills in art with knowledge in biology to do biological/medical illustrating or photography for health science institutions, research centers, pharmaceutical companies, government, museums, or zoological societies.

## Recent Alumni: Where Are They Now?

The Microbial Biology major was created in fall 2001, so we currently have limited information about the employment or graduate school destinations of students pursuing this degree. However, the success of graduates from other majors in the College of Natural Resources is a good reflection of the types of career paths that Microbial Biology students can follow as well. Courtesy of the UC Berkeley Career Center, take a look at what recent Cal alumni are doing now:

<http://career.berkeley.edu/Major/major.stm>

Weill-Cornell Medical College, Research  
Coordinator in Pediatric Infectious Diseases

Biology, PhD, Massachusetts Institute of Technology  
Medical School, MD, University of Washington  
Molecular Microbiology, PhD, Tufts University, New  
England Medical Center

## Internship & Career Resources

- **CNR Newslines:** The College of Natural Resources Newslines is a moderated listserv that will keep you in the loop about research opportunities, internships, job opportunities, and more. To subscribe to *CNR Newslines*, send an email from your primary email account to [majordomo@listlink.berkeley.edu](mailto:majordomo@listlink.berkeley.edu). Leave the subject heading blank. In the body of the message, type the following command: **subscribe cnr\_newslines**
- **CareerMail:** These Career Center mailing lists target specific career fields and topics, so you can choose whichever ones are ideal for you.  
<http://career.berkeley.edu/MailList/MailList.asp>
- **Internships**  
<http://career.berkeley.edu/Internships/internships.stm>
- **CalJobs:** Search this comprehensive database for full-time, part-time, internship, and summer jobs, both on and off campus.  
<http://career.berkeley.edu/Jobs/CalJobs.stm>
- **Health Careers**  
<http://career.berkeley.edu/Health/Health.stm>
- **UC Berkeley Career Center**  
<http://career.berkeley.edu>