

**Careers for Biology Majors  
and How to Prepare Yourself for Them**

**I. General steps to consider**

**A. Choosing a career**

1. **What am I like, what do I like to do, what do I do best?**
2. **What careers are out there, and what are they like?**
  - a. How many job opportunities can I expect, and in what areas of the country are they located?
  - b. What kinds of satisfaction do the careers offer?
3. **How can I focus my efforts** without prematurely eliminating options that might be good for me?

**B. Preparing for a career, or a set of careers from which I can choose later**

**1. Formal education**

- a. What courses should I be taking now?
- b. What graduate/professional degree(s) and/or certification(s) will I need?

**2. Other experiences**

- a. Part-time or full-time temporary (summer) research, employment, volunteer work *while* an undergraduate can be very valuable
- b. Full time employment *after* finishing undergraduate degree can be a “stepping stone” to further education/opportunities

**II. Clinical/laboratory health careers**

See list of Health-related Professional Organizations

**III. Careers for biologists outside of health care**

(Although some jobs may be related to health fields!)

**A. Research/teaching jobs - biology is the major focus**

1. **Kinds of research and teaching vary**, as do the proportions of the two activities
  - a. Junior/senior high school teacher - mostly all teaching; need ability to work with youth.
  - b. Non-academic scientist in corporate, non-profit, or governmental organization - **Many people don't realize that:**
    - Many companies need biologists, not just biotechnology companies
    - More than one-third of the nation's biologists work in the private sector
  - c. College/university professor - mix of research and teaching varies from virtually all teaching to virtually all research

## 2. How to prepare

- a. Secondary school teaching requires certification – see the Department of Education
- b. People at all levels (Bachelors, Masters, Doctorate) do research – many work for a while before completing their education
- c. Most college/university positions require a Ph.D. – your chances of being accepted into a good Ph.D. program (and your motivations, ability to select a good program, etc.) are greatly enhanced if you do some research before graduate school

## B. Careers other than biology scientist/teacher

1. **Sales of biology-related products** (pharmaceuticals, laboratory equipment and supplies, etc.)
2. **Science writer, editor**
3. **Agriculture/lumber (food and fiber) industry**
4. **Horticulture** (landscaping, nursery)
5. **Government inspector** (health, agriculture)
6. **Game warden**
7. **Non-biological technical careers** (*e.g.* computers)
8. **Mortician/funeral director**
9. **Anything and everything**

## IV. Graduate training in biology (Masters and Ph.D.)

### A. General information

1. **Some programs are general** – the degree is called “Biology” – common at masters degree level
2. **Some programs, including most at the Ph.D. level, are in specific biological fields**
3. **Defining rigid boundaries between various fields of biology is often difficult and restrictive** – choose a program that lets graduate students do thesis work in any department in which research related to the program's area is being done
4. **What areas of biology interest you?**

___	Agricultural Sciences	___	Forestry
___	Anatomy	___	Genetics
___	Biochemistry	___	Immunology
___	Biophysics	___	Marine Biology
___	Biotechnology	___	Microbiology
___	Botany	___	Molecular Biology
___	Cell Biology	___	Neurobiology
___	Developmental Biology	___	Parasitology
___	Ecology	___	Physiology
___	Entomology	___	Pharmacology
___	Environmental Sciences	___	Radiation Biology
___	Evolutionary Biology	___	Veterinary Sciences
___	Fish, Game, and Wildlife Management	___	Virology
		___	Zoology

5. **Get together with a faculty member of your choice**, and just talk about graduate education and the life of a university professor.
6. **Ask faculty** to get you in touch with a Creighton alumnus/alumna who is now in, or who recently completed, graduate training in an area of interest to you and who would be delighted (as most all would be) to answer questions you may have.

## B. Preparing for and applying to graduate school

### 1. Get information on programs

- a. Write to, or email, the school of interest (searching the web will often yield information and email addresses)
- b. Addresses and information found online and in:
  - *Peterson's Guide to Graduate Programs in Biological, Agricultural, and Health Sciences* (in Reinert Alumni Library and Career Services Office)
  - Posters in Hixon-Lied and Rigge Science Buildings
  - Literature held by biology faculty and in the Biology office

### 2. Take the GRE (required by virtually all schools, including Creighton)

- a. Get the GRE Information Bulletin from the Graduate School (Room 132 in Creighton Hall) or online at [www.ets.org](http://www.ets.org)
- b. Note test dates and registration deadlines
- c. Note approximate score report mailing date – be sure to take test early enough
- d. Most schools require both the General Test and either the Biology Subject Test or the Biochemistry, Cell and Molecular Biology Subject Test
- e. There are many test locations throughout the country, including Omaha

### 3. Apply to schools of your choice

- a. Complete and send application forms provided by school(s)
- b. Have GRE scores sent
- c. Have letters of recommendation sent – not the same letters used for applications to professional (medical, dental) schools, though the same referees may write both for you
- d. If schools are interested in you, they will invite you to visit, **often at their expense**

### 4. Fellowships

**Many people don't realize that most good Ph.D. programs in biology pay you!**

- a. Most graduate students receive full tuition remission, health insurance, and a stipend (approx. \$20k or more per year) to live on
- b. Although schools have funds to support students, they can accept more students if at least some of them receive their own support from the government or a private foundation – for information on national fellowships in general, see the Fellowships page of the National Research Council:

<http://sites.nationalacademies.org/pga/fellowships/>

## V. Part-time and/or temporary (e.g. summer) opportunities

### A. Summer courses/research opportunities

1. See **bulletin boards** in the Hixson Lied or Rigge Science Buildings

2. **Summer research opportunities** may exist at Creighton
  - See faculty in your area of interest
- B. **Several Omaha organizations besides Creighton have part-time and/or temporary opportunities** – for example:
  - Douglas County hires part-time Laboratory Aids in the community health clinics
  - The Office of Student Employment gets many requests from area employers looking for student help

## VI. “Permanent,” full-time jobs with a Bachelor’s in biology

For people without a graduate degree or professional certification

- A. **Career Services**, located in the Harper Center, Suite 2015  
<http://www.creighton.edu/careercenter/>
  1. **The Career Services staff can really help you:**
    - a. Discover what you could do (and would enjoy doing) best
    - b. Discover what needs employers have, and identify where the jobs are
    - c. Devise a strategy for landing a job that's right for you
      - Get your resume made and on file – the Career Services office will send it out to employers who contact the office
      - Contact employers yourself
  2. **Few recruiters looking for scientists come to Creighton** (unless they want pharmaceutical sales people), because we have a reputation among employers of being a pre-med college. **Just don't assume the list of on-campus interviews represents the entire job market!**
- B. **Research Assistant in a biomedical sciences laboratory**
  1. **Prepare a resume and cover letter** and submit to personnel offices and to individual departments of the following types of organizations:
    - a. Medical, dental schools
    - b. Teaching/research hospitals (*e.g.* Creighton University Medical Center, Boys Town National Research, University, and Veterans Administration Hospitals in Omaha).
    - c. Non-profit foundations (*e.g.* Eppley Cancer Center in Omaha)
    - d. Companies hiring biologists (*e.g.* Conagra, Streck Laboratories in Omaha)
  2. **Annual starting salary** range is about \$20-45k/year
  3. **A good research job** for a couple of years will help your chances of being accepted in a top graduate program, and give you a chance to decide what you want to do
  4. **Look for notices** in the back of every issue of Science magazine or at:  
<http://sciencecareers.sciencemag.org/>  
as well as in the classified section of the local newspaper. Some opportunities are posted on the "Jobs" board near the Biology office.
- C. **Research Assistant in field-type (“outdoor”) biology**
  1. **Government jobs**

- a. Federal - Federal job openings are processed in one of two ways. Agencies hiring many biologists may have authority to do “direct hiring,” *i.e.* not through the Office of Personnel Management (formerly known as the U.S. Civil Service Commission). However, these agencies hire many (and other agencies hire **all**) of their biologists through the O.P.M., so contact the agency of interest (*e.g.* Nat’l Park Service has a recorded “Job Openings” telephone number listed in the Blue Pages of the phone book), but also check the nation-wide listing of jobs available on-line at:  
<http://usajobs.opm.gov/>
  - b. **State and local** - contact the relevant offices
2. **Non-government jobs**
- a. Many companies need environmental specialists
  - b. The Career Services Office has an excellent resource for finding jobs in the non-profit sector (ACCESS network) at their web site:  
<http://www.creighton.edu/careercenter/>.
- D. **Other jobs** (not biology) - again, see Career Services

A good word from Jack Kirkwood, former Director of Career Planning and Placement at Creighton:

**“A biology major can do anything.”**

Don't limit your career options by defining yourself and your abilities solely on the basis of your major!