101 Things I Can Do With a Degree in Biology – and... How Can I Prepare for a Career

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Division of Biological Sciences: Do/Bio Center
Biological Sciences Student Association
April 11, 2013
Goals of the Info Session

1. Raise your awareness of career opportunities – and share tools
2. Put you on the path to reflect about your interests and aptitudes – and share tools
3. Make you aware of skills and abilities learned in your major and the general world skills you should develop – and share tools
4. Put you on the path for how to prepare for a career – and share tools
• Step 1: Become Aware of Career Paths...
## Fields in Biological Research

<table>
<thead>
<tr>
<th>botany</th>
<th>horticulture</th>
<th>Plat-taxonomy</th>
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</thead>
<tbody>
<tr>
<td>Bioethics</td>
<td>Horticulture</td>
<td>Evolutionary Biology</td>
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<tr>
<td>Paleobotany</td>
<td>Ecology</td>
<td>Environmental Science</td>
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<tr>
<td>Ichthyology</td>
<td>Forensic Biology /forensic Anthropology</td>
<td>Plant Taxonomy</td>
</tr>
<tr>
<td>Parasitology</td>
<td>Conservation Science</td>
<td>Ornithology</td>
</tr>
<tr>
<td>Wildlife Biology</td>
<td>Marine Biology</td>
<td>Vertebrate /invertebrate Zoology</td>
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## Fields in Biomedical Research

<table>
<thead>
<tr>
<th>Physiology</th>
<th>Pharmacology</th>
<th>Biochemistry</th>
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<tbody>
<tr>
<td>Molecular Biology</td>
<td>Bacteriology</td>
<td>Virology</td>
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<tr>
<td>Anatomy</td>
<td>Neurosciences</td>
<td>Cell Biology</td>
</tr>
<tr>
<td>Oncology</td>
<td>Genetics</td>
<td>Immunology</td>
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<tr>
<td>Physiology</td>
<td>Embryology</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>Bioinformatics</td>
<td>Virology</td>
<td>Systems Biology</td>
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Ways to Get Involved in Research

• As an undergrad
• As a research tech with a BS or MS
• As a grad student through a MS or PhD program
• In a university setting
• Pharma industry
• Biotech industry
• Agricultural industry
• Government research lab
• Private research institution
Healthcare

*Physician:*
Many specialties are available to a physician with either a:

- Doctor of Medicine (MD)
- Doctor of Osteopathy (DO)
- combined MD/PhD degree.
Healthcare

*Physician Assistant*: a 2-yr programs after a BS degree and are typically MS-level programs

*Medical Technologists*: 1 yr of clinical training in a hospital training program

*Opticians*: a doctoral-level program

*Orthopticians*: the treatment of lazy eye... is a 2-year program after a BS degree

*Podiatry*: doctor level program in foot care

*Pharmacy*: doctor level program

*Dentistry*: doctor-level program

*Physical Therapy/occupational therapy*: available both at MS and PhD level

*Epidemiology and public health*: MS/PhD programs

*Genetics counselor*: 2 year graduate program

*Audiologist*: diagnose and treat hearing and balance problems; Phd program

*Veterinarians*: 
Education

• The requirements for teaching vary.
• A teaching certificate with a BS degree is needed for teaching at the elementary school through high school levels.
• Teaching at the college, graduate school, and medical school levels typically requires a PhD degree, although some colleges and community colleges hire teachers with MS-level degrees.
Science Writing and Communication

• interested in writing as well as biology look at the following graduate program: http://scicom.ucsc.edu/apply/index.html

• Interested in art and illustration and biology look at the following graduate programs in Medical Illustrations: http://www.ami.org/medical-illustration/graduate-programs.html
# Science Writing and Communication Careers

<table>
<thead>
<tr>
<th>Writer of feature articles in scientific journals</th>
<th>Writer of science articles for newsmagazines</th>
<th>Textbook writer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook editor</td>
<td>Writer for local or regional newspaper</td>
<td>Writer of technical manuals</td>
</tr>
<tr>
<td>Scientific/medical illustrator</td>
<td>Broadcast journalist</td>
<td>Television show hosts (shows about nature, animals, science)</td>
</tr>
<tr>
<td>Creative writer</td>
<td>Copy editor</td>
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Industry

Diverse opportunities at many different levels:

• Market research
• Regulatory affairs
• Quality control
• Sales and marketing
• Product development and testing
• Scientific consultation
• Patent, environment or medical law
• Financial analysis
• Bioinformatics
• Biological entrepreneurship
• Public relations
Government

Careers with foundation in biology available at all levels of government:
• Environmental regulator
• Park ranger
• Lobbyist
• Water quality control specialist
• Waste management technician
• Science policy analyst
• Science policy researcher
• Food and drug admin researcher
• Admin/researcher for a nonprofit public interest group
• Manager of wildlife refuge
• Occupational health and safety specialist
Would You Like to Become a Lobbyist?

Two common tracks:

• Hired after college by corporations or orgs looking to influence legislators

• Natural progression after years of professional experience in a specific field

Check out:

http://education-portal.com/articles/Become_a_Lobbyist_Education_and_Career_Roadmap.html
Administration and Management

Yes... you can become an administrators with a Biology background:

- Manager of pharma firm
- Manager of biotech firm
- Human resource manager in biotech
- Fiscal manager in biotech
- Executive director of a professional society
Careers with Biology as a Foundation

Careers that require related degrees with a foundation in Biology:

• Nursing
• Crop Science
• Fish Farming
• Crop Consultant
• United States Agriculture Research
• Alcohol and Drug Abuse Research
• Soil Sciences
• Biofuel Research
• Dietetics/Nutrition
• Meat Production
• Poultry Sciences
Important Tools

- Career Service Center: https://careers.ucsd.edu/majors/contents/main.shtml
- BSSA Career Conferences: http://bssa.ucsd.edu/upcoming_events.html
  http://bssa.ucsd.edu/pdc.html
- Informal Interviews: see handout
- Talk to a faculty advisor: http://biology.ucsd.edu/undergrad/advising/fac-advisers.html
Reminder: Goals of the Info Session

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we just did # 1!
What are your interests and aptitudes?

Discover who you are:

• What are your dreams
• What are your interests
  Take a “Strong Interest Inventory” at the career center website: [http://career.ucsd.edu/undergraduates/explore-careers/career-assessment.html](http://career.ucsd.edu/undergraduates/explore-careers/career-assessment.html)
• What are your abilities
• What are your values
• What experiences do you have
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we just did # 2!
Skills and Abilities you Learn Through Your Major

Check out:

Let’s try to find a job...
• Genomatica:
https://home.eese.adp.com/recruit2/?id=4330741&1
• Lifetechnologies:
• Genentech:
http://www.gene.com/careers
What are Skills?
What are Abilities?

Skills: e.g., run a Western Blot
result from ACTUAL performance; measurable; involve use of hands, speech and mind; are developed and learned; can be improved over time

Abilities: e.g., critical thinking
suggest a capacity to perform;
abilities can over time become skills
may or may not improve over time
Additional Examples of Abilities

- Ability to motivate others
- Ability to lead a team
- Ability to interpret information
- Ability to multi-task
- Ability to prioritize and manage

➔ SOFT SKILLS
General Real World Skills You Should Graduate With

1. Effective oral and written communication skills
2. Critical Thinking and complex problem solving skills
3. Effective interdisciplinary teamwork and interpersonal skills
4. Effective cross-cultural collaboration in a diverse setting
5. Proactive ability for research (information literacy)
6. Demonstrated integrity and personal responsibility and how to apply in real world setting
7. Demonstrated understanding of global context and issues and their implications for the future
8. Demonstrated ability for self-reflection and self improvement, ability to seek and use feedback
9. Demonstrated local and global civic engagement
10. Leadership: demonstrated initiative, effective decision making, informed risk taking; ability to motivate and inspire others to a shared purpose
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we just did # 3!
How Do I Prepare For A Career?

Take Actions!

◆ Reflect
What am I interested in? Who am I?
→ Seek Diverse Experiences inside and outside the classroom

◆ Take inventory
What skills and abilities do I have?
→ Seek Diverse Experiences inside and outside the classroom

◆ Acquire skills and hone abilities
→ Seek Diverse Experiences inside and outside the classroom
Tools and Resources: Gaining Experiences

• Try on potential career and develop skills
  – Volunteer opportunities
  – Research Opportunities (during academic year, during summer; for credit; for pay)
  – Internship/job experiences
  – Service Learning opportunities
  – Study Abroad
  – Student Orgs
  – Job shadowing
Tools and Resources: Gaining Experiences cont...

Division of Biological Sciences Resource

◆ The Center for Discovering Opportunities in Biological Sciences

◆ Biological Sciences Student Association
http://bssa.ucsd.edu
Tools and Resources: Gaining Experiences cont...

UCSD Specific Resources

- UCSD Extension: LAUNCH Program
  http://extension.ucsd.edu/launch/

- International Center:
  http://icenter.ucsd.edu

- UCSD Rady School of Business:
  http://rady.ucsd.edu/undergrad/

- UCSD Career Center:
  Career.ucsd.edu

- Center for Student Involvement
  http://students.ucsd.edu/student-life/_organizations/student-involvement/index.html
Tools and Resources: Gaining Experiences cont...

General career development and job-hunting sites:

Science AAAS:
http://sciencecareers.sciencemag.org/

National Science Foundation (NSF): Research Opportunities for Undergraduates (REU)
http://www.nsf.gov/crssprgm/reu/

National Institute of Health
LifeWorks Careers
http://science.education.nih.gov/lifeworks

Internship Opportunities
http://science.education.nih.gov/home2.nsf/Careers/+Student+Internships+and+Opportunities
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But... you need to ACT!