101 Things I Can Do With A Degree In Biology – and... How To Prepare For A Career

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Have you ever wondered what it would be like to...

- apply for a patent
- pursue environmental law
- teach high school science
- describe research to a senator
- take a laboratory product to market
- sell scientific equipment
- write a press release
- start a company
- hire staff for a biotech company
Goals Of The Info Session

1. Raise awareness of skills and abilities learned in your major AND general real-world skills you should develop – *share tools for finding out more*

2. Increase awareness for how to prepare for a career – *share tools for finding out more*

3. Raise awareness of career opportunities – *share opportunities for experiencing and learning more about careers*

4. Highlight need to reflect about your interests, aptitudes and educational goals – *share tools for finding out more*
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Skills and Abilities you Learn Through Your Major

Check out:

- Skills and abilities learned in your major
Let’s try to find a job

- Genomatica: Lab Assistant
- Illumina: Research Associate 2
What is Knowledge?  
What are Skills?  
What are Abilities?

**Knowledge:** e.g., BS in Microbiology
- level of education, experience, training

**Skill:** e.g., running a gel
- something a person can learn or is learning or has learned.

**Abilities:** e.g., lead a team
- critical thinking skill
- Ability to interpret information
- Ability to multi-task
- Ability to prioritize and manage
Soft Skills

Employability Skills

Real World 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
Reminder: Goal of this part of the info session

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AND

general real-world skills you should develop – *share tools for finding out more*
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How Do I Prepare for a Career?
How Do I Prepare for Post-College Success?

Take Actions!

◆ Reflect, Take Inventory, Identify Interest

◆ Get Involved, Experience, Acquire and Hone Skills

➔ Seek Diverse Experiences inside and outside the classroom
Gaining Experiences & Developing Skills

– Research:
  • Bio Sciences Info Sessions
  • research portal

– Volunteer opportunities:
  • UCSD Volunteer Opportunities
  • Center for Student Involvement

– Internship/job experiences:
  • Student Internship
  • UCSD Career Center:
    – Peer Career Peer Educator Program
Gaining Experiences & Developing Skills ...continued

UCSD Specific Resources

• Biology Instructional Apprentice Program
  ➔ October 23 | 4-5pm | Bonner Hall 2130

• UCSD Academic Internship Program (AIP)
  ➔ View orientation on line

• UCSD Extension: LAUNCH Program
  ➔ Special info session!

• UCSD Rady School of Business
  ➔ November 4 | 2:30-3:20pm | Bonner Hall 2130
Gaining Experiences & Developing Skills...continued

– Service Learning opportunities:
  • UCSD Experiential Learning Consortium
  • Service Learning

– Study Abroad:
  • UCSD International Center
  • Bio Sciences’ Info Session

– Student Orgs:
  • Biology Student Orgs: Leadership Opportunities

– Job shadowing
Research:
Career Opportunities...continued

• Government research lab:
  – National Institute of Health
  – Department of Health and Human Services
  – US Food and Drug Administration
  – Center for Disease Control and Prevention

• Private research institution – e.g.: Salk Institute:
  – BS, MS degree: technician, lab manager
Tools and Resources: Gaining Experiences ... continued

Division of Biological Sciences Resources

◆ The Center for Discovering Opportunities in Biological Sciences

Do/Bio
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:
  http://www.jobs.nih.gov/vacancies/student/

- LifeWorks Careers:
  http://www.careerinfonet.org/explore/View.aspx?pageID=17
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Research:

• University
• Pharma industry/industrial biotech
• Clinics & Hospitals
• Agricultural industry
• Government research lab
• Private research institution
Opportunities, Advancements Determined By

• educational degree (BS, MS, PhD)

• professional experience

• type of professional setting/workplace
  (academe, industry, government, private research institutions)
Research: Career Opportunities...continued

• University:
  – Undergraduate: volunteer; 199 student; lab helper; technician
  – BS, MS degree: technician, lab manager
  – PhD student:
    – PhD: postdoc; research scientist; faculty

• Pharma industry/industrial biotech
  – Clinical Development: many roles of functions; many educational and professional backgrounds, incl. BS
  – Research & Development (R&D):
    • BS or MS: research associate, senior associate (glass ceiling!)
    • PhD: scientist, chief scientific officer, VP of R&D
Learning More About Career Opportunities

• Info session about summer research
  http://biology.ucsd.edu/education/undergrad/research/sum-research.html

• Info session about graduate schools

• BSSA Life Science Spring Qtr.

• Informal interview


• Career center
  – Thinking about Grad School
Industry Career Opportunities

Diverse Opportunities - Four Areas:

• **Services:** management & consulting; venture capital & banking; law; recruiting;

• **Operations:** Manufacturing; Quality Control; technical support; product development; project management;

• **Commercial Operations:** business development; corporate communications; product support; sales; marketing;

• **Research and Development (R&D):** medical affairs; regulatory affairs; clinical development; project management; product development; preclinical research; discovery research;
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Experiencing Careers In Industry

Industry Internships - Examples:

ThermoFisher

Genentech

Find More:

Career Center: Internship Supersite
Learning More About Industry Career Opportunities

- BSSA Life Science Career Qtr.
- Science Magazine Article
- Career Center:
  - Career Center Workshops and Info Sessions
- US Department of Labor: Career One Stop; labor statistics
- Informal Interviews
Teaching Careers

Educational requirements for teaching positions vary:

• teaching at the elementary school through high school levels:
  – BS plus Teaching certificate (example: UCSD Education Studies)
  ➔ Note: MS degree advantageous

• Teaching at the college, graduate school, and medical school:
  – requires a PhD degree, plus postdoc
  – community colleges may hire teachers with MS-level degrees
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Experiencing Teaching

- getting a minor in Science Education
- getting a minor in Education Studies
- volunteering in underserved schools via the Partners at Learning Program
- volunteering via the Marshall College Partnership School Program
- Becoming an Undergraduate Instructional Apprentice
Learning More About Careers In Teaching

• Bio Info Session
• Instructional Apprentice Info Sessions

• Career Center: Education and Counseling

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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
Opportunities, Advancements Determined By

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Government
Career Opportunities

... 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
Government
Career Opportunities

• Careers in Science Policies (need a PhD):
  • Find our more:
    http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2003_02_07/nodoi.2077985542189967389

• Government Agencies:
  – National Institute of Health
  – Department of Health and Human Services
  – US Food and Drug Administration
  – Center for Disease Control and Prevention
Opportunities, Advancements Determined By

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Government
Career Opportunities ...*continued*

• Experiencing career possibilities: [Internships](#)

• Learning more about them:
  
  – [USA Jobs](#)

  – [Job openings](#)
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
Opportunities, Advancements Determined By

• educational degree (BS, MS, PhD)

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Key Messages?

1. BS degree is an educational crossroad:
   • Opportunities w/BS
   • More opportunities with advanced educational degrees

2. BS degree is a foundation:
   Opportunities to enter broad field of careers

3. Hands-on experiences matter
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Raise awareness of career opportunities – share opportunities for experiencing and learning more about careers.
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Discover who you are!

**Taking inventory:**

- 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
Discover who you are!  ...continued

Gaining experiences:

- Volunteer in a lab
- Do an internship
- Become an undergraduate instructional assistant
- Join a student org
- Take courses outside your major
- Get a job
- Volunteer in the community
Reminder: Goal of this part of the info session

Highlight need to reflect about your interests, aptitudes and educational goals – *share tools for finding out more*
What Did You Learn?

1. Biology degree is a great career foundation – understand the skills you are developing in your major

1. Going to classes alone is not enough – develop employability skills by doing research, gaining work experience, getting an internship

1. Take inventory, reflect, keep on growing – develop resume spikes

1. Consider getting advanced educational degrees - You do not have to get an advanced degree right after graduation