What Can I do With a B.Sc.?

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What Can You Do With a BSc Degree?



First thoughts:
Medicine/Health
Academia
Education

 But what other opportunities are there?

Three main Categories we'll be covering are:

- <u>Government jobs</u>: ex. ministry of environment of Ontario
- <u>Industrial jobs</u>: ex. chemical supply company
- <u>Forensics</u>: ex. Toxicology

Just a BSc?

- Some of the careers we'll be talking about require further education:
 - Masters, PhD, 2 yrs specialty training, 2 months specialty training
- But lots of them don't

Government Jobs

Municipal

http://www.toronto.ca/employment/

Provincial

http://www.gojobs.gov.on.ca/Jobs.aspx

 Federal <u>http://jobs-emplois.gc.ca/index-</u> <u>eng.htm</u>

Province of Ontario

- "To work in the OPS, you must be a Canadian citizen or permanent resident of Canada or authorized in writing to work in Canada under the federal Immigration Act."
- Some jobs require French Proficiency, although the majority of the scientific ones don't
- <u>Permanent vs. Temporary</u>: A Temporary position is one that has a predetermined duration. Contract jobs do not have benefits. A **permanent** position is one where there is no predetermined duration. These jobs entitle the employee to a benefits package

- Speaking of a benefits package, one of the advantages to a government job is the amazing benefits. Worth around \$800 \$1000/yr Including: Pension, Health Benefits, Life Insurance, Family Leave, Disability
- Lots of Career Mobility. Many opportunities for advancement and Promotions. Can also switch between different ministries.

Career Streams

- Communications and Marketing
- Media Relations, Strategic Communications Adviser, Information Officer
- Finance and Economics
- Auditor, Financial Analyst, Economist
- Information Technology

Systems Officer, Analyst, Programmer, Information Architect, Security Specialist, Data Analyst

Inspections and Investigations

Meat Hygiene Officer, Drinking Water Supervisor, Occupational Health and Safety Inspector, Highway Carrier Safety Inspector,

<u>Lands and Resources</u>

Forester, Resources Manager, Environmental Officer, Property Assessor, Clean Water Specialist, Mineral Development Co-ordinator, Northern Development Adviser

<u>Science and Engineering</u>

Biologist, Hydrogeologist, Forensic Scientist, Project Engineer, Engineering Technologist, Ecologist

A little more detail

Information Technology

- ex: SENIOR PROGRAMMER/ANALYST
- Education: not specified; must have knowledge of industry programming languages
- Responsibilities: programming, tech support, analysis, written and oral reports
 Salary: ~ \$70,000/yr

Inspections and Investigations

- ex drinking water supervisor
- Education: BSc in environmental studies
 + Public Health inspector Certification
- Responsibilities: reviewing reports, field work, taking water samples, public presentations
- Salary: ~\$66,000

• <u>Museum Science Director</u>

- Science North, Ontario Science Centre, the ROM
- Education: Not specified, but MSc recomended
- Responsibilities: specific to institution
- Salary: ~ \$109,000

<u>Science and Engineering</u>

- ex: bridge engineer
- Education: BSc in engineering + engineering licence
- Responsibilities: Ontario highway infrastructure, American border bridges
- Salary: Variable

A temporary job example

- Wildlife research technician
- Requirements: BSc in biology, G licence, rabies vaccine
- Responsibilities: field work setting traps, experimental design, data analysis, technical writing

• Salary: \$22.78 /hour; may-march = ~ \$40,000

General Required Skills

- Technical writing
- Oral reports
- Statistics/ Data Analysis
- People skills

Microsoft Office – word, excel, Powerpoint

Research in Industry and Health/Science Related Fields

- Many career opportunities that can be acquired with a minimal BSc degree
- As mentioned before, many jobs do require higher degrees such as an MSc or PhD
- Please keep in mind the following:
 - Experience
 - Placement (i.e. getting your foot in the door)

Career Profiles

- Actuary
- Analytical Chemist
- Bacteriologist
- Biochemist
- Chemist

- Environmental Geologist
- Medical Physicist
- Microbiology Technologist
- Polymer Chemist
- Principal Scientist
- Research Assistant

A closer look at specific job opportunities available...

Research Technician (a.k.a. lab research)

•A variety of disciplines

Minimal education usually a BSc

 Most employers specify experience or MSc/PhD as an asset

Research Technician (a.k.a. lab research)

•Salary: ~ \$45 000-\$95 000+

 Large salary range due differing areas of research being carried out

Types of Employers

Medical labs
 hospitals

- Universities
 federal and provincial governments
- Pharmaceutical companies

Research Coordinator at Brunel

• Hours: 35 hr/week Status: Full-Time

• QUALIFICATIONS:

BSc in biology or pharmacology

No minimum experience stated

Research Coordinator at Brunel

- This candidate will be responsible for reporting and presenting to scientific and non-scientific colleagues and clients.
- Acting as point person for the clinical-study site, overseeing all operational responsibilities.
- Recruiting and enrolling participants into the study
- Preparing and printing all reports related to the study

Chemical Analytical Development at Apotex

- Qualifications:
- Recognized post secondary education in analytical chemistry, organic chemistry, pharmaceutical sciences
- BSc with 5 years or MSc with 3 years or PhD with o-1 years experience in a pharmaceutical lab in an R&D environment.

How do you find out about these jobs? How important is it to have connections?

CASC Internships

- Canadian Association of Science Centres
- Provide you with paid internships
- Get paid while you get experience and network
- Only for those who have graduated
- http://www.canadiansciencecentres.ca

Helpful links:

- http://www.tcu.gov.on.ca/eng/ojf/
 - Ontario Job Futures
- http://www.workopolis.com
 - Job Database
- http://www.uhn.ca
 - University Health Network
 - For those interested in health related research positions

Forensic Science



What is Forensics?

- The Application of Science to Law
 - You CANNOT be a forensic scientist without first being a scientist
 - Involves analyzing and interpreting evidence
 - Work in lab and bring your evidence/analysis to court.

Domains of Forensic Science

- 1. The Forensic Lab
- 1. Crime Scene Investigation
- 1. Death Scenes
- 1. Forensic Pathology
- 1. Other Forensic Specialists

The Forensics Lab

- Police Labs
 - RCMP Forensic lab Service (FLS)
 - Located in Vancouver, Edmonton, Regina, Winnipeg, Ottawa and Halifax
 - Positions require various levels of postsecondary academic training and experience.

The Forensics Lab

- http://www.rcmp-grc.gc.ca/fsis-ssji/care-carraca-uni-eng.htm
- Must be able to transfer from lab to lab and attend court proceedings in all parts of Canada if necessary
- Competitive approx 380 employees
- http://www.rcmp-grc.gc.ca/fsis-ssji/care-carrgeneral-eng.htm

The Forensics Lab

- Provincial Labs
 - Centre of Forensic Sciences (CFS)
 - Central Laboratory located in Toronto.
 - Conduct scientific investigations in cases involving injury or death in unusual circumstances, and in crimes against persons or property
 - http://www.mcscs.jus.gov.on.ca/english /centre_forensic/intro.html

Specialties in the Lab

- Search TechnologistForensic Biology
- Forensic Chemistry
- Forensic Toxicology
- Firearms and Toolmark Examiner
- Forensic Document Examiner

Firearm and Toolmark Examiner



- Job Description:
 - Involves the microscopic matching of the 'toolmarks' made on bullets and cartridge cases upon firing.
 - Estimation of the distance of a firearm from a target

Firearm and Toolmark Examiner

Education and Training

• Honours Science degree with university level courses in Chemistry and Physics.

The following skills are also necessary:

Some basic knowledge of and interest in firearms and their mechanisms

Firearm and Toolmark Examiner

Working Condititions

- Normally 40 hrs/wk with weekends off.
 - (Exceptions occur occasionally when court, training, conference travel or special projects)

Other Specialties

Forensic:Ondontologist

Botanist

- •Anthropologist •Er
- Entomologist

Engineer

Psychologist

Artist

Nurse

Education

• Mount Royal College in Calgary, Alberta.

- Online Program in Forensic Studies
- Admissions requirements:
 - A completed diploma or degree from a recognized post-secondary institution, or be an undergraduate student in the senior year of study.
- <u>http://www.mtroyal.ca/ProgramsCourses/FacultiesSchool</u> <u>sCentres/HealthCommunityStudies/Programs/ForensicSt</u> <u>udiesCertificate/index.htm</u>

Education

- Fleming College in Peterborough, ON
 Ministry certified program in Ontario
 - The only college in Canada that offers laboratory high-throughput automation combined with Forensic Analysis.
 - <u>http://www.flemingc.on.ca/index.cfm/g</u>
 <u>o/programs/sub/display/code/BTF</u>

Extra Links

- <u>http://en.wikipedia.org/wiki/Forensic_science</u>
- Canadian Society of Forensic Science:
 - <u>http://www.csfs.ca/</u>
- <u>http://forensics.ca/phpcode/web/</u>
- Excellent Resource:
 - <u>http://www.csfs.ca/contentadmin/UserFiles/</u> <u>File/Booklet2007.pdf</u>

Career Entry Programs

 Various programs offered in Health Care Professions at Michener Institute

• Around 16 – 20 months

 Career path includes: ultrasound technician, cardiovascular perfusionist, respiration therapy, nuclear medicine

 Application required, need a Bachelor's degree to qualify Check out the Michener Institute at University of Toronto!
http://www.michener.ca/future/pr ograms.php?main=1&sub=4&sub2= 0

Questions?

