

## Biostatistician

**Biostatisticians** design research studies and analyze data related to human health, animals or plants. They apply their knowledge of statistics, science and mathematics to gather and analyze data to help researchers answer questions. Biostatisticians collaborate and clearly communicate with staff, medical and scientific researchers in design, data collection, analysis and publication of study data, and provide overall statistical support, data processing, study design, and data analysis services. Their role is to compile an unbiased statistical analysis of data retrieved from clinical trials to assist investigators and researchers. They are responsible for overseeing the collection of data, applying statistical methodologies and communicating findings to facilitate decision-making. Once the raw data has been gathered, biostatisticians apply recognized standard statistical methodologies and use statistical software to turn the data into useful information.

**Learn more about the role of a Biostatistician by downloading the full skills profile for free at [www.biotalent.ca/profiles](http://www.biotalent.ca/profiles).**



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## BioTalent Canada's Bio-economy Skills Profiles

Biotechnology's fusion of science and business creates unique requirements for jobs in the sector. Candidates often need skills suited both to the lab and the boardroom. As a result, occupational descriptions from other sources or sectors don't always fit the bio-economy exactly. That's why, in partnership with industry stakeholders, BioTalent Canada has developed skills profiles specific to the bio-economy—a project that will continue with the ongoing addition of other functions over time.

Each profile includes a definition of the occupation, a list of competencies and associated tasks, a summary situational analysis, language benchmarks, and essential skills.

## Who can use these profiles?

**Easy to use and interpret, our *Bio-economy Skills Profiles* were created to meet the needs of a wide range of audiences.**

**Here's how you might use them if you're an:**

**Employer:** Develop job descriptions, performance evaluation criteria, professional development programs, succession plans, team building initiatives and recruitment plans.

**Job seeker:** Identify your professional development needs, tailor your résumé for a specific position, prepare for interviews and interpret job descriptions.

**Educator:** Build industry-oriented curricula to help produce job-ready graduates.

**Student:** Grow your understanding of employers' expectations and choose the right educational programs to equip yourself with the skills for success.

## Validated by industry

BioTalent Canada created its *Bio-economy Skills Profiles* in consultation with industry to accurately capture the needs of biotechnology companies and produce truly practical, relevant resources. These profiles summarize the high-level skills required for each occupational profile and itemize in detail the common

tasks associated with each function. Because the profiles are comprehensive, not every skill may be required for a single position: instead, the profiles present the full sets of skills that could be expected of a person in a given role within companies at various stages of development.

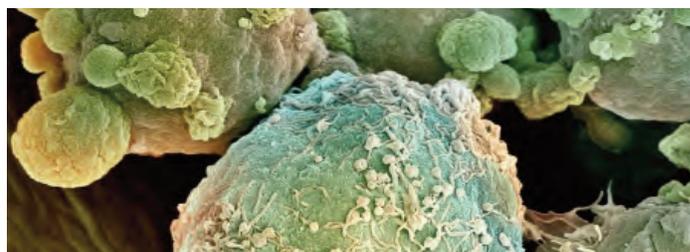
## Information you can trust

BioTalent Canada is the country's source for reliable, objective and accurate information on skills development and human resources in the bio-economy. Our aim as Canada's biotechnology sector council is to deliver the human resources tools, information and skills development resources industry needs to ensure an adequate supply of job-ready people.

## Understanding the bio-economy

Canada's bio-economy is engaged in the research, development, commercialization and manufacturing of biotechnology products. The bio-economy is constantly expanding as new technologies and techniques are applied to an ever-broader range of industries and sectors including:

Agriculture	Genomics
Aquaculture	Human and Animal Health
Bioenergy	Industrial
Bioinformatics	Life Sciences
Bioproducts	Medical Devices



Biosciences	Nanotechnology
Environment	Natural Resources
Food Processing	Nutraceuticals
Forestry	Pharmaceuticals

## Bio-economy Competency Profile Checklist

**A Biostatistician must have a master's degree in statistics and hands-on experience working with stats** in a relevant industry—and with statistical programming specifically. Many also have a scientific background in computer science or other related area.

Building on these, a **Biostatistician** must be able to:

### A. Provide support to a research study

- 1. Contribute to study design
- 2. Participate in study execution
- 3. Support study completion

### B. Develop the statistical analysis components of a protocol

- 1. Conduct background research
- 2. Address the requirement for a separate Statistical Analysis Plan (SAP)
- 3. Document design considerations
- 4. Outline the study schema
- 5. Define study endpoints
- 6. Identify statistical tests to be used
- 7. Document study definitions
- 8. Undertake steps for review and approval of a statistical analysis plan (SAP)

### C. Analyze and interpret study data

- 1. Support collection of the study data
- 2. Apply statistical methods and tests
- 3. Assess analysis findings
- 4. Report findings to the internal organization



### D. Advance the research agenda

- 1. Assess statistical outputs
- 2. Contribute to the registration dossier
- 3. Present results to the scientific community

### E. Provide expert/advisory services

- 1. Serve as an in-house consultant
- 2. Act as a peer reviewer
- 3. Maintain status as a 'recognized authority'
- 4. Mentor and coach peers and the management team

### F. Demonstrate generally accepted management capabilities

- 1. Apply generally accepted management principles and techniques
- 2. Apply project management leading practices
- 3. Identify and protect intellectual property
- 4. Protect sensitive/confidential information
- 5. Use computers to analyze/manage data and information
- 6. Manage work activities
- 7. Establish effective working relationships
- 8. Encourage team-building

### G. Apply professional practices

- 1. Comply with established policies, procedures and protocols
- 2. Comply with all applicable regulations and legislation
- 3. Demonstrate statistical analysis skills
- 4. Demonstrate medical/scientific/regulatory knowledge and understanding
- 5. Demonstrate professional integrity

### H. Communicate

- 1. Communicate with diverse audiences

### I. Demonstrate personal competencies

- 1. Demonstrate leadership
- 2. Demonstrate critical thinking/problem solving
- 3. Set priorities
- 4. Organize work
- 5. Manage multiple tasks
- 6. Maintain adaptability
- 7. Embrace continuous learning and development



## Get started today

Even before you download the full **Biostatistician** Skills Profile, get a sense of the information it contains and how you might use it in your work. Attached here is a quick-reference checklist that summarizes the core skills required for the position and the common tasks associated.

**Go to [www.biotalent.ca/profiles](http://www.biotalent.ca/profiles) and download the complete Biostatistician Skills Profile.**

