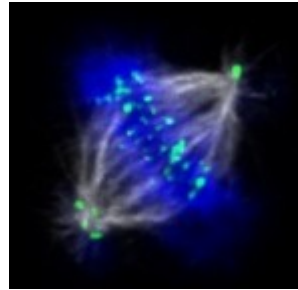


Biology programs at a glance



Biology programs at a glance

Biology (BSc)

Cell & Molecular
Biology (BSc)

Ecology (BSc)

Environmental and
Sustainability Science
(BSc)

Systems and
Information Biology
(BSc)

NEW

NEW

Co-op option available with all
specialization and honours

Biology

Major, Minor, Specialization and Honours

Get inspired by life. Immerse yourself in the study of life at all levels, from cell biology and the physiology of multicellular organisms to the interactions between organisms and their environment. Build a strong basis in the essentials, then choose the right topics for your chosen path.

Our Biology Department features teaching labs with state-of-the-art equipment that introduce you to the various techniques used in biology research. Small class sizes foster strong student-professor relationships. As a Biology student, you'll follow the Biology core curriculum and additional Biology courses based on your interests. Through labs, lectures and tutorials you will:

- ▶ Study genes and how they control cellular and organismal function
- ▶ Address fundamental and applied research problems
- ▶ Study the chemical and cellular basis of living systems
- ▶ Explore the evolution, biodiversity and ecology of organisms and their physiology and morphology
- ▶ Receive extensive training in research methodology

Concordia's hands-on approach provides a solid foundation for a career in the life sciences or environmental sciences, or paves the way for future graduate studies.

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OPTIONS

Honours in Biology (72 credits)

Specialization in Biology (62 credits)

Major in Biology (45 credits)

Minor in Biology (24 credits)

The Specialization and Honours programs prepare students for a career in the biological sciences, including graduate studies. The Major program can be combined with a degree in another department based on interest or to target niche careers that combine multiple expertise. For example, a student interested in a career in management of a biotechnology company or governmental regulatory agency might combine a Major in Biology with a major program in business or communications.

CO-OP PROGRAM

The Co-op program gives you the chance to complete paid work terms that last 12 to 16 weeks. The Co-op option is available for Specialization and Honours program students.

AFTER YOUR DEGREE

Biology undergraduates have the foundation to pursue graduate studies or medicine. Biology alumni have established careers in a variety of science fields that include:

- Medicine
- Pharmacology
- Environmental management
- Science education



Cell and Molecular Biology (CMB)

Specialization and Honours

Map genes. Examine microbes. Crack the secrets of the genome, the program of life. When you study Cell and Molecular Biology, you get a front-row seat to study the basic processes that run life's playbook. As a cell and molecular biologist, you can discover how genes shape organisms, how immune cells protect our body and how biotechnology can develop pest- or drought-resistant crops for the developing world.

Our Biology Department laboratories feature modern equipment and protocols that introduce you to state-of-the-art technologies for cell physiology and molecular biology. Small class sizes foster strong student-professor relationships. As a Cell and Molecular Biology student, you'll follow both the biology core curriculum and courses focused within your specialization. Through labs, lectures and tutorials you will:

- ▶ Study the mechanisms of cellular interactions and genetic controls in plants and animals
- ▶ Study the structure and function of microbes
- ▶ Learn the techniques used to study genetic function, gene mapping and genome analysis

Concordia's hands-on approach provides a solid foundation for a career in the life and health sciences or paves the way for future graduate studies.

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OPTIONS

Honours in Cell and Molecular Biology (72 credits)

Specialization in Cell and Molecular Biology (66 credits)

CO-OP PROGRAM

The Co-op program gives you the chance to complete paid work terms that last 12 to 16 weeks.

AFTER YOUR DEGREE

Biology undergraduates have the foundation to pursue graduate studies or medicine. Cell and Molecular Biology alumni have established careers in fields including:

- Biotechnology
- Systems Biology
- Medicine
- Pharmacology
- Medical research

Ecology

Specialization and Honours

Learn about the amazing web of life that we are embedded in. When you study Ecology, your field of view opens to reveal the intricate relationships among all living things. As an ecologist, you will explore the connections among different organisms and their interaction with soil, air, water and radiation from the sun. This program will prepare you to conduct research on ecology and evolution, monitor and manage living resources, engage in sustainable development, be a champion for biodiversity, and protect the planet.

Our Biology Department features a computer lab and teaching labs that will introduce you to the state-of-the-art analysis tools used in ecology research. Small class sizes foster strong student-professor relationships. As an Ecology student, you'll follow the Biology core curriculum and additional courses focused on Ecology. Through labs, lectures and tutorials you'll also:

- ▶ Study population growth and the dynamics of competition, predation and parasitism
- ▶ Explore the evolution, biodiversity and ecology of organisms and study their physiology and behaviour
- ▶ Receive training in field research, molecular ecology and biostatistics

Concordia's hands-on approach provides a solid foundation for a career in the sciences or paves the way for future graduate studies.

OPTIONS

- Honours in Ecology (72 credits)
- Specialization in Ecology (66 credits)

CO-OP PROGRAM

The Co-op program gives you the chance to complete paid work terms that last 12 to 16 weeks.

AFTER YOUR DEGREE

Ecology undergraduates have the foundation to pursue graduate studies or establish careers in fields including:

- Environmental regulation
- Environmental consulting
- Wildlife management
- Science education

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Environmental and Sustainability Science (ESS)

Environmental Biology

Specialization and Honours



Climate change, loss of biodiversity, severe weather events, pollution and the unsustainable use of the Earth's resources are some of the most pressing challenges of our time. If you are fascinated by the science behind how human activity affects our planet, and passionate about creating a more sustainable future, the Environmental and Sustainability Science program is for you.

Environmental Biology stream of ESS program is based in the Department of Biology. In this stream you will learn about the beauty and diversity of the natural world and explore challenges such as the perturbation of nutrient cycles, the conservation of wild populations and human population growth and resource consumption.

RELATED PROGRAMS

ESS Earth Systems and Climate Science
ESS Environmental Chemistry

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OPTIONS

Honours in ESS Biology(69 credits)
Specialization in ESS Biology (63 credits)

CO-OP PROGRAM

The Co-op program gives you the chance to complete paid work terms that last 12 to 16 weeks.

AFTER YOUR DEGREE

You will have the foundation to pursue careers in a range of fields including:

- Environmental impact assessment
- Resource conservation
- Environmental analysis and pollutant management
- Environmental consulting
- Geographic Information Systems analysis
- Wildlife and fisheries biology

Systems and Information Biology (SIB)

Specialization and Honours



Why does one person develop a debilitating disease early in life while another lives to be 100? How can we engineer microbes to produce new drugs or develop sustainable technologies? How can we develop better conservation strategies based on our understanding of the genetic diversity within a species? The potential to explore these questions has exploded in our modern age of big data and data analytics. Thanks to advances in scientific and digital technologies, we can now collect vast amounts of information about biological systems, revolutionizing our ability to understand the world around us. But in order to access the insights offered by massive data sets, researchers need the language and tools of computer science.

The BSc in Systems and Information Biology will place you at the rich intersection of biology and computer science. Through lectures, labs and research projects, you will learn how to use computational and bioinformatic approaches to explore the biological sciences. Depending on your path through the program, you will learn about:

- ▶ molecular and cell biology
- ▶ computer coding and algorithms relevant to the biological sciences
- ▶ genomics and biological data sciences
- ▶ mathematics, statistics, and modelling
- ▶ ecology and evolutionary biology

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RELATED PROGRAM

BCompSc in Health and Life Sciences (HLS) is a sister program of SIB many course works are shared with the HSL program.

OPTIONS

- Honours in SIB (73 credits)
- Specialization in SIB (61 credits)

CO-OP PROGRAM

The Co-op program gives you the chance to complete paid work terms that last 12 to 16 weeks.

AFTER YOUR DEGREE

The BSc in Systems and Information Biology will prepare you for a career in biotechnology, as well as for additional graduate training in health-related and life sciences, such as:

- Bioinformatics
- Systems Biology
- Biotechnology
- Medical research
- Pharmacology



Co-op option

The Co-op program gives you the chance to complete **paid work terms** that last 12 to 16 weeks. The work experience gives you a huge advantage over other graduating students in a competitive job market.

Sample work-study schedule for students for students who has 60 credits remaining before graduate.

Year 1	Study	Study	Work
Year 2	Study	Work	Work
Year 3	Study	Study	Graduate

Sample work-study schedule for students for students who has 90 credits remaining before graduate.

Year 1	Study	Study	Study
Year 2	Work	Study	Work
Year 3	Study	Work	Study
Year 4	Study	Graduate	

Job descriptions depend on the type of employment. Following are example work duties of Biology Co-op students.

- characterize the effects of drug candidates in cells and/or animals
- undertake bacterial or blood smear preparations and staining
- work on gene cloning and molecular diagnostics
- act as a field assistant to carry out species identification, measurement and counting

Co-op job positions are posted to the internal co-op job posting board. However, it is student's responsibility to search and apply to the positions. Students are encouraged to apply to a wide range of job postings.

*The Co-op option is not available for Biology Major or Minor students.
If you wish to add the Co-op program, please select either Specialization or Honours program.*

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Extra curricular student activities

Biology Student Association



BSA organizes many students events,
Including volunteer trip to Galápagos Islands.

<https://www.facebook.com/bsaconcordia>

iGEM synthetic biology competition

Could this prize-winning student project be the next big thing in biofuels?

A Concordia team takes silver at the “synthetic biology event of the year,” the iGEM Giant Jamboree 2014

Posted on November 12, 2014 | By: Sara DuBreuil



Latest news from Biology Department

Source: Concordia News Stories

<http://www.concordia.ca/news/stories.html>



Biology grad earns a Clarendon Scholarship to attend Oxford

August 30, 2021



Canada's first training program for synthetic biology attracts top talent

May 12, 2021



Concordia PhD student is awarded \$100K to pursue research in genetic engineering

May 20, 2021



Researchers develop a yeast-based platform to boost production of rare natural molecules

August 27, 2020



Biologist Lilian Sales becomes the latest Concordian to win a Banting Postdoctoral Fellowship

July 15, 2021



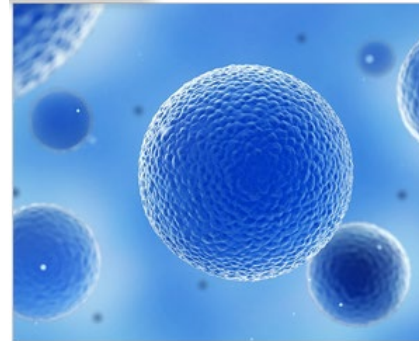
\$5.1M for genome engineering at Concordia

November 24, 2020



Concordia biology professor is elected fellow of the Ecological Society of America

March 25, 2021



Concordia researcher discovers more natural compounds that could reduce the effects of aging

September 9, 2020



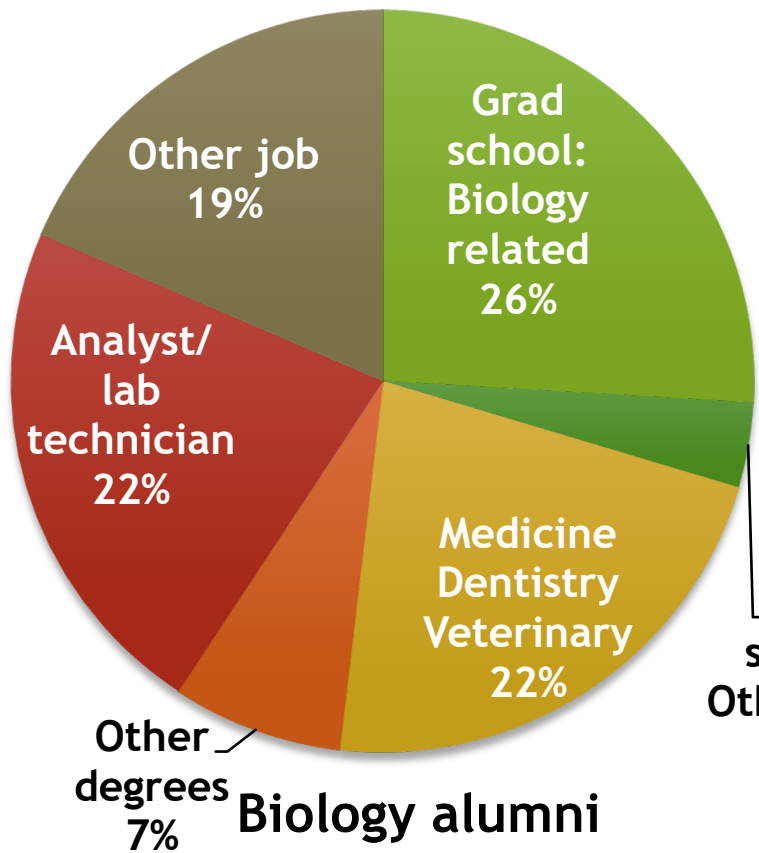
Concordia MSc candidate explores the effects of COVID-19 on the global environment

August 6, 2020

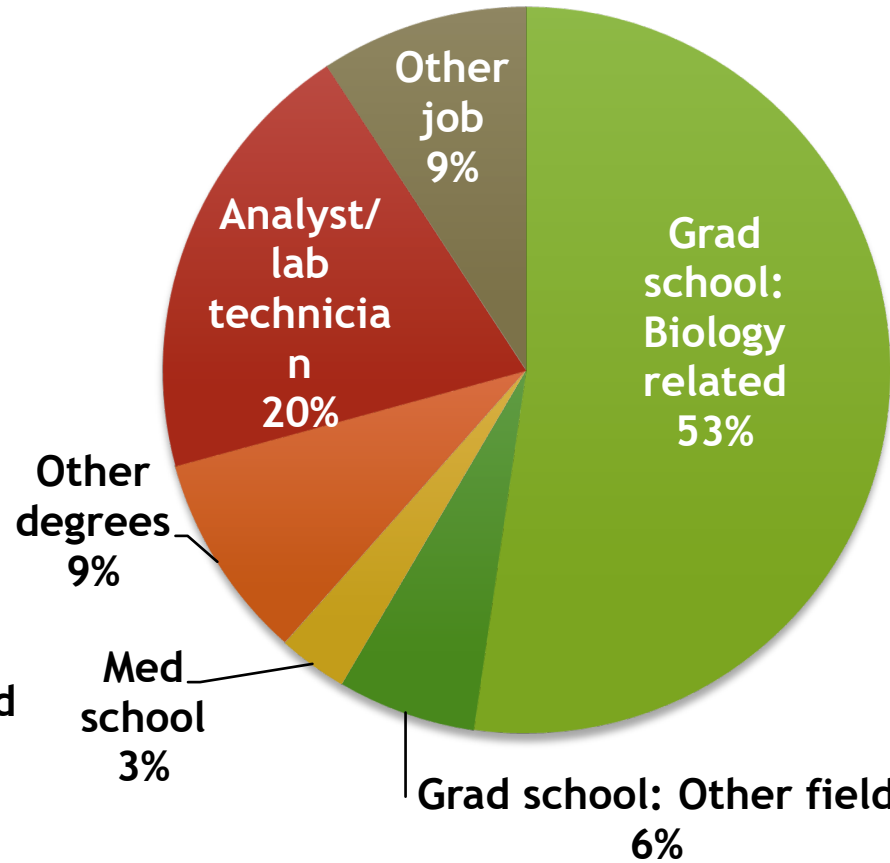


How can Maritime fisheries prevent another species collapse?

June 8, 2020



Biology alumni



Cell Molecular Biology alumni

What do Concordia biology alumni do immediately after graduation?

Data taken from personal connections in **LinkedIn**

