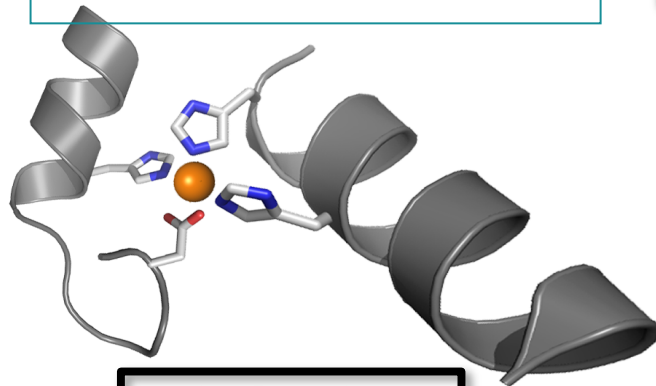


HOW TO GET TO WHERE YOU WANT TO BE



Biochemistry

Physical Chemistry
Inorganic Chemistry
Synthetic Methods (Chemistry)
Bio-organic Chemistry
Gene Expression
Signal Transduction
Proteins

English 12
Math 12
Biology 12
Chemistry 12
Physics 11

You are here

Introductory Science

First Year

Introductory Microbiology
Organic Chemistry
Principles of Cell Biology
Principles of Genetics
Statistics
General Biochemistry
Molecular Microbiology
Immunology
Intermediate Laboratory
Advanced Laboratory

Core Courses

Microbiology

Cell Biology
Molecular Genetics
Virology
Molecular Biotechnology
Microbial Pathogenesis

Co-op

Careers

Biotechnology, Food, Agriculture, Pharmaceuticals, Graduate Studies
Environmental Testing, Teaching, Forensics, Academic Research,
Government Research, Dentistry, Law, Medicine, Veterinary Science

Where you want to be



Our programs emphasize practical laboratory techniques and methods. Starting in second year we teach how to grow, characterize, and identify bacteria and extract their DNA. In our third and fourth year we have intensive courses that combine molecular, microbiological and biochemical methods into compelling modules that use an array of techniques to answer specific questions. This approach is how laboratory research is done.

Course	Skills and Techniques
MICR 200A	Sterile technique, media preparation, microscopy, Gram stain, streak & spread plating, pipetting, membrane filtration, counting bacteria, differential and selective media, antibiotic assays, spectrophotometry, preparation of standard curves, replica plating, catalase and Staph latex agglutination tests, identification of mutant phenotypes, lytic phage titre and isolation, bacterial mating, isolation and characterization of Enterobacteriaceae and Staphylococci, plasmid preparation, restriction digest and agarose gel electrophoresis.
MICR 200B	
BCMB 301A	Aseptic technique, bacterial enumeration and isolation, pH and buffer preparation, spectrophotometric assays of protein and DNA, protein purification, SDS-PAGE and agarose gel electrophoresis, eukaryotic tissue culture, ELISA, isolation of plasmid and genomic DNA, bioinformatics, transposon mutagenesis, enzyme kinetics, recombinant DNA technology, Polymerase Chain Reaction (PCR).
BCMB 301B	
BCMB 406A	Lipid methods include - extraction, gas-liquid chromatography, thin layer chromatography, preparation of liposomes and determination of therapeutic efficacy. Protein methods include - high performance liquid chromatography (HPLC), two-dimensional electrophoresis, mass spectrometry, expression, affinity purification, concentration, dialysis, SDS-PAGE, and characterization via macro arrays and gel shift. DNA methods include - plasmid isolation, restriction digests, sequencing, PCR, and in vitro transcription. Immunological methods are ELISA and western blots. There is focus on data analysis, such as of mass spectrometry and sequencing data, and the design and evaluation of PCR primers.
BCMB 406B	

Our graduates go on to a variety of exciting careers. Here are some of the more common ones.

Academia - The route to a career in post secondary education proceeds from a BSc (undergraduate Bachelors of Science) to a graduate PhD (Doctor of Philosophy), then to independent research as a post doctoral fellow (PDF), and finally establishing one's own research program.

Agriculture - Careers in plant and animal health and genetics as well as molecular elements of the environment.

Communication - Science communication combines solid writing skills with knowledge of science. Journalism and technical writing can rewardingly combine these fields.

Education - Students continuing on to be high school teachers complete a short Bachelor of Education Post-Degree Professional Program.

Forensics - Modern forensic sciences require excellent lab skills and often utilize biochemical techniques such as genetic analysis.

Government - Biotechnology and water and food quality all follow from biochemistry and microbiology and are key areas of government interest.

Medicine - Admission to medical school requires a background in biochemistry. Our students have been quite successful in gaining entry to UBC medical school and can return to complete their training at the Island Medical Program at UVic.

Law - Following our BSc programs with a law degree can allow specialization in the legal implications of biotechnology and patents.

Research - Our lab skill intensive programs are ideal for entry into research, be it in government, academia or the private sector, as a research technician or research assistant.