VERNA J. KIRKNESS

SCIENCE & ENGINEERING EDUCATION PROGRAM

A week of travel and research exploration - apply now for full financial support.

CONNECTING STUDENTS FROM ACROSS CANADA

The Verna J. Kirkness Science and Engineering Education program offers scholarships to First Nations, Métis and Inuit grade 11 students to spend a week as a student researcher at a Canadian university, interacting with scientists in their research laboratories. During their week on campus the students have the opportunity to meet role models, learn about the support systems that are available to them on campus and experience the excitement of doing research. There are several participating universities across Canada, bringing together youth from all corners of the country to experience the unique learning experience the Verna J. Kirkness Science and Engineering Education program has to offer.

THE UNIVERSITY OF BRITISH COLUMBIA

UNIVERSITY OF CALGARY

UNIVERSITY OF SASKATCHEWAN

FIRST NATIONS UNIVERSITY of CANADA

UNIVERSITY OF MANITOBA

uOttawa

"This program not only educated me on how I could be involved in the science and engineering world, but exposed me to the world of university. Coming from a small town this was single handedly the most impactful moment in my life. It gave me the confidence and reassurance that there is a place for me in the world to do whatever I want wherever I want."

- Drew - Courtenay, BC

" The Verna.J.Kirkness program has helped me in so many ways, it has given me valuable learning tools in my quest for post-secondary. I have met many amazing people as a result from the Verna.J.Kirkness program and they have helped me along the way as well. This program has helped me become an efficient learner and become an active community member. Miigetch!"

- Madison - Winnipeg, MB

"I love how I got to experience what being a university student was like and how it was exactly what I needed. I made a whole bunch of new friends and memories"

- Aleyna - Punnichy, SK

"If more people in my community were aware of how much science comes into our everyday lives, I feel like there would be way more jobs and interest... This program is opening my eye to university life. Also it's encouraging me to pursue finishing high school, and get ready for my future"

- Sara - Gift Lake, AB

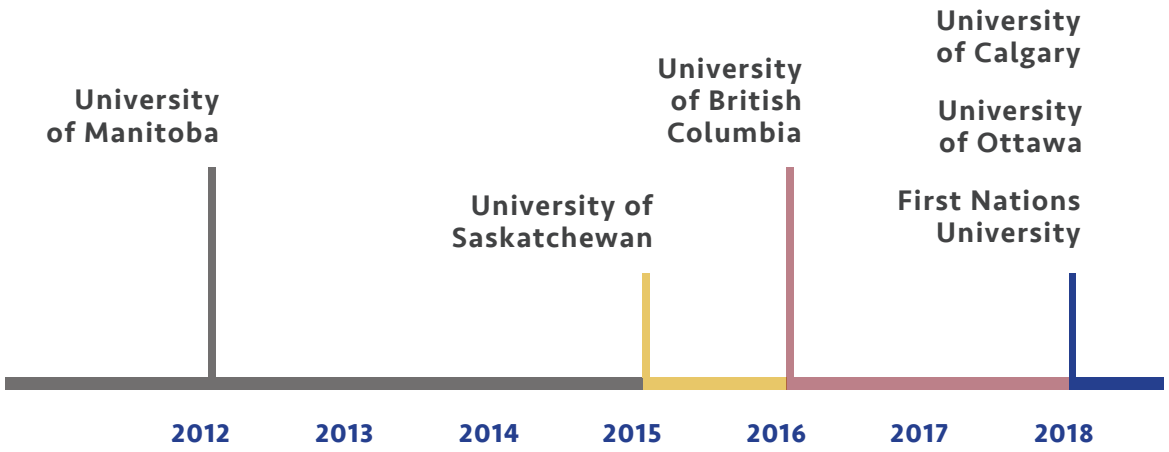
"I have more connections/friends/role models to help me in my science education because of the Kirkness program"

- Mackenzie - North York, ON

"I really enjoy participating in science, and it was a great opportunity to get out and experience new things"

- Arielle - Smithers, BC

PARTICIPATING UNIVERSITIES



ABOUT VERNA J. KIRKNESS

Verna J. Kirkness, a member of the Fisher River Cree Nation and national leader in education in Canada has inspired countless students and educators in both Indigenous and non Indigenous communities and who through her vision and determination has successfully established new institutions that contribute to excellence in Indigenous education.

Verna Kirkness started her career as an elementary school teacher and principal in provincial and federal schools in Manitoba in 1954. In the late 60s, as a Cross-Cultural Consultant for the Manitoba Department of Education, she was instrumental in making Cree and Ojibwe the languages of instruction in several northern Manitoba schools. In the 70s as Education Director of the Manitoba Indian Brotherhood (now Assembly of Manitoba Chiefs) and then Education Director for the National Indian Brotherhood (now Assembly of First Nations) she was instrumental in developing and implementing both the influential publication Wahbung: Our Tomorrows and the landmark 1972 policy of Indian Control of Indian Education. These two major works have shaped the educational agenda of Indigenous Education across the country for more than 45 years.

Upon completing her Master of Education degree at the University of Manitoba, Verna continued her successful career in 1980 at the university level becoming an Assistant Professor at the University of British Columbia and appointed Head of the Native Indian Teacher Education Program (NITEP) which under her leadership became one of the most successful programs in the country – Head of the Ts"kel Graduate program (which she initiated). She was a prime mover in the establishment of the First Nations House of Learning on campus, a concept based on access and support to Indigenous students and served as its first Director from 1987 to 1993. During this time she spearheaded and coordinated a major project, assisting in raising over $5 million dollars to build the First Nations Longhouse at UBC to serve as "a home away from home" for Indigenous students.

Dr. Kirkness has written and edited nine books, one being her autobiography, entitled Creating Space and has published numerous articles on Indigenous education in academic journals in Canada and internationally.

For more than five decades she has been a major spokesperson for Indigenous education. Her work has been recognized in numerous honours and awards. In 1990 she was voted Canadian Educator of the Year, in 1994 she received a National Aboriginal Achievement Award (now Indspire) for Education. She is a member of the Order of Canada (1998) and the Order of Manitoba (2007). She was awarded the Queen's Jubilee Medal in 2003 and has six honorary doctorates.

EXPLORE POSSIBLE RESEARCH PROJECTS

In the following pages, you'll find descriptions of some of the labs that have participated in the Kirkness program in the past (many of which are participating again this year)! This is not a complete list.

For a more complete listing of this year's participating labs, please visit:
www.vernajkirkness.org
www.cwse-prairies.ca

ARCHITECTURE

DR. JOHN BASS'S LABORATORY
UNIVERSITY OF BRITISH COLUMBIA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of an architecture student in Dr. John Bass's laboratory and discover the elements of landscape design projects concerning housing and reconciliation with First Nations Communities.

Architecture is an interdisciplinary mode of thinking and working. In this lab, you will gain university level experience translating your ideas through sketching, an introduction to using 2D and 3D drawing software, and using laser cutters and 3D printers.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Geometry
- Drafting

You can continue to learn more in your undergraduate studies by taking courses at university in

- Design Studio
- Design Media

CAREERS THAT APPLY ARCHITECTURE IN YOUR COMMUNITY:

- Landscape Architecture
- Land Development
- Drafting and Design

Dr. John Bass | jbass@sala.ubc.ca | School of Architecture and Landscape Architecture | 604.833.9223
201D Lasserre Building | University of British Columbia | https://www.ubc.ca/

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BIOLOGY

DR. JOERG BOHLMANN'S LABORATORY
UNIVERSITY OF BRITISH COLUMBIA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Biology student in Dr. Joerg Bohlmann's laboratory and dig deeper into the study of genomics and biochemsitry of forest trees and medicinal plants. Knowledge from this research helps to improve forest health and human health.

You will practice laboratory procedures to gain skills in genome sequencing, bioinformatics, molecular biology, biochemistry, and plant biology while gaining hands on university level experience using equipment such as gas and liquid chromatography machines, Polymerase Chain Reaction machines, computer hardware and software.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

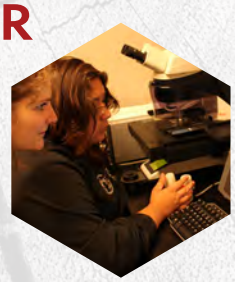
You will enjoy working in this lab, if you are interested in high school subjects like

- Biology
- Chemistry

You can continue to learn more in your undergraduate studies by taking courses at university in

- Biological Sciences
- Biochemistry
- Chemical Sciences

CAREERS THAT APPLY BIOLOGY IN YOUR COMMUNITY:



- Research Scientist
- Forest geneticist
- Entomologist
- Educator
- Business consultant
- Science communications

Dr. Joerg Bohlmann | bohlmann@msl.ubc.ca | Faculty of Science Biology Progrm | Michael Smith Laboratories - Bohlmann Lab | 604.822.0282 | 2185 East Mall | University of British Columbia
https://www.ubc.ca/

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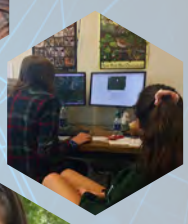
BIOLOGY

DR. KEVIN FRASER'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Biology student in Dr. Kevin Fraser's laboratory and take flight on your avian research journey! Use new tracking technologies to study the long-distance migration of birds from Canada to their tropical overwintering sites, and back. This lab aims to better understand what routes birds take, what habitat they need on migration, and how they respond to climate change and light pollution. You will learn techniques for the capture, handling, and measuring of live birds at field sites, gain university level experience conducting research, use computer software for analyzing migration data, learn what threats birds face with global environmental change, and much more!

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?



You will enjoy working in this lab, if you are interested in high school subjects like

- Geography
- Biology
- Math and Statistics

You can continue to learn more in your undergraduate studies by taking courses at university in

- Biology
- Animal Behaviour

CAREERS THAT APPLY BIOLOGY IN YOUR COMMUNITY:

- Environmental consulting
- Wildlife researcher
- Nature conservancy
- Academic research

Dr. Kevin Fraser | kevin.fraser@umanitoba.ca | Biological Sciences | 204-474-7044
Avian Behaviour and Conservation Laboratory | University of Manitoba | http://umanitoba.ca/

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BIOLOGY

DR. JACK GRAY'S LABORATORY
UNIVERSITY OF SASKATCHEWAN

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Biology student in Dr. Jack Grays's laboratory and explore the research and development of vaccine and immunity-enhancing technologies for humans and animals. Get inside a bug's brain by examining the effects that low doses of insecticides have on insects.

Investigate insect behaviour! In this lab, you will gain experience in data collection, video recording, care of colonies, data analysis, and presentation of results, while gaining university level skills in electrophysiology, and the use of data analysis and presentation software.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

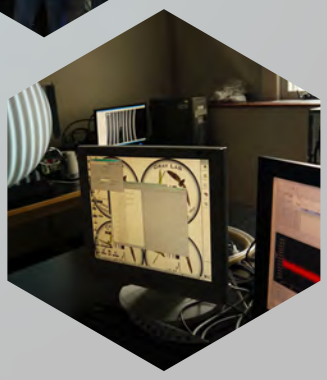
You will enjoy working in this lab, if you are interested in high school subjects like

- Biology
- Math

You can continue to learn more in your undergraduate studies by taking courses at university in

- Animal Physiology
- Neurobiology of Behaviour

CAREERS THAT APPLY BIOLOGY IN YOUR COMMUNITY:



- Teaching
- Science researcher
- Physiotherapy
- Optometry

Dr. Jack Gray | jack.gray@usask.ca | Biology, College of Arts and Sciences | GrayLab | 306.966.4274
325 Biology | University of Saskatchewan | https://www.usask.ca/

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CANADIAN LIGHT SOURCE

DR. TRACY WALKER'S LABORATORY
UNIVERSITY OF SASKATCHEWAN

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a student researcher at Canadian Light Source with Dr. Tracy Walker and learn about the range of research being done at Canadian Light Source in the fields of Biology, Chemistry, and Physics.

This is an inquiry-based science learning experience! In this lab, you will gain confidence in the science procedure (scientific question, experimental design, data analysis, communication), teamwork, organizational skills, and presentation skills. Gain university level skills using equipment such as IDEAS beamline, microscope, and general equiptment to prepare samples in the laboratory.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Chemistry
- Biology
- Environmental Sciences

You can continue to learn more in your undergraduate studies by taking courses at university in

- Chemical Sciences
- Agriculture

CAREERS THAT APPLY BIOLOGY, CHEMISTRY, & PHYSICS IN YOUR COMMUNITY:

- Engineering
- Applied environmental chemist
- Applied environmental biologist

Dr. Tracy Walker | tracy.walker@lightsource.ca | Canadian Light Source | 306.657.3745
44 Innovation Boulevard | University of Saskatchewan | https://www.usask.ca/

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CHEMISTRY & BIOCHEMISTRY

DR. HARRY BRUMER'S LABORATORY
UNIVERSITY OF BRITISH COLUMBIA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Chemistry & Biochemistry student in Dr. Harry Brumer's laboratory and dig deeper into the way nature's biological catalysis - enzymes - transform carbohydrates and other organic molecules in biological systems and applications.

Zoom into the molecular level! In this lab, you will gain experience in molecular biology, protein production, biochemistry, enzymology, and analytical chemistry while gaining university level skills in electrophoresis, microbial cultures, protein chromatography, spectrophotometry, and nuclear magnetic resonance spectroscopy.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Chemistry
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Chemical Sciences
- Biological Sciences

CAREERS THAT APPLY BIOCHEMISTRY IN YOUR COMMUNITY:

- Biotechnologist
- Analytical chemist
- Applied environmental chemist
- Applied environmental biologist

Dr. Harry Brumer | brumer@msl.ubc.ca | Department of Biochemistry and Molecular Biology | Michael Smith Laboratories - Brumer Lab | 604.827.3738 | 2185 East Mall | University of British Columbia
https://www.ubc.ca/

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CIVIL ENGINEERING

DR. SHERYL STAUB-FRENCH'S LABORATORY
UNIVERSITY OF BRITISH COLUMBIA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Civil Engineering student in Dr. Sheryl Staub-French's laboratory and build your toolkit for design and construction projects, including virtual Design and Construction (VDC), Building Information Modeling (BIM), collaboration and integrated project delivery, design and construction coordination, 4D (3D + time) visualization, and interactive workspaces.

Engineer your future! In this lab, you will gain experience in 3D modelling, teamwork, energy analysis, and effective communication. Develop university level skills using 3D modelling and energy analysis software.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Physics
- Pre-Calculus
- Computer Science

You can continue to learn more in your undergraduate studies by taking courses at university in

- Virtual Design and Construction

CAREERS THAT APPLY CIVIL ENGINEERING IN YOUR COMMUNITY:

- Engineer
- Project Management
- Construction Management
- BIM Specialist

Dr. Sheryl Staub-French | ssf@civil.ubc.ca | Civil Engineering | BIM TOPiCS Lab | 604.827.5118
2031-6250 Applied Science Lane | University of British Columbia | https://www.ubc.ca/

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FOOD & HUMAN NUTRITIONAL SCIENCES

DR. ROTIMI ALUKO'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

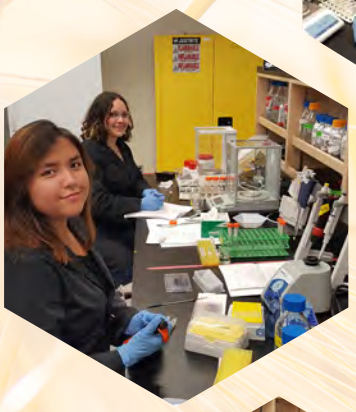
Spend a week in the life of a Food & Human Nutritional Sciences student in Dr. Rotimi Aluko's laboratory and breakdown the processes of food protein digestion! You will learn about the release of peptides that posess theraputic propoerties.

Get ready to digest food science knowledge! In this lab, you will gain experience using scientific equipment such as a spectrophotometer, microplate reader, microcentrifuge, and rotary evaporator. After this week, you will have gained university level skills in enzyme digestion, membrane ultrafiltration, and enzyme inhibition and antioxidant assays.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

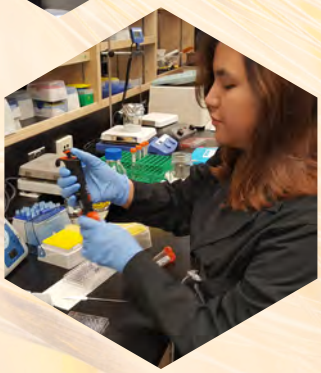
- Chemistry
- Biology
- Health & Nutrition



You can continue to learn more in your undergraduate studies by taking courses at university in

- Food: Facts and Fallacies
- Ingredient Technology for Designed Foods

CAREERS THAT APPLY NUTRITIONAL SCIENCES IN YOUR COMMUNITY:



- Quality Control/Assurance Manager
- Food Product Developer
- Nutrition Educator
- Food Service Supervisor

Dr. Rotimi Aluko | rotimi.aluko@umanitoba.ca | Food & Human Nutritional Sciences | 204.474.9555
W542 Duff Roblin Building | University of Manitoba | http://umanitoba.ca/

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FOREST & CONSERVATION SCIENCES

DR. LORI DANIELS'S LABORATORY
UNIVERSITY OF BRITISH COLUMBIA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Forest & Conservation Sciences student in Dr. Lori Daniels's laboratory and investigate years of natural history stored inside tree rings! Tree rings are warehouses of climate information through the centuries - key for conservation and sustainable management of our forests.

There is so much to discover! In this lab, you will sample and prepare cores from trees, view and measure tree rings on high-resolution scans, reconstruct forest change, and find solutions to environmental problems, while gaining university level experience using laboratory equipment such as Increment borers, power tools, and high-tech scanning tools.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Biology
- Math

You can continue to learn more in your undergraduate studies by taking courses at university in

- Forest Ecology
- Biological Sciences

CAREERS THAT APPLY FORESTRY IN YOUR COMMUNITY:

- Forest & Wild Fire Management
- Ecological Conservation
- Park Biologist
- Biodiversity Biologist

Dr. Lori Daniels | lori.daniels@ubc.ca | Forest and Conservation Sciences | Tree Ring Lab
604.822.3442 | 3230 Forest Sciences Centre | University of British Columbia | https://www.ubc.ca/

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GEOLOGICAL SCIENCES

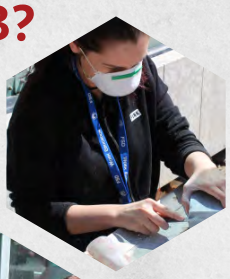
DR. NORMAN HALDEN'S LABORATORY UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Geological Science student in Dr. Norman Halden's laboratory! The LA-ICP-MS laboratory is "cutting -edge". Literally, we use lasers to obtain micron scale samples from minerals and tissues to determine their trace element content. This tells us how environments change.

You will gain university level experience inside the lab and out in nature! Practice the exciting and challenging techniques of experimental design and hypothesis, sample preparation, hands-on analysis, and data interpretation. Break through the surface of geological materials through the use of scientific equipment including lasers, mass spectrometers, water mesocosms, and mercury analyzers.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?



You will enjoy working in this lab, if you are interested in high school subjects like

- Physics
- Chemistry
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Geochemistry
- Earth Sciences
- Instrumental Methods

CAREERS THAT APPLY GEOLOGY IN YOUR COMMUNITY:

- Geological and Environmental Assessment
- Wildlife and Fisheries Management
- Natural Resource Management
- Geologist
- Toxicologist
- Environmental Scientist

Dr. Norman Halden | Nm.Halden@umanitoba.ca | Department of Geological Sciences | LA-ICP-MS Laboratory
204.474.7248 | 425 Wallace Building | University of Manitoba | http://umanitoba.ca/

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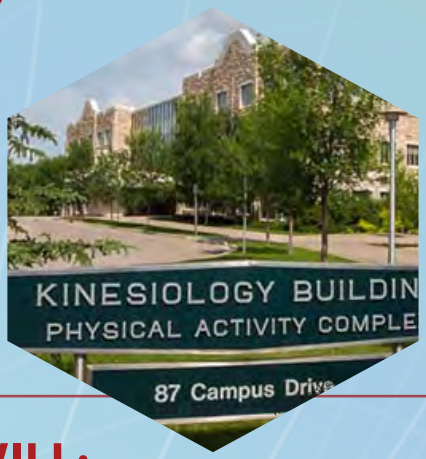
KINESIOLOGY



DR. ALISON OATES'S LABORATORY
UNIVERSITY OF SASKATCHEWAN

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Kinesiology student in Dr. Alison Oate's laboratory and investigate balance control in individuals who have a spinal cord injury. Learn about how physical activity can support healthy bones throughout your entire life. Not only that, you will get access to multiple research areas all within Kinesiology in this lab.

Learn about the importance and basis of movement! You will learn to measure movement using research tools such as accelerometers, 3D motion capture systems, electromyography, and other common tools such as FitBits. Delve into the psychological, social, and emotional aspects of movement and physical activity.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Physics
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Biomechanics
- Motor Control

CAREERS THAT APPLY KINESIOLOGY IN YOUR COMMUNITY:

- Medicine
- Physical therapy
- Exercise therapy

Dr. Alison Oates | alison.oates@usask.ca | College of Kinesiology | Biomechanics of Balance And Movement (BBAM) Lab | 306.966.1080 | 355 Physical Activity Complex | University of Saskatchewan
https://www.usask.ca/

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KINESIOLOGY & RECREATION MANAGEMENT

DR. JOANNIE HALAS'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Kinesiology and Recreation Management student in Dr. Joannie Halas's laboratory and dig deeper into the development of culturally relevant physical activity opportunities for youth! The research taking place in this laboratory is fun, meaningful, and relevant!

You will practice critical thinking, applications of games and activities, communication skills, self-reflection, and advocacy while gaining university level experience in physical education. This laboratory invites you to get actively involved in your education through games, technology, and sport science equipment.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Physical Education
- Psychology
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Physical Education Pedagogy
- Health Education

CAREERS THAT APPLY PHYSICAL EDUCATION IN YOUR COMMUNITY:

- Physical Education Teacher
- Trainer
- Coach
- Reacreation Director
- Sport Administration

Dr. Joannie Halas | joannie.halas@umanitoba.ca | Faculty of Kinesiology and Recreation Management
204.474.6061 | 212 Applied Research Centre | University of Manitoba | http://umanitoba.ca/

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MICROBIOLOGY

DR. AYUSH KUMAR'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Microbiology student in Dr. Ayush Kumar's laboratory and explore the hidden world of microbes! You will be studying the tiny yet treacherous mechanisms of antibiotic resistance in superbugs.

Gain undergraduate level experience in microbiology and gain new skills in bacterial culturing, DNA extraction, cloning, and gene expression. Explore science on the micro level using scientific techniques such as gel electrophoresis, incubators, and NanoDrop!

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Chemistry
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Biological Sciences
- Microbiology

CAREERS THAT APPLY MICROBIOLOGY IN YOUR COMMUNITY:

- Water and environmental microbiology
- Infectious disease research
- Healthcare
- Food safety
- Policy making

Dr. Ayush Kumar | Ayush.Kumar@umanitoba.ca | Department of Microbiology | 204-474-8286
412 Buller Building University of Manitoba | http://umanitoba.ca/

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PHYSICS

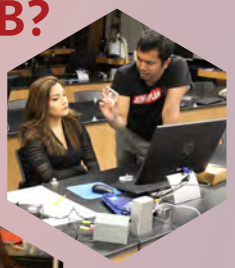
DR. JULIETTE MAMMEI'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Physics student in Dr. Juliette Mammei's laboratory and zoom into the subatomic dimension to understand the forces of nature! Researchers in this lab design and simulate the magnetic spectrometers and experimental apparatus for large-scale future subatomic physics experiments.

Search for particles and forces of nature that have not yet been discovered! You will measure the charge and mass of an electron, learn about radiation and radiation safety, and gain university level experience observing, recording, and analyzing data.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?



You will enjoy working in this lab, if you are interested in high school subjects like

- Physics
- Pre-calculus
- Chemistry

You can continue to learn more in your undergraduate studies by taking courses at university in

- Physics
- Calculus

CAREERS THAT APPLY PHYSICS IN YOUR COMMUNITY:

- Laboratory researcher
- Laboratory technician
- University professor
- Medical software developer

Dr. Juliette Mammei | jmammei@physics.umanitoba.ca | Physics and Astronomy - Subatomic Physics
204-474-6195 | 215 Allen Building | University of Manitoba | http://umanitoba.ca/

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SOIL SCIENCE

DR. ANNEMIEKE FARENHORST'S LABORATORY
UNIVERSITY OF MANITOBA

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Soil Science student in Dr. Annemieke Farenhorst's laboratory and dig through the layeres of the Soil and Water Research Laboratory. We work in harmony with First Nations communities to address critical issues in the areas of source water and drinking water quality.

You will get your hands dirty! Learn how to take water and soil samples for scientific experiments using the sampling pole; How to analyze for bacteria in water samples using a membrane filtration system; How to describe a soil profile; How to find nematoes (tiny!) in soils; How to measure water quality.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Geography
- Chemistry
- Biology

You can continue to learn more in your undergraduate studies by taking courses at university in

- Pesticides: Environment, Economics & Ethics
- Remediation of Contaminated Land

CAREERS THAT APPLY SOIL SCIENCE IN YOUR COMMUNITY:

- Coordinator of the Indigenous Collective, Lake Winnipeg Foundation
- Environmental Scientist
- Technical Marketing Agronomist
- Community Engagement Coordinato
- Chief Administrative Officer
- Environmental Officer
- Teacher
- Water Quality Adviser

Dr. Annemieke Farenhorst | annemieke.farenhorst@umanitoba.ca | Department of Soil Science
204-474-6858 | Soil and Water Research Laboratory | University of Manitoba | http://umanitoba.ca/

This pamphlet was created by the Prairie NSERC Chair for Women in Science and Engineering program: cwse-prairies.ca

VETERINARY MEDICINE

DR. ANDY ALLEN'S LABORATORY
UNIVERSITY OF SASKATCHEWAN

IF YOU CHOOSE THIS LABORATORY, YOU WILL:

Spend a week in the life of a Veterinary Medicine student in Dr. Andy Allen's laboratory and spend a week doing what veterinarians do!

As a student researcher in this laboratory, you will help examine cats, dogs and other pets in our Veterinary Medical Centre; visit horses, cattle and other farm animals with our Field Service veterinarians; and learn about diagnostic testing such as medical imaging, clinical pathology, and autopsy.

WHICH SCHOOL SUBJECTS ARE RELEVANT TO THIS LAB?

You will enjoy working in this lab, if you are interested in high school subjects like

- Biology
- Chemistry
- Physics

You can continue to learn more in your undergraduate studies by taking courses at university in

- Animal Science
- Anatomy and Physiology

CAREERS THAT APPLY VETERINARY MEDICINE IN YOUR COMMUNITY:

- Practicing veterinarian
- Veterinarian surgery
- Medical imagery
- Pathology and public health
- Animal and human health researcher

Dr. Andy Allen | andrew.allen@usask.ca | Western College of Veterinary Medicine | Department of Veterinary Pathology | WCVM 1630 | 306-966-7294 | University of Saskatchewan | www.usask.ca/

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APPLICATION

There are two ways to submit completed applications:

Option A: Electronic Submission (preferred)
Download the digital version of the application form at **www.vernajkirkness.org/application-form**
Complete the form (fill in the required fields on a computer / in typing).
Email completed applications to: **susan@vernajkirkness.org**

Option B: Fax Submission
If you do not have access to computer/internet to submit your application, you may submit it by fax.
The following pages contain an application form that can be photocopied or scanned.
Ask someone at your school to make a photocopy of the form provided on the following pages.
Complete the form by hand (please PRINT clearly).
Fax the completed form to: **204-258-2063**

An incomplete application will not be considered. A completed application includes:

STUDENT INFORMATION (Parts 1 & 2) & CONSENT FORM (Part 6)
Complete the student information and the parent/guardian teacher information in Parts 1 and 2, and the consent form in Part 6 of the application. Please provide accurate and complete contact information. If we are unable to speak to your Parent or Guardian you will not be considered for acceptance into the Program.

SELECTION OF RESEARCH PROGRAM (Part 3)
This booklet contains a partial list of participating faculty. The complete list of 60 current faculty and research projects (6 Universities) can be found at **http://www.vernajkirkness.org/application-form/research-areas/**. List your 3 mentors/projects in order of preference.

NOTE: We will try to match each student's preference but this is not always possible. Applicants must be prepared to work in any laboratory that they are assigned to.

REFERENCE LETTER (Part 4)
Ask one of your teachers or guidance counselors to provide a letter of reference. The letter of reference should indicate that you have the interest and ability to attend college, university or other post-secondary school after graduation from grade 12 and that attending the Verna J. Kirkness Science and Engineering Education Program would help you to decide what you would like to study. Your reference should indicate how they know you and explain why you would be a good participant for this Program.

ESSAY (Part 5)
In a maximum of 300 (TYPED) words, please explain why you are interested in attending the Verna J. Kirkness Science and Engineering Program. Applications with less than 50-word essays will not be considered. This essay is the most important part of the application!

VERNA J. KIRKNESS
SCIENCE AND ENGINEERING EDUCATION PROGRAM

APPLICATION

The Kirkness Program provides the opportunity for Grade 11 First Nations, Métis or Inuit students to spend one week in a science or engineering research laboratory.

All application materials must be received before the deadline.
Submit complete application to susan@vernajkirkness.org or fax to 204-258-2063.

CHECK TO ENSURE YOUR APPLICATION INCLUDES:

☐ **COMPLETED APPLICATION, INCLUDING SIGNED CONSENT FROM PARENT OR GUARDIAN**

- ☐ Please check here (if you do not have a scanner) to indicate that you will be faxing your Parental Consent separate from the emailed application.
- ☐ Please check here if you plan to fax the entire application (instead of email).

☐ **LETTER OF REFERENCE FROM YOUR TEACHER OR GUIDANCE COUNSELLOR**

COMPLETE THE FOLLOWING WITH YOUR TEACHER OR GUIDANCE COUNSELLOR.

- ☐ Complete pages 1-3 with a computer (preferred), typed or in printing. If we cannot easily read the application it will not be processed.
- ☐ Print the consent form on page 4. Complete, sign and scan or fax per above.

PART 1 - STUDENT INFORMATION

Last name: First name:

Gender: Preferred language: ☐Fr ☐En

I am: ☐First Nations ☐Métis ☐Inuit Date of birth: (D/M/Y)
Required by airlines and university

Email address:

Phone number:

Street Address:

City: Province: Postal Code:

PART 2 - PARENT/GUARDIAN/TEACHER INFORMATION

Parent or guardian:

Parent or guardian email address:

Parent or guardian phone number:

Teacher or counsellor submitting application:

Teacher or counsellor email and/or fax address:

School:

PART 3 - RESEARCH PROGRAMS

Go to the website and look at the program offered at the university closest to your home.
Refer to http://www.vernajkirkness.org/application-form/research-areas/ for a list of research projects and faculty. Indicate your top three choices (in order of preference) by listing a program below.

Project name	Faculty name	University of
1		
2		
3		

If you are accepted, we will try and match each student's research preference but this is not always possible. Applicants must be prepared to work in any laboratory that is assigned to them.

PART 4 - REFERENCE

☐ *(Please check)* - **ASK YOUR TEACHER OR GUIDANCE COUNSELLOR TO WRITE A LETTER OF REFERENCE AND LIST THEIR NAME BELOW.**
Check the guidelines on the website for further information.

Name of Reference:

Email and/or fax:

Daytime Phone:

PART 5 - ESSAY

In a maximum of 300 (TYPED) words, please explain why you are interested in attending the Verna J. Kirkness Science and Engineering Education Program. This essay is the most important part of the application. The more information you provide, the better chance you have of being accepted. Applications with less than 50 words will not be accepted.

☐ *(Please check)* - **FOLLOWING THE COMPLETION OF THE PROGRAM, I AGREE TO PROVIDE THE VERNA J. KIRKNESS SCIENCE & ENGINEERING EDUCATION PROGRAM WITH SHORT WRITTEN UPDATES ON AN ANNUAL BASIS ABOUT MY ONGOING EDUCATIONAL ACTIVITIES**

PART 6 - PARENTAL CONSENT

Print this page and ask your parent or guardian to complete it. Give the signed consent to your teacher or guidance counsellor. Completed Parental Consent Form must accompany the emailed APPLICATION. Email to susan@vernajkirkness.org or if you do not have a scanner please fax to 204-258-2063.

I _____ understand that _____ has applied to participate in the Verna J. Kirkness Science Education Program (hereinafter called the "Program") at either the University of Manitoba, University of Saskatchewan, University of British Columbia, University of Calgary, University of Ottawa or the First Nations University of Canada (will be determined upon acceptance).

I understand that participation in the Program will involve: 1) the applicant spending one week living on campus and working as part of a research team at a University; 2) as part of the participation in the Program, the applicant working with a research team in a laboratory setting, for which they will be provided with basic safety training as arranged by the Program; 3) during their involvement in the laboratory, the applicant being mentored and supervised primarily by a graduate student; 4) during periods of time outside of daily learning activities, the applicant spending time supervised by the Program chaperones. This may include afternoon and evening activities, with the applicant sharing a room with another participant of the same gender.

I understand that there are certain expectations regarding the applicant's conduct during their involvement in the Program, which will be explained to the applicant. These expectations include:

- The applicant following the instructions given to them by the mentor or lab supervisor.
- The applicant following all safety protocols in place during the program.
- The applicant conducting him/herself in a respectful and mature manner at all times.
- The strict prohibition of the consumptions or possession of alcohol or illegal substances.
- Violation of any of the above rules may result in the applicant being asked to leave the Program.

I understand that participation in the Program may involve the applicant coming into close proximity with, and working with scientific apparatuses and/or materials that may be dangerous if mishandled. I understand that all participants will be asked to complete a survey at the end of the Program.

I further understand that, if the applicant is accepted to participate in the program, I will be required to sign a situation specific consent form prior to his/her participation fully indemnifying the host University, as well as the program planners, administrators and personnel from any and all liability for any injury which may be suffered by the applicant during his or her participation.

Having read the above, I consent to the applicant's submission of an application to participate in the Verna J. Kirkness Science and Engineering Education Program.

_____

Signature Relationship to applicant Date (day-month-year)

PRINT NAME:

BEST CONTACT PHONE NUMBER:

EMAIL ADDRESS: