



Faculty of Agricultural and Environmental Sciences

Summer Internships 2019

First Name	Last Name	Academic Program	Year	Internship Organization	Internship location
Kayla Nicole	Kuhlmann	Environmental Biology	U1	American Bear Association @ Vincr Schute Wildlife Sanctuary	Orr, MN, USA
Angélique	Meyer	Life Sciences	U3	Archelon Sea Turtles	Greece
Carina	Dumais	Bioresource Engineering	U1	Bieler Cranberries	St. Louis de Blandford, QC
Stephania	Tatianchenko	Bioresource Engineering	U3	BRP	Valcourt, QC
Sophia	Gregory	Environment, Food Production and Environment	U2	Bullock Lake Farm	Salt Spring Island, BC
Jessy	St-Amour	Bioresource Engineering	U1	Carya Farm	Senneville, QC
Ying	Zhang	Nutrition	U2	Changde Meat Machine Company	China
Jonathan	Diamond	Environmental Biology - Wildlife Biology	U3	Charles River Laboratories	Senneville, QC
Audrey	Roberge	Animal Health and Disease	U2	Clinique vétérinaire du Domaine Vert	Mirabel, QC
Aynsley	Merk	Animal Health and Disease	U1	Clinique Vétérinaire Timberlea	Kirkland, QC
Lea Pia	Antibi	Environmental Biology - Wildlife Biology	U2	Colombes, France - Town of	Colombes, France
Dephne	Ozen	Nutrition	U0	Danone	Istanbul, Turkey
Livio	Caputo	Bioresource Engineering	U4	ENEL Green Power	Andover, MA, USA
Jiahua	Chen	Environmental Science	U2	EPFL - Solid Waste Treatment	Lausanne, Switzerland
Xinchi	Qi	Bioresource Engineering	U2	Ericsson - R&D Centre	Shanghai, China
Daniil	Katkov	Bioresource Engineering	U2	Gault Nature Reserve	Mont Saint-Hilaire, QC
Thomas Jake	Savage	Bioresource Engineering	U3	General Electric	Brossard, QC
Connie-Anne	Lafferty	Bioresource Engineering	U3	Hebrew University, Faculty of Agriculture, Food, and Environment	Israel
Sarah	Krnjevic	Animal Health and Disease	U2	Hôpital Vétérinaire Verdun	Verdun, QC
Olivia	St-Pierre	Bioresource Engineering	U1	Institut de recherche en biologie végétale	Montreal, QC
Frederique	Tremblay	Wildlife Biology	U2	Institute for Seabird Research and Conservation	Middleton Island, Alaska

Joel	Harms	Bioresource Engineering	U0	Jacob Blaustein Institutes for Desert Research, Ben-Gurion University*	Israel
Aixuan	Liao	Dietetics	U2	JUCCCE	Shanghai, China
Florence	Vachon-Laberge	Ag and Envr Science	U2	Laboratoire d'agroécologie de l'université Laval - Dr Halde.	Québec, QC
Catherine	Destrempes	Environmental Biology	U3	Laboratoire d'ornithologie marine de Rimouski - LOMR Marine ornithology laboratory of Rimouski	Gaspé, QC
Jasmine	Roberts	Bioresource Engineering	U3	Laurentide Controls	Kirkland, QC
Yueran	Zhao	Life Sciences	U2	Macdonald Research - Brian Driscoll	Macdonald Campus
Fiona	Chan Pak Choon	Life Science	U2	Macdonald Research - Sebastien Faucher	Macdonald campus
Nicole Rhiannon	Giles	Ag and Envr Science	U1	Macdonald Research - Sergio Burgos	Macdonald Campus
Alexandra	Kerasias	Nutrition	U2	Macdonald Research - Stan Kubow	Macdonald Campus
Aaron	Brisebois-McGuire	Environmental Biology	U1	Macdonald Research - Francis Van Oordt	Peru
Youngsoo	Lee	Bioresource Engineering	U3	Macdonald Research - Grant Clark	Macdonald Campus
Daana	Tavanaei	Nutrition	U1	Macdonald Research - Igor Cestari	Macdonald Campus
Mei	Nathan	Life Science; Animal Health	U1	Macdonald Research - Institute of Parasitology	Macdonald Campus
Elena	Lonina	Life Sciences	U2	Macdonald Research - Institute of Parasitology	Macdonald Campus
Paul	Rougeau	Bioresource Engineering	U4	Macdonald Research - Marie-Josée Dumont	Macdonald Campus
Intisar	Syed Mohmood	Bioresource Engineering	U3	Macdonald Research - Mark Lefsford	Macdonald Campus
Janina	Ruffini	Life Science - Microbiology and Biotechnology	U3	Macdonald Research - Ronholm Lab	Macdonald Campus
Jessica	Bao	Environmental Biology	U3	Madagascar Biodiversity Project (Omaha's Henry Doorly Zoo and Aquarium (OHDZA))	Madagascar
Etienne	Mathieu	Life Science - Environmental Biology - Plant Biology	U1	Medicago	Quebec, QC
Joannie	D'Amours	Ag and Envr Science	U2	Ministère de l'Agriculture des	Sherbrooke, QC

				Pêcheries et de l'Alimentation	
Tracy	Liu	Food Science	U2	Moores Research	Montreal, QC
Santiago	Sottit Duprat	Bioresource Engineering	U3	Nestle Canada	Toronto, Ontario
Filip	Rakic	Environmental Biology - Wildlife Biology	U3	Nunavik Marine Region Wildlife Board	Inukjuak, QC
Cassandra	Zafrani	Life Science - Animal Bio	U2	Pierrefond Animal hospital	Pierrefond, Montreal, QC
Keel	Scruton	Bioresource Engineering	U2	Pratt and Whitney Canada	Longueille, QC
Guillaume	Céré	Bioresource Engineering	U2	Quebec Without Borders/ Québec sans frontières/ CREDIL	Peru
David	Cox	Bioresource Engineering	U2	RAD Technologies, Inc*	Thetford Mines, QC
Katherine	Palevsky	Bioresource Engineering	U2	Reliance Construction Group	Montreal, QC
Sarah	Foster	Agricultural Economics	U1	Richardson International - Richardson Pioneer	Dawson Creek, BC
Kate	Sanzari	Environmental Biology	U1	Services Environnementaux Faucon	Mont-Tremblant, QC
Ziyi	Yu	Nutrition	U2	Shanghai General Hospital	Shanghai, China
Alexa	Brody	Nutrition	U2	Share the Warmth	Montreal, QC
Cael	Geier	Bioresource Engineering	U3	Teck Coal	Sparwood, BC
Elodie	Chatal	Bioresource Engineering	U2	Tetra Tech	Boucherville, QC
Ilias Mikhail	Hader	Bioresource Engineering	U2	United Nations Industrial Development Organization	Vienne, Austria
Haley	McKercher	Bioresource Engineering	U2	University of Calgary	Calgary, AB
Megan	Raymundo	Concurrent - Nutrition and Food Science	U1	Weston Foods	Mississauga, Ontario
Sara	Barjoud	Bioresource Engineering	U3	WMH Corporation	San Jose, CA, USA
Marc	Massicotte	Bioresource Engineering	U3	World Bank	Washington, DC, USA
Bianca	Loge	Nutrition - Global Nutrition	U2	World Health Organization	Moscow, Russia
Wenyao	Fu	Food Science	U2	Yantai Siwin Foods Ltd.	Yantai, Shandong, China

* video submitted in lieu of poster



Photographer: Nicole Kuhlmann
Ginger's (bear) den

About the Organization

The Vince Shute Wildlife Sanctuary is a nonprofit located in the woods of Orr, Minnesota. It began because of a logger named Vince Shute, who started feeding wild black bears in the 1970s, and the sanctuary continues feeding in order to keep the surrounding community safe. The sanctuary then educates visitors, who can observe the wild black bears in their natural habitat, and works to dispel many misconceptions about bears and wildlife in general so that people and wild animals can coexist harmoniously.

Nicole and fellow intern making bear food
Photographer: Madison Brezinka



Job Description

During the day, interns are responsible for making bear food, maintaining the sanctuary, monitoring black bear behavior, feeding the bears, and other maintenance chores. During the evenings, the sanctuary is open to the public and interns greet visitors, park cars, sell admission tickets, talk about the history of the sanctuary, educate the public on black bears, point out bear behavior, give educational talks, sell souvenirs in the gift shop, and feed the bears.

Hades: subadult male American black bear
Photographer Nicole Kuhlmann



Outcome

I have gained so much insight into the world of American black bears, and learned the skills to work in the field and interpret wildlife behavior that will last a lifetime. I learned all about the ecology, physiology, and behavior of black bears, but also awareness of the environment they live in, providing plant, bird, and animal track identification skills. This internship reassured and strengthen my interest in wildlife conservation, and I am now sure that I want to spend my life working outdoors and in the field. Overall, the internship gave me the confidence and basic skill set that I need to pursue further research in the field.



Entrance of the Zakyntos Archelon camp site

ARCHELON

The Sea Turtle Protection Society of Greece



Turtle tracks leading to a nest

Archelon, a NGO, has been protecting and monitoring Loggerheads sea turtles in Greece since 1983, where 90% of the Mediterranean Loggerheads nest every year.

The project I took part in was located on the Island of Zakynthos, where the other volunteers and I worked in concert with the National Marine Park to conserve this species.

To do so, every morning we surveyed 5.5km of nesting beaches, to record nesting activity and protect every new nest laid during the night. We also proceeded to tag and measure nesting sea turtles at night in order to get more data about the species, their habits and their behaviours. This year, over 1200 nests were found by Archelon volunteers on Zakynthos, each of them containing about 100 eggs!

In addition, a lot of public awareness activities were conducted in hotels and on boat trips, as well as the presence of informational kiosks, where we did educational talks about Loggerheads, to explain to tourists what constitutes behaviours harmful to the turtles.



Recording violations of the Marine Park rules on a turtle spotting boat. Photo credits: Hannah Rolland

The 11 weeks spent with Archelon allowed me to gain considerable knowledge about turtles, their biology, the nesting process, their behaviours and some cool fun facts.

I learnt how to quickly recognize nests and find the clutch and ensure they were well protected. I also soon became a morning survey leader during which I made sure every team member understood the monitoring process and that the tasks were appropriately shared. My public speaking skills improved with the presentations I gave in front of big crowds. I was very lucky to participate in a very hands-on conservation project, where I could be highly involved with the organisation and the work we did.



Turtle's nest



Bastien Renaux and myself finding the clutch of a nest
Photo credits: Charlotte Bourbiaux



Morning Turtle coming back to the sea after nesting

The majority of my time working was spent on the beach, either under the nice Greek sun or the moon and the Milky Way, surrounded by people coming from every part of the world. Needless to say, I loved my summer there, as I got to work closely with big impressive reptiles that have been around for millions of years and continue to come nest, year after year, on the pristine beaches of Zakynthos. Unfortunately, humans have had and continue to have huge negative impacts on Loggerheads but also on the 6 other sea turtle species, through poaching, pollution, fishing and climate change, and seeing it firsthand helped me confirm my desire to work in conservation.



Female turtle coming up to breathe



Archelon's volunteer team of Zakynthos, July 2019



Recording data in the Morning Survey book. Photo credits: Lisa Denaris



Contact Information

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Assessment Services
McGill University



McGill

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Pierre-Luc Leblanc

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Contact me: Carina Dumais

carina.dumais@mail.mcgill.com

Canneberges Bieler Internship



Description of Tasks

During a 13-week internship I worked on a cranberry farm with the technical team in the agronomy department. I was responsible for keeping track of data by entering it in computerized spreadsheets as well as for assisting the technical team of the agronomy department and the hydrology engineering department. Tasks I underwent included insect scouting, bud observation, testing water coverage uniformity of irrigation systems, and performing grain size analysis tests on soil samples

What I Learned

I learned how to sweep net a field and how to recognize insect species that are harmful towards the cranberry plant. I can calculate density and percent cover of



A picture of me sweep netting for harmful insects (Photo: Suzan Hamel)

uprights in a field. I am able to observe a field and notice areas that are affected by pests and weeds. I have general knowledge on the drainage and irrigation systems. I know about optimal soil water tension level and groundwater level. I can properly sample soil with a probe as well as uprights to dissect and identify healthy buds and fruit under a microscope. I know how to install a Hortau and to

use a grain size analysis system with the Mastersizer 2000 program to analyze soil samples for their composition.



A picture of me sampling uprights to study them (Photo: Marielle Roux)

Challenges and Accomplishments

My biggest challenge was the uncertainty of a new place. To overcome this, I stayed connected with my regular support network, while also building relationships with colleagues. My biggest accomplishment was completing an independent project involving water coverage uniformity of the irrigation system.

Effect on My Future

In the future, this experience will help me as a BREE student in terms of my knowledge surrounding hydrology engineering since this is related to

what I wish to do for work after graduation.

This includes

being informed about soil sampling and soil analysis, the pressure differences in irrigation systems, working with sustainable agriculture and the setting up of drainage systems as well as the infiltration rate of water in land.



A picture of fertilizer application in the organic sector of the farm

THE OPPORTUNITY

ABOUT THE ORGANIZATION

The organization that hosted my internship is Bombardier Recreational Products (BRP). Although it was founded by Joseph-Armand Bombardier and was previously the same company as Bombardier Aeronautics (Bombardier Inc), BRP is a separate public company. It is located in Valcourt, a small town in the Eastern townships with a population of 1500 people. There are five main lines of product: personal watercrafts (Sea-doo), snowmobiles (Ski-doo), Roadster, all-terrain vehicles (ATV) and side by side vehicles (SSV). BRP is an international company with production sites located in Finland, Austria, Mexico, USA and Canada. The products are sold in dealerships all over the world in over 100 countries.



Valcourt Product Development Centre

THE DEPARTMENT THAT HOSTED MY INTERNSHIP

I was hired by the computer aided engineering (CAE) team. It's main goal in the company is to support tools of the engineering community. They manage support requests from designers and engineers related to multiple issues. In the past few years, the team has been working on the migration of the current systems to a new product lifecycle management software provided by Dassault Systems. This project is important for the company as it would allow an increased level of collaboration between all employees.

MY ROLE IN THE COMPANY

I was supervised by Martine Lecompte (a project leader in the CAE team) during my entire internship. My role was to represent the engineering department in the SAP migration project. I was working with people from different teams to ensure data integrity in the new system. In order to understand data sets, I had to communicate with many designers, engineers and members of the procurement team.



CONTACT INFORMATION



My name: Stephania Tatianchenko
Studies: U4 Bioresource
Email: Stephania.tatianchenko@mail.mcgill.ca

CONTRIBUTION OF MY INTERNSHIP TO MY FUTURE CAREER AND STUDIES

Working in the computer aided engineering department allowed me to meet people from different departments. I was able to build a better understanding of the role of an engineer in a big company. Working on the integration of a project lifecycle management software made me appreciate the design process we learned in my university classes. BRP also gave me the opportunity to discover many collaboration tools and design tools. I am planning on coming back to BRP as a full time employee next summer.



Small-Scale Farming Internship at Bullock Lake Farm

Salt Spring Island, BC



Above: Me harvesting ranunculus flowers (photo by Maasa Lebus)

As an apprentice on the farm, my role was to perform day-to-day farm tasks. These included seeding, planting, weeding, irrigation management, trellis building, harvesting and processing of the vegetables, fruits and flowers produced on the farm. The farm runs an eighty member CSA (community supported agriculture) program, with two pickup days a week. In addition, the farm hosts weddings, sells through a farmstand and runs a farm-to-table kitchen and café on the property.

This opportunity allowed me to acquire practical knowledge in the field of agriculture and experience first-hand what a farming lifestyle is like – long hours, variable weather and lots of work! I was able to try new things and develop new skills, as well as spend a week as acting farm manager. This internship has pushed me to consider farming as a potential career path that I had otherwise not considered. I developed a great appreciation for farmers and have become a confident and independent farm worker.



Above: Me building a trellis for peas (photo by Maasa Lebus)

A Summer on an Organic Farm

Internship Project

Effect of weed control on growth of plants

It is no surprise- weeds do affect the growth of plants !



Know what the farmer really needs

Engineer to help farmers & to protect environment

Hands on experience to apply the theory

First experience on a farm

Small scale farming- a new generation of farmers

Local organic producer



Myself : Jessy.st-amour@mail.mcgill.ca

Owner : Alex Flores and Ramzy Kazouf
(514) 505-4300 39 ave. Phillips Senneville, QC

Summer Internship in Xingye Meat Machinery Ltd. In China



Xingye Meat Machinery Company specializes in designing, manufacturing, marketing, installation and after sale services of livestock processing equipment. It has been established for over 20 years and has been awarded for 50 certifications and several national awards.

Jiawen Zhang, Machinery Engineer

Phone number: 13911331733



I am holding the chopping part of the robot. The employees are installing the components to make the robot.

This is ready to use robot. It is controlled by a PC based system and improve the efficiency and hygienity during n processing. It is a huge and costly machinery. It also show the potential of further automation and innovation in thi: industry.

My achievements and My gains

potential cooperation between the suppliers and Xingye company. I contributed to 3 pages of the booklet that the company will be using for advertising.

I learnt about meat machinery and learnt to read CAD graphics, especially in line production. I developed my communication skills and become more confident in team working. But I also realized that this field is not what I will be pursuing for which will shift my focus in food industry in general to public health.



As an intern at Xingye Meat Machinery Ltd. My roles include accompanying my supervisor visiting clients' manufacturing sites with itinerary assistance; outreaching for novel machinery product in the market required by the company; making booklet and translation between English to Chinese and vice versa. It is also my responsibility at the beginning to familiarize with the whole meat processing process including terminology and functions.

Summer Internship at Charles River Laboratories

Jonathan Diamond – U3 Environmental Biology
(Jonathan.diamond@mail.mcgill.ca)



Figure 1: A screen shot from the Charles River Laboratories Website giving an overview of the company. Credit: <https://www.criver.com/about-us>

Job Description:

My role at Charles River Laboratories (CRL) was that of a support technician. My duties thus depended on which technician I was working with at the time. I started my summer in the “Food Room” where I assisted in the food and meal preparations.

Afterwards, I was positioned in the “Pump and Urine Collection” depot. Here I worked on various set-ups on infusion studies and urine collection studies.

Lastly, I was also working with the Gas Sterilization machine that we use in the department. This was used daily to ensure the equipment is up to code and sterilized.



Figure 3: This is a technician placing equipment in a gas sterilizer for sterilization.

Credit: “Home.” Columbus Air Force Base, www.columbus.af.mil/News/Art/photo/2001593802/.

What I learned from this experience:

This experience provided many learning opportunities for me. This was a good first-hand look into working at a corporate company, which provided many trainings and lessons. This included an introduction to drug development, conflict of interests and Good Laboratory Practice (GLP). This internship was also a great chance to learn about the many different steps in major research. This spans from a technician position such as myself to the study directors and research associates. This also includes many skills that I mastered over the summer, perfect for research jobs.

About Charles River Laboratories:

Charles River is a preclinical research facility that for 70 years has worked on the discovery, development and safe manufacturing of new drug therapies. This company started in 1947 when a veterinarian started his own laboratory studies in Boston by the Charles River (hence the name of the company). That one-man show has now become an international network leading to discovery and development of drugs and medicine. This is done with 80 facilities in 20 countries. Furthermore, in 2018 CRL supported the development of nearly 85% of FDA approved drugs.



Figure 2: This is the standard uniform for employees in my department. Full body scrubs with steel toed boots and safety glasses (hidden by the hair here). Credit: G. McCommeau

Contact information of Charles River Montréal:

Phone: (514) 630-8200

Address: 22022 Trans-Canada Hwy, Senneville, QC H9X 1C1





Myself preparing a PCR vaccine, the core vaccine for cats (Rose)

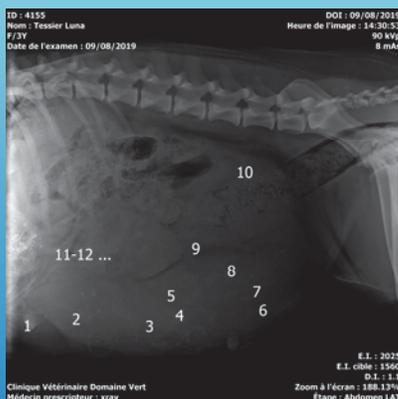
- **Technician Assistant** : Prepare prescriptions, assist in pre-consultations, administer patient medications and treatments
- **Veterinarian Assistant** : Assist the veterinarian in surgery
- **Animal Caregiver** : Ensure proper care and hygiene of the hospitalised patients, general maintenance of the clinical environment
- **Receptionist** : Customer service, schedule appointments, answer general medical inquiries, prepare surgery papers and vaccination documents

- Understanding of pathologies and their evolution in clinical practise
- Animal behavior
- Beginners knowledge on how to interpret X rays
- Medical lingo and proper medical language
- Veterinary clinic management
- Customer support

- Further motivation to pursue veterinary medicine
- Insight into business management
- Understanding of various careers within the field such as orthopedics



Myself administering hydrotherapy treatments to Jacks attained by scrotal swelling, a post operative complication of castrations (Rose)



Diagnostic X ray showing pregnancy in a female dog.



Diagnostic X ray showing bilateral patellar luxation in a dog.

Supervising Veterinarians

Dr. Amanda Glew
&
Dr. Tiffany Gabrielle-Bellantoni

info@veterinairetimberlea.com



Intern

Aynsley Merk

BScAgEnv Life
Sciences-
Animal Health and
Disease U1

ainsley.merk@mail.mcgill.ca

“Some people talk to animals. Not many listen though. That’s the problem.” – A. A. Milne



– Corneal ulcer (from a cat fight) – Exploratory Laparotomy (sock-eater) – Extraction of Broken Canine (frisbee) – OVA Hip Quality X-rays –

My placement at Timberlea Veterinary Clinic was a giant step towards acquiring the non-academic requirements (hours with vets and letters of recommendation) needed to apply to the Doctor of Veterinary Medicine program at the Ontario Veterinary College. The greatest challenges were finding a clinic that would take me on as an intern, and remembering all the details when writing up the medical notes for the mornings consults at the end of the day. Always feels like an exam!

Clinical Skills

- Taking a history
- TPR (temperature, pulse, respiratory rate)
- Disease presentations
- Blood (collection, CBC and chemistry profiles)
- Urinalysis
- Ear cytology (staining and microscopy)
- Taking X-rays
- Filling prescriptions
- Administering vaccinations
- Handling/restraining techniques
- Navigating the Logivet computer system
- Writing up SOAP medical notes

Surgical Skills

- Pre-op
 - Sedation, intubation, prep
 - Observation
 - Routine: Spay/neuter, mass removal
 - Abdominal: Ex-lap, splenectomy, organ biopsies
 - Dentistry: cleaning, extractions, degree of bone loss
 - Facial: enucleation, nostril enlargement
- Assisting
 - Scrubbing-in procedure and rules of aseptic technique
 - Cauterizing blood vessels, grabbing material/tools, adjusting monitoring/anesthesia equipment, closing incision sites
 - Cranial cruciate ligament repair surgical assistant
 - Performing post-euthanasia necropsies if required
- Post-op
 - Monitoring, extubating, laser therapy, giving injections, x-rays



– Poodle brothers awaiting neutering – Doing an autopsy on a euthanized Bulldog – Radiographs of a rock eater – Spay surgery second opinions –



All photos are my own.

This internship would not have been a possible without the Enriched Educational Opportunities Bursary.



Going against the Odds: Doing an Environmental Internship 10 km away from Paris

At Colombes' Town hall: +33 1 47 60 80 00
Colombes 92700, FRANCE

By Léa Pia Antibì
lea.antibi@mail.mcgill.ca

Working in a Town Hall at the Green Areas, Cleaning and Urban Ecology Services

I fulfilled the following job titles:

- **Gardener;** I planted flowers, collected seeds, reaped fields and worked in a horticultural centre.
- **Ecological manager;** we ran faunal and floral inventories and maintained ecological sites. I started building a garden' eco-label file.
- **Animator;** we set up activities for children where I introduced them to arthropods, material recycling and energetic resources. I also got to deliver composts and educate the public about its functioning.



Myself helping goats used for eco-grazing reach the upper leaves of a shrub. (Photo: Maëlle)

Specimens I identified during inventories:



Black tailed-skimmer,
Common blue, *Orthetrum cancellatum*
Polyommatus icarus
On a hop clover,
Medicago lupulina



Myself building a haystack after reaping the field. (Photo: Mohammed)



Colombe's horticultural centre where they produce a part of the plants needed in town. (Photo: myself)

Made me Reconsider my Career

Seeing how a town operates from within, I learned a lot about administrative duties. Additionally, this job helped me familiarise myself with plant identification and gain professional experience as an ecologist. As a result, I see urban ecology from a different perspective and realise that as cities are expanding, it will become crucial to promote a greater biodiversity in them.

Colombes



Office of Student
Academic services
Macdonald Campus



McGill
UNIVERSITY

Atakan Ozdemir, Nutricia Paediatric Medical Nutrition Head. During a department quarterly performance presentation



Daphne Ozen (me). During daily research review :)



Left to right: Daphne Ozen, Mahi Gizem Kiribrahim, Ece Naz Kirkil. During the launch of project "Happy Tales"

A Dae-none-licious Summer!

Employer Name: Atakan Ozdemir
Contact e-mail: atakan.ozdemir@nutricia.com
Intern contact e-mail: gulenay.ozen@mail.mcgill.ca

Job Description:

- Aiding with daily communication to health media agencies.
- Partaking in social responsibility projects such as "Happy Tales"
- Joining weekly briefing sessions and taking the meeting notes.
- Staying on top of current research news from Danone Nutricia and various other paediatric medical nutrition research.
- Learning Outcomes;

Project: 'Happy Tales' a project where Danone Nutricia staff recorded tales for leukaemia patients in Children's Hospital.

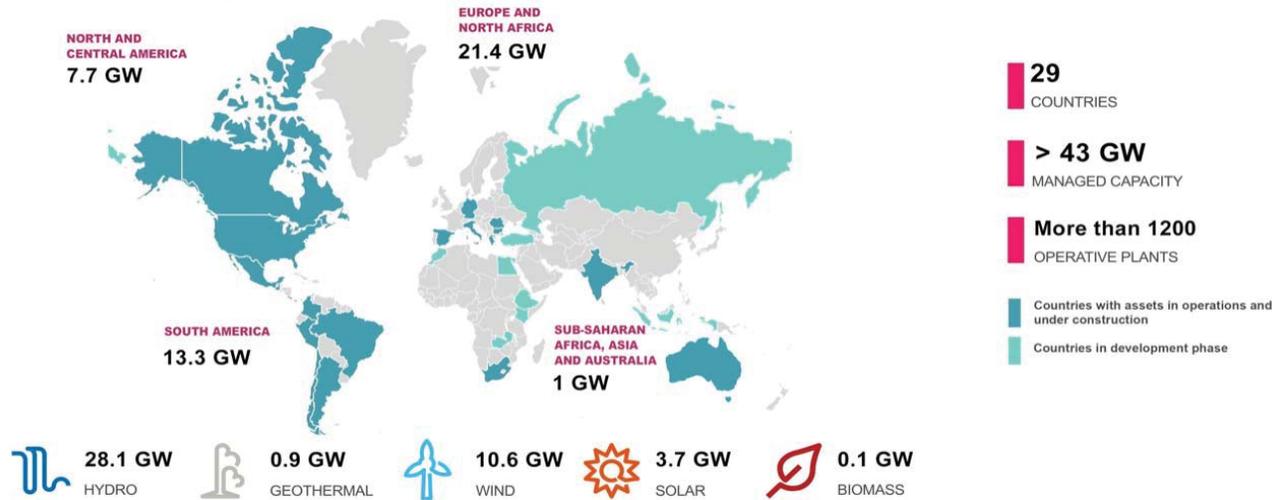
Learning Outcomes: I was very confused about what it would like to be to work in a medical nutrition company, and I truly got my mind very clear on what a career in this area looks like. I also have learnt how international companies work by collaboration between international units. Therefore I strongly advise to any nutrition that wishes to work in an international company to intern for at least summer during their undergraduate degree!



One of the medical introduction cards that I was involved in creating



Enel Green Power (EGP) is the Enel Group business line dedicated to the development and management of **energy production from renewable sources** like solar, geothermic, wind, hydroelectric and biomasses.



This summer I interned in the **Engineering & Construction Department** and the **Innovation & Sustainability Department** of the North American Branch.

United States

100 Brickstone Square, Suite 300
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 Phone: +1 978 681-1900
 Fax: +1 978 681-7727
 Email: egpna.communication@enel.com

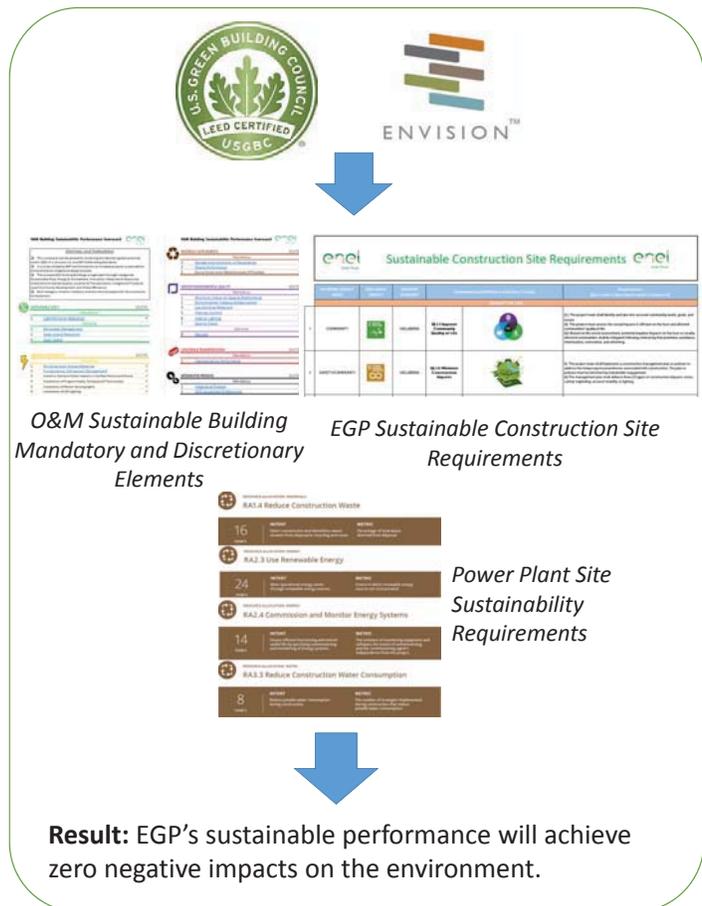
Some of EGP North America's Clients:



Among other projects, I integrated the **"Leader in Energy and Environmental Design" (LEED)** framework and the **"Envision Sustainable Infrastructure"** framework into various interrelated technical specifications, contracts, and processes of the company. Thus, ensuring all future operation and maintenance buildings, construction site camps, and power plants will reach a Gold Level of Performance, and essentially **achieving zero negative impacts on their surroundings.**



*Presenting at the **Annual EGP, Enel X, and General Electric Summer Engineering Conference** on the application of energy and water saving technologies during all stages of the design process to maximize profits and promote sustainable practices.*



Personal Information:

Livio Caputo, U4, Bioresource Engineering
livio.caputo@mail.mcgill.ca



Continuous Rotifer Culture Maintenance

I was responsible for the maintenance of both the culture of rotifer and microalgae. In other words, making medium, monitoring the temperature, recording the growth of population and feeding rotifers with microalgae. I am also responsible for the preparation of the experiment and running the experiment. I finished with a paper on rotifer maintenance, namely *Continuous Cultivation of Brachionus calyciflorus for Laboratory Experiments*, which is an overarching document on the instruction of how to feed rotifers.

Research Intern

EPFL-PSI professorship on Solid Waste Treatment

What I learned from the internship

I learn some essential skills in research and experiments, namely scientific paper writing, laboratory practices. I also become more aware of the importance of being organized and methodical as well as making a detailed log of things that have been done in the lab, etc. I have learned a lot about rotifers and microalgae since I was responsible for the maintenance of both cultures. I have achieved the goal of having a writing sample for my master application, connecting with professors in the field of water treatment and getting a reference letter and also traveling around Europe!

Student

Jiahua Chen
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Employer Contact Info

Adrian Pulgarin
Doctoral Assistant
École Polytechnique Fédérale de
Lausanne (EPFL)
adrian.pulgarin@cpfl.ch



Preparing bottles for rotifer culture (Credits: Adrian Pulgarin)



SOFTWARE DEVELOPER INTERN UDM - 5G CORE | CI/CD TEAM

5G YOU SAY?

You may have heard the buzzword "5G" that has been popular in 2019, part of the credit goes to a certain Huawei ban. In fact, Ericsson is one the big player in the world to provide 5G equipment to global expansion along with Huawei and Nokia.

In short, 5G is the next generation of telecommunication that will exist over the existing 4G/LTE network. With a much higher frequency, it can multiply current bandwidth, decrease latency, thus creating many possibilities for us to maximize its potential, including **Bioresource**.

WHAT IS CI/CD?

CI & CD stand respectively for Continuous Integration and Continuous Development. Specifically, my team was focused on CI, which is integrating codes from different 5G developer team into one. The crucial part is to run integration test for each of them to ensure that everything fits well. The responsibility of my team and me were to develop and maintain the integration pipeline engine to ensure everything run smoothly.

CI GAIA DASHBOARD

- OUR INDEPENDENT PROJECT -

Displays the testing pipelines from all 5G development teams in a logical layout.

Results in better efficiency at monitoring the pipelines for developers: would just look on indoor TV instead of searching inside Jenkins.



MACHINE LEARNING IMPLEMENTATION

The ML implementation would predict what type of errors occurs when a pipeline fails. Thus, reducing greatly time spent on error debugging by developers.



RENDER OF DASHBOARD (NOT REAL REPRESENTATION)

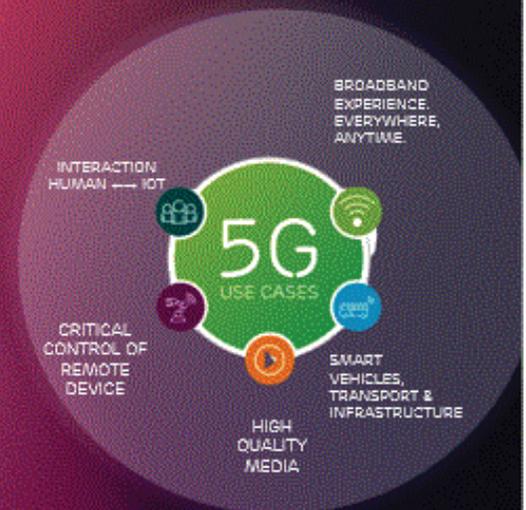
ERRORS → CONSOLE LOGS → ML ENGINE → PREDICTION

THE WORKFLOW OF ERROR PREDICTION IMPLEMENTATION, IT SCANS THE CONSOLE LOGS OF FAILED TASK, RETAINS ERROR MESSAGE AND GIVE PREDICTION USING RANDOM FOREST AND BAG OF WORDS ALGORITHM



ERICSSON R&D CENTER IN SHANGHAI

LIANGJIAN INT. TECH. PARK, 1058 TIANSHAN ROAD,
CHANGNING, SHANGHAI
488 10 8478 8000 (BEIJING)



5G USE CASES

In the picture shown above displays some of the use case of 5G. Actually, **bioresource** related fields are one of the first industry to benefit from Internet of Things (IoT) such as **smart farming** & **precision agriculture**.



XINCHI QI

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FIELD ASSISTANT AT THE GAULT NATURE RESERVE

From lake monitoring to trail maintenance passing by the design and carrying out of a survey, summer goes by quickly at Gault. The title of “Field Assistant” says nothing but also says it all. Throughout the summer you are assigned to anything that comes up as well as a few summer-long projects. Tasks include manual work, lab work, public interaction and data entry. The captions below go through some of the tasks encountered during the summer.

HOBOS

This is one of the summer-long projects, it consists of finding temperature sensors called ‘hobos’ throughout the nature reserve via GPS and acquiring their data.



Photo & editing credit: Teresa Trish



Photo & editing credit: Teresa Trish

Maintenance

This place doesn't clean itself! Fixing drainage on the trails, mowing the lawn, weeding, or other manual projects – there's always something to move or fix!



Photo credit: Danka Gauthier-Wiebe



Photo credit: Elen Bidulka

Surveys

The interns had to write and carry out a survey to better understand how locals were getting to and from the nature reserve. This is in hopes of lowering the number of people coming by car.



Photo credit: Danka Gauthier-Wiebe

Common Reed Removal

This was considered a summer-long project, through which the interns attempted to control the spread of the invasive *phragmites australis*.



Photo credit: Danka Gauthier-Wiebe

Water Sampling & Monitoring

Once a week throughout the whole summer, a few of the interns would collect data on the lake (temp, pH...) and take samples of water for zooplankton analysis and identification.



Photo credit: Daniil Katkov



Photo credit: Teresa Trish

Some more info

During the summer, the 5 interns stay in the chalet on the reserve. This is a great thing if you're looking to make some friends for life! The work environment is very dynamic and is mostly outside. Great place to inspire your own research project. For example, I am writing a paper on the algal bloom which happened in Lake Hertel (pictured) this summer and it's effects on dissolved oxygen.

There are a lot of learning opportunities with regards to monteregian flora and fauna on the reserve. In the case of my program (Bioresource Engineering), this internship gave me insight on some monitoring and research practices, plant life, and the functioning of many maintenance devices.

If you are interested in applying for this internship, keep an eye out on CaPS in March and early April.



Photo credit: Daniil Katkov

Tree Planting

This is not a typical ‘every summer’ task, but there usually needs to be some planting done somewhere. In this case, a section of the reserve near the Mont Saint-Hilaire quarry needed to be reforested.

Supervisor: *Manager of Services and Security*
Martin Duval martin.duval@mcgill.ca

Intern: *Bioresource Engineering Student*
Daniil Katkov daniil.katkov@mcgill.ca

Feel free to email me if you have any questions



GE Hydro North America

Sourcing Internship Opportunity

The Company GE Renewables Energies Inc. is a division of the multinational General Electric. The division focuses on the supply and servicing of Wind, Hydro and Solar renewable energy systems. GE Hydro is one that operates globally in the Americas, Europe and Asia. GE Hydro deals primarily on the design and supply of key in hand projects for hydroelectric generating units as well as the refurbishment of older hydroelectric schemes. Their expertise extends over Kaplan, Pelton, Francis, Bulb and Pump Storage systems.



Schematic of a Kaplan Turbine designed by GE

The opportunity at GE Hydro North America was situated at the Brossard, Quebec base. The internship was within the sourcing branch of supply chain and spanned over 4 months. As an intern, I was given various roles and responsibilities. My main objective was to develop an estimation tool to better forecast expenditures for the fabrication and refurbishment of heavy industrial components. Aside from that project, I worked on tendering in parallel with tendering specialists, commodity managers and buyers, engineers, planners and project directors. As an intern, I equally had the opportunity to visit various suppliers and witness behind the scenes how the fabrication and refurbishment of hydromechanical components occurs.



Workshop visit and view of a Kaplan runner brought in for refurbishment at GE.



Typical day at the Brossard office working on tendering tasks.

My take away from the experience to intern at GE can be summed up as enlightening and enriching. The experience was enlightening considering that it depicted the level eagerness and the type of mindset typically sought after by multinationals like GE. I learnt that it is not always about what you know, but instead how willing you are to learn. My experience was then enriching in the sense that I was able to take away from many learning opportunities and refine soft and technical skills. In terms of my learning experience, I was able to deepen my knowledge about the technologies that support the hydroelectric industry and learn about the focus for hydro going forward. I also had the opportunity to widen my understanding of the procedures and standards that define present-day fabrication and refurbishment processes. As for the development of my technical skills, I was able to train my ability to interpret design drawings and improve my program language. Finally, I had the opportunity to work on various soft skills such as communication, organization and the art of presenting.

Contact Information

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Employer Contact Information

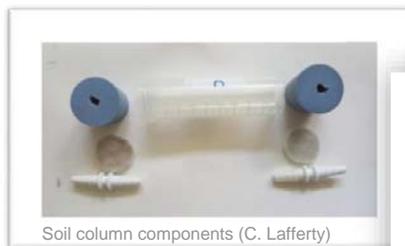
Applications must be submitted online.
Internship opportunities can be found at
→jobs.gecareers.com



Research internship in soil hydraulic conductivity in Isreal, at The Hebrew University, Faculty of Agriculture, Food and Environment, Department of Soil Sciences

Connie-Anne (Laura) Lafferty
 connie-anne.lafferty@mail.mcgill.ca
 Summer 2019

Supervisors: Dr. Jan Adamowski and Dr. Yair Mau (yair.mau@mail.huji.ac.il)



Soil column components (C. Lafferty)

This summer, I participated in a research project testing the hydraulic conductivity of a clay soil when salt solutions are applied. My report was titled: **Determining the impact of sodium and calcium on the hydraulic conductivity of a clay soil as the concentration of these cations in the soil solution are decreased, and, subsequently, increased, at a constant soil adsorption ratio.**



Entire experiment set up (C. Lafferty)

Over the summer, I had the opportunity to set up the entire experiment, do some initial tests, and then run the experiment on my own. During this, I learned about what to look forward to in a master's degree; the commitment and communication that are required, as well as the pace and how to set goals. This experience definitely helped me to realize that I could take on this next stage of academia!



Top of Mariotte bottle (C. Lafferty)



Figure 3: Waterlogged dispersive (sodic) soils. This is an issue that should be prevented, however current strategies are not sustainable or entirely effective. (Department of Primary Industries and Regional Development, 2019)

References: Department of Primary Industries and Regional Development. 2019. Managing waterlogged dispersive (sodic) soils. Government of Western Australia. Retrieved from <https://www.agric.wa.gov.au/dispersive-and-sodic-soils/managing-waterlogged-dispersive-sodic-soils>

McNeal, B.L., Coleman, N.T. (1966). Effect of Solution Composition on Soil Hydraulic Conductivity. Division S2-Soil Chemistry.



Figure 1: Experiment results for hydraulic conductivity of Brown Arava according to solution concentration, at a constant SAR of 100.

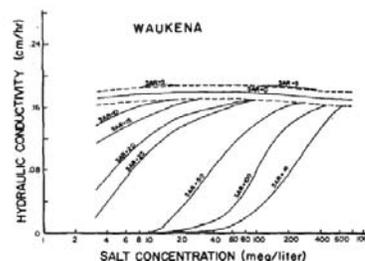


Figure 2: Hydraulic conductivity vs. salt concentration for Waukena clay loam (30% clay) (McNeal and Coleman, 1966)

WORKING AT MTLVET

Employer:
Nicolas Cachecho
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Sarah Krnjevic
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Vet tech Mathieu takes good care of our animals in boarding

Buddy and Sarah getting ready to take a blood sample!



Photo of Sarah and Buddy taken by Sarah Krnjevic



Photo of Mathieu and Princess taken by Sarah Krnjevic

These 3 kittens were brought into our clinic after a woman found them up in a tree! We removed their fleas and got them ready for adoption.



Photo of 3 kittens taken by Sarah Krnjevic

As a veterinarian assistant at MTLVET, I performed pre-consultations, during which I took a primary assessment of each patient and reported my findings to the vet. During a pre-consultation I'd note any recent changes in the animal's behaviour and their current lifestyle (diet, animal interactions, flea/tick prevention). I'd check if they were up to date in blood/urine tests as well as vaccines, and if not, what they are due for. Furthermore, I assist in surgeries in every way I can from holding the animals still to administer anesthesia, to giving them oxygen, to holding up a cat's leg for an hour to aid the vet in stitching together it's awful abscesses.



Yeast from a poor puppy's ear infection!



Photo of yeast from dog's ear viewed through microscope taken by Sarah Krnjevic

Standing over the glass ground at our new Parc clinic



Photo of Sarah Krnjevic taken by Sylvia Ramos

Dr. Lee performing dentistry on Bella



Photo of Dr. Lee and Bella taken by Sarah Krnjevic

Doctor's dentistry tools!



Photo of dentistry equipment taken by Sarah Krnjevic

I've been trained to perform different blood tests and urine tests using high tech machinery at the clinic, as well as take X-rays. I've also learned how to measure prescriptions and prepare syringes for various uses such as vaccines and medication. I successfully learned a lot about what it is like to work as a veterinarian on a day-to-day basis in a Montreal vet clinic. Although learning all of the terms of this new world in French was challenging, I believe I embraced it rather gracefully. After being offered a permanent position at the clinic, I would say having become a necessary part of the MTLVET team is my greatest success.

MITIGATION OF AGRICULTURAL DIFFUSE POLLUTION IN COLD CLIMATE WITH TREATMENT WETLANDS: HERBICIDE TOXICITY ON MACROPHYTES

I did a research internship at the IRBV (*Institut de recherche en biologie végétale*) where I worked on a project with constructed wetlands. The aim of the project was to treat agricultural runoff (containing pesticides) with native plant species.

I learned about phytotechnologies, scientific methodology, water treatment, plant health and safety measures while working with contaminants. From a more technical perspective I learned to use some instruments to measure photosynthesis and stomatal conductance, water parameters like pH, conductivity, and dissolved oxygen, as well as an instrument to take pictures of the roots.

Part of my internship was to conduct a smaller experiment to evaluate the toxicity of various herbicides in various concentrations on three native species. I then wrote a research paper about it as my final report.



Fourteen constructed wetlands on the experimental site located at the Montreal Botanical Garden. Picture taken by Khalil Abas.



Plants from the toxicity experiment right after they were transplanted into gravel pots. Picture taken by Olivia St-Pierre.



Same plant at the end of the summer during pesticide application. Picture taken by Sean-Anthony Paolo.

Constructed wetlands are designed by multidisciplinary teams. Engineers are usually involved in traditional water treatment, but they need to work along with biologists when it comes to phytoremediation. As a bioresource engineering student, I enjoyed working with people that had knowledge in plant biology. I learned a lot from them.

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végétale

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Intern: Olivia St-Pierre

Bioresource engineering student
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I would recommend this internship to anyone who is interested in research. I worked with a master student and I was very involved in every aspect of the project: technical work, planning, data analysis, paper writing, etc. It allowed me to have a good idea of what a master degree looks like.

I really enjoyed my summer. IRBV is a great work environment and I liked working with the team.

Middleton Island Seabird Field Station

With **Institute for Seabird Research and Conservation**

By Fred Tremblay

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Middleton Island

Middleton Island, in the Gulf of Alaska, is a seabird field station. It is led by Scott Hatch from the Institute for Seabird Research and Conservation. The field station was created in 1970s and consist of several Cold War-era military building adapted for research purposes.



Core Crew

Each year since 1970s, the seabird species present on the island are closely monitored by a group of dedicated interns from May to August. The seabird species are monitored for their reproductive success in order to obtain long-term productivity data.



From left to right: Daniel Nettl, Abraham Turner, Sierra Pete, Hannah Weipert, Catherine Lee-Zuck, Drew Sauvé and Fred Tremblay (myself)

Seabirds

The field station focusses on six main seabird species: the Black-legged Kittiwake (*Rissa tridactyla*), Pelagic Cormorant (*Phalacrocorax pelagicus*), Rhinoceros Auklet (*Cerorhinca monocerata*), Tufted Puffin (*Fratercula cirrhata*) and Common Murre (*Uria aalge*). This unique field station allow us to study in close proximity all of those species over the years and monitor for change in light of global warming.



Myself catching, measuring and banding a Black-legged Kittiwake. Bird banding is an important part of our work in order to identify individuals nesting on the tower.

Photo by Daniel N. and Jenna S.

Experience

As student in wildlife biology, this field station offers amazing opportunities to gain experience in the field but also to learn from other scientist. Working with many different species at once allows you to learn different handling and monitoring techniques. Middleton Island also attract researchers from all over the world which allow you to meet amazing people and make contact for the future.





Inviting an audience to participate "Growing Table" activity on a Shanghai Media Group public event
The staff from left to right: Peggy Liu, Meredith Bosco, Daylily Liao
(Photo credits to Jiashu Huang)

What is JUCCE? What is Food heroes?

JUCCE is a NGO driving the greening of China. This organization has been successfully led the green energy innovation in China in past 10 years and thrived Chinese sustainable development. Food Heroes curriculum for young kids reduces the impact of our food system and improve both personal and planetary health.

What were the successes?

- Networked with enthusiastic professionals from nutrition, public relation, psychology and environmental sustainability, with a similar passion and vision in food education.
- Learned about Chinese public health policies
- Successfully pitched three Chinese philanthropists
- Participated in a documentary shooting by Discovery Channel
- Collaborated an event with a Shanghai Media Group

What did I learn?

This experience deepened me insight into public food education during which I witnessed the significant impact of culture and social norm on the communication of the nutrition message. I would like to keep this topic as my options for my graduate study. On the other hand, during the research, I was impressed that the current food system brings many negative impacts to the climate change. Therefore, I will apply the concept of sustainability in my future practice to have people aware of the impact of individual diet and lifestyle to the environment.



food heroes

Contact

Intern: Daylily Liao
Major: Dietetics
Email: aixuan.liao@mail.mcgill.ca

Organization: JUCCE
Email: volunteer@jucce.org
Internship Opportunity:
www.foodheroes.org → *Get Involved* → *Intern*

What was my job this summer?

I worked on translation, cross-checked the concept appropriation in nutrition aspect and researched for Sinofication. I also participated in marketing research as well as event coordination and management. All my job was to help the curriculum localize to Chinese population and tailor the contents to Chinese current public health and environmental concerns.



Group Photo: Food Heroes 2019 summer team
(Photo credits to Jeanne Torp)

Internship at Laboratoire d'agroécologie de l'Université Laval

My internship

During the summer, I worked as a research assistant in a professor laboratory. I worked on research projects all related to improving practices in cash crop and forage production in order to be more sustainable.



Sorting alfalfa in the laboratory based on its growth stage after harvest
Credits: Héloïse Henry

The research projects of the laboratory

- Cover crops in flooded zones
- More digestible alfalfa
- Alfalfa in drought conditions
- Cover crops in corn fields
- Earthworms in organic cash crop fields
- Miscanthus and switchgrass for bio-industrial products



Counting of plants on a linear meter for density
Credits: Héloïse Henry

Employer

Dre Caroline Halde

Laboratoire d'agroécologie – Université Laval
caroline.halde@fsaa.ulaval.ca

My tasks

As a research assistant, I worked in the **field**:

- Field maintenance and agricultural tasks (weeding, harvesting, seedling, etc.)
- Data collection
- Meteorological data collection

And in the **laboratory**:

- Plant sorting
- Weighting samples
- Scientific articles translation



Mechanical weeding in an organic corn trial at the experimental farm
Credits: Héloïse Henry

What I learned

I learned a great deal on research in agronomy. I had the chance to work on various projects. I saw different experimental design, different ways of taking data and the different data for different projects.

I also had the chance to work with colleagues from very different backgrounds. We have different experience that we could share and it was beneficial for the team.

This internship allowed me to gain experience in research, which will be useful for graduate studies.

Monitoring of the Northern Gannet Reproductive Success

By: Catherine Destrempe

catherine.destrempe@mail.mcgill.ca

A description of my internship

This summer I worked for the laboratory of marine ornithology of Rimouski (LOMR). I worked on the Northern gannet colony of Bonaventure Island in Percé. My internship was separated in two parts: the sample collection with my supervisor and the monitoring. My supervisor came to the field 3 times over the summer. During his visit we installed GPS and took blood samples on specific birds for his PhD project. However, when he was not present my main task became the monitoring of the colony.



Photo credit: Catherine Destrempe
Description: A Northern gannet and its chick at their nest.



Photo credit: Marie-Ève Labonté-Dupras
Description: David Pelletier, Catherine Destrempe and Laurence Gagnon doing the nest monitoring of the gannet.

I was responsible for monitoring the reproductive success of 184 Northern gannet nests during a 3 month period. These nests have been followed for the last 10 years by the LOMR monitoring research program. Overall, a monitoring day was separated in 3 different tasks.

First, I would go into each of the four study sites on the island to monitor the selected nests. The monitoring consisted in taking note of the content of the nests (nothing, egg or chick) and the number of parents present. To see the nest content clearly, we used water guns since these birds have the reflex to stand up to shake the water off their feather. This reflex allows us to see what their nest was containing.



Photo credit: Laurence Gagnon
Description: Catherine Destrempe (on the left) and Fanny Couture (on the right) measuring the wingspan of a Northern gannet.

Our second daily task consisted in testing the personality of the birds having a GPS. To do this, we used a pole with a ball stick to it and record the reaction of the birds to this new object. The level of aggression toward the ball was further analyzed in relation to the foraging behaviour of the bird.



Photo credit: Laurence Gagnon
Description: Catherine Destrempe (on the left) performing a personality test on a gannet.

Finally, our last task consisted in capturing the birds surveyed. During these captures, we evaluated the overall condition of the bird by taking several measurements and by weighing them.

Employer

David Pelletier

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Magella Guillemette

• Magella.Guillemette@uqar.ca



Learning and skill gain during my internship

This internship allowed me to learn and gain many skills. First, I learned how to safely handle birds. I also understood how to read their behaviour. Furthermore, I learned how to band bird using colour and metallic rings on their feet. However, one of my greatest learning this summer is how to stay calm and react quickly in a stressful situation, considering that gannet handling can be challenging.

Acknowledgment

I would like to thank my colleague Fanny for her support throughout this field season. I would also like to thank all the team of the LOMR from whom I learn so much. Furthermore, I would like to thank the team of the Bonaventure Island SÉPAQ which supported and helped me every step of the way. Finally, I would like to give a special thanks to David Pelletier who trained and helped me during my internship.



Photo credit: Catherine Destrempe
Description: A Northern gannet chick at his nest.





A photo of the lovely Valve Automation Department and myself. From left to right: Jean-Christophe Maranda, Mathieu Lafleur, Steve Lacombe, Jasmine Roberts, David St-Laurent, Alexandre Genest, Fabrice Durocher
By: Anne-Sophie Lachapelle

About Laurentide Controls

Laurentide Controls is one of the twenty-one, strategically selected, Emerson Impact Partners in North America. They provide automation, measurement, process control, and reliability solutions to industries in the domain of Eastern Canada. Its success, which has spanned over 50 years, can be attributed to its unique approach to sales and ever-evolving management techniques.

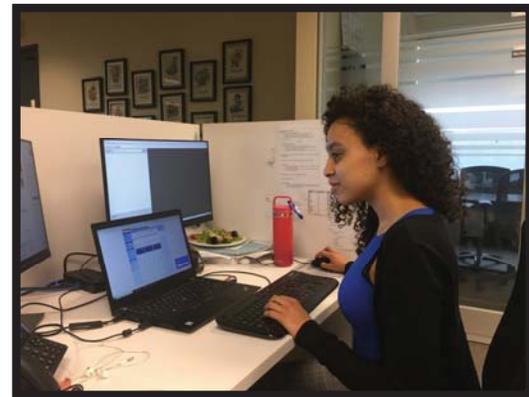
Laurentide offer the tools, services, subject matter experts, local expertise, and technologies within and beyond Emerson's portfolio to serve all valve, automation and reliability needs. In focusing their resources on being customer centric, they can ensure premium service for their clientele.

My Role as an Intern

Laurentide sales teams are mostly made up of engineers with technical knowledge on the products at hand. The specialist in each division assists with any technical inquiries related to the products, as well as providing industries with specialized solutions for their specific needs. These individuals are known in the company as sales engineers. This in another way in which Laurentide stands out among the rest.

During my time as an intern, I took on the duties of a sales engineer in the Valve Automation Department (VAD). This department focuses on isolation valves and the automation of valve assemblies. It takes a minimum of a year for sales engineers to reach the calibre to take on complex projects and their own territory of clients. Therefore, my internship was focused on being a support to those in my department. This entailed sending propositions to customers with requested quotes, establishing customer relations by following up with requests and processing the orders as they came through.

Throughout my time with the VAD team, I was trained to handle category one requests. For these types of requests, the client has knowledge on the products and knows exactly what they need. I was also fortunate enough to be given training on projects and more complex category two requests. Category two requests are for clients who know the products but are uncertain of what their process needs are. Larger requests, that are needed to set up a new system or plant, are known as projects. Projects require a great deal of time, attention to detail and innovation.



A photo of myself working on preparing a quote. On the forefront screen you can see measurements being displayed.
By: Aliaksandr Karaliuk

A Study of the Process of Municipal Waste Water Management

As a side project, I was given the chance to research the process behind municipal waste water plants. The innovation of sewage treatment plants is often underrated by most, so when the opportunity presented itself I was excited to take on the challenge. Through my time working on this project, I gained insight on the complex system that ensures safe drinking water for citizens of well-developed countries. As this was a project for my place of work, I also dug deeper and investigated the isolation valves used by these industries.

What I Took Away from this Internship

As a part of my internship I was fortunate enough to see a part of the engineering world that is not usually seen. My team deals with isolation valves which are found in industrial, municipal and many other designs to control the flow of a substance in a line. With the support of my amazing team I was able to gain a great deal of knowledge about this field.

The most evident knowledge I gained was technical education on the products. Most of my newfound knowledge was on the two major components to each isolation valve assembly; the valve and the actuation method. The valve is the part of the assembly that affects the flow of the substance whereas the actuation controls the movement of the valve. There are a wide range of valves that can be used depending on the application at hand.

The most important skills I gained, however, were soft skills. One was the ability to organize myself in a way that balanced out my perfectionist tendencies. Perfectionism is a characteristic I have struggled with since I was a child, and one that took up a great deal of my time unnecessarily. Another was the customer service skills I gained on a professional level in a corporate environment.

The knowledge and skills I have gained from this internship are invaluable. I am so proud to have been a part of such an amazing community.



A valve assembly in three aspects. Top left photo: the parts on the bench ready to be assembled. Right photo: a front view butterfly valve assembly. Left bottom photo: a side view butterfly valve assembly
By: Jasmine Roberts



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Yueran Zhao (yueran.zhao@mail.mcgill.ca) / FAES300 Internship 2/ Life Sciences Major U3

About the Employer

Dr. Brian Driscoll
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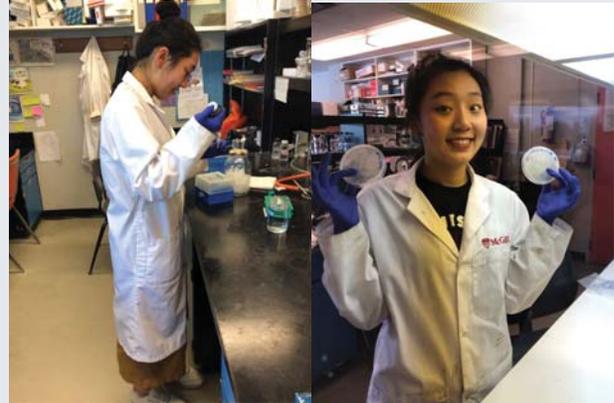


Figure 1 Me pipetting LB liquid media in to a microcentrifuge tube (Left); Figure 2 Me checking transformation plates (Right) Photo Credit: Fiona Chan Pak Choon

My responsibilities

- Creating a gene knockout mutant of *Sinorhizobium meliloti* (Independent Project)
- Assisting other individuals
- Daily Laboratory Maintenance



Figure 3 Dilution of DNA marker 1Kb ladder (Left) Figure 4 Fun Laboratory decoration (Right) Photo credit: Yueran Zhao

Things I learnt

- Practice with molecular genetic techniques
- Troubleshooting failed experiments
- General Lab tasks (pipette tips filling, autoclaving...)

Challenges

- Bacterial and Fungal contamination
- Ligation with a lot of self-ligating vectors
- Failed Polymerase Chain reaction



Useful tips

- ◆ Do not be afraid to ask questions
- ◆ The process of the internship is more important than the result
- ◆ Don't be frustrated if an experiment doesn't work the first time.

Curious about
Research Life?
Try it as your
internship!



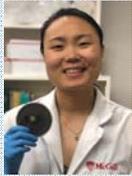
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Academic Services
Macdonald Campus

Summer 2019 Internship in the Faucher Lab

Inhibition and Stimulation of *Legionella pneumophila* Growth by Bacteria Isolated from Model Cooling Tower



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Department of Natural Resource
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Figure 1. a) *Legionella pneumophila* (Lp) b) Stimulation of Lp c) Inhibition of Lp

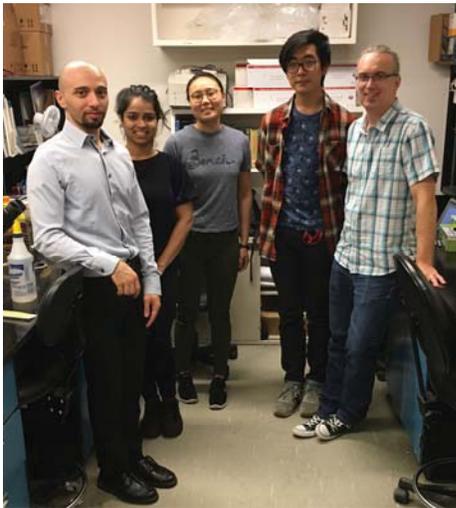
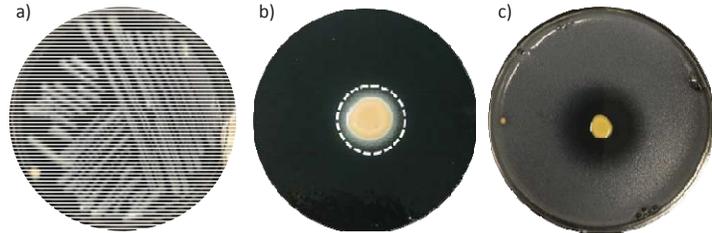


Figure 2. The Faucher Lab; Joseph, Deeksha, Fiona, Jeff, Prof. Faucher and Kiran who is missing in the photo.

My research project

- Understanding the interaction between *Lp* and other bacteria within biofilms can help find an alternative method to control *Legionella pneumophila* (*Lp*) numbers

Methodology:

- Sampled bacterial isolates from a model cooling tower
- Identified the isolates via 16S rRNA sequencing
- Investigated their interaction with *Lp*— whether they inhibit, stimulate or have no effect on *Lp* growth
- Tested their ability to form biofilm

My experience

- Learnt many new techniques and improved my laboratory skills
- Carrying out my own research project allowed me to be independent, manage my time better and learn how to troubleshoot experiments
- Received valuable advice from graduate students
- Gained knowledge in molecular biology and microbiology

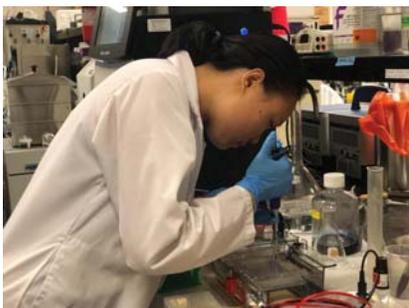


Figure 5. Loading a gel with DNA samples

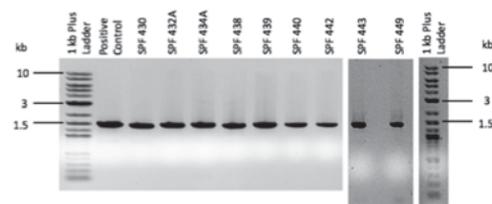


Figure 3. Gel electrophoresis of purified PCR products

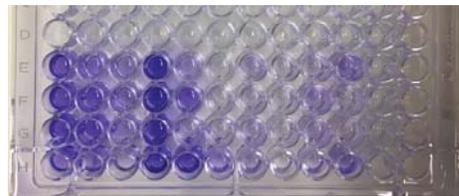


Figure 4. Biofilm formation; crystal violet assay

Acknowledgements

Thank you to the Faucher Lab Team for their wholehearted support and guidance. This project was funded by the Rudi Dallenbach USRA, FRQNT and NSERC

GHG EMISSIONS & EMISSIONS INTENSITY OF MILK PRODUCTION

RESEARCH ASSISTANT

My role as an intern was to assist with two research papers that investigated the carbon footprint of the Québec dairy sector. I found data to describe cattle populations, herd characteristics, manure management practices (MPPs), and the dairy crop complex (DCC). Calculations were done on a provincial level and on the farm level thanks to close collaboration with the Mac Campus Dairy Complex.

My research revolved around searching databases, reading academic papers and recording data into spreadsheets. Was this ever a treasure hunt! Many hours were spent searching for accurate, accessible and credible inputs. I also had the pleasure to assist in writing the first drafts of the research papers which plan to be published in the coming year.

I would highly recommend this experience to individuals who are organized, self-motivated, and willing to collaborate with a group.

Supervisor: Dr. Sergio Burgos,
sergio.burgos@mcgill.ca

If you are interested in learning more about my experience,
please contact: Nicole Giles, nicole.giles@mail.mcgill.ca

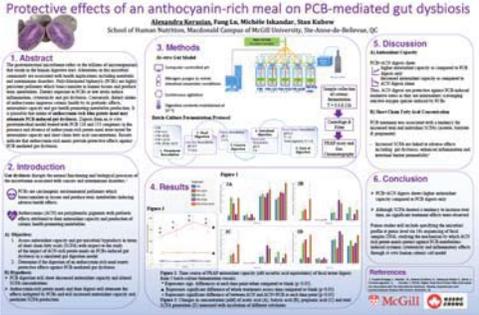


McGill
UNIVERSITY

Background images were photographed by Nicole Giles

Nutrition Research Internship

Alexandra Kerasias alexandra.kerasias@mail.mcgill.ca

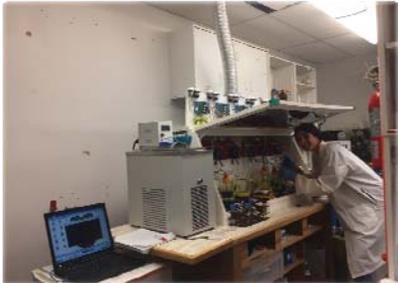


Job Description

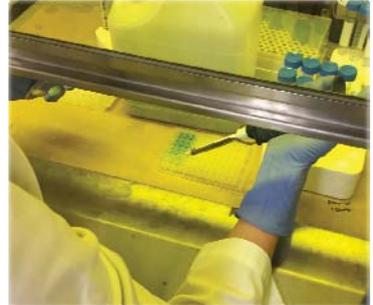
This summer I worked as an intern alongside a PHD student in Dr. Kubow's nutrition research lab at McGill. Our research focused on the impact of dietary components on the gut microbiome: Polychlorinated biphenyl's (PCBs) are environmental pollutants shown to induce inflammation, cytotoxicity and gut dysbiosis. Conversely, dietary intake of anthocyanins improves overall and colonic health due to their prebiotic affects and antioxidants capacity. We tested if the intake of an anthocyanin-rich meal attenuated PCB-induced gut dysbiosis. This project was entitled **"The Protective Effects of Anthocyanin-Rich Meal on PCB-Mediated Gut Dysbiosis."** This internship position was funded by the Natural Sciences and Engineering Research Council of Canada (NSERC).

The poster summarizing my findings which I presented at the URSA poster event
Photo credit: Alexandra Kerasias

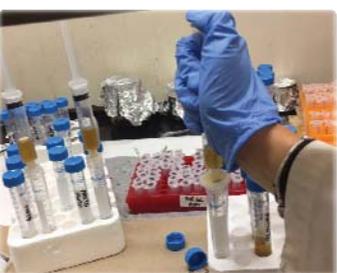
- ### My job entailed
- assisting to operate the computer-controlled gastrointestinal model
 - collection and filter-sterilization of samples collected
 - independently conduct assays on the collected samples
 - conducting statistical analysis to generate a scientific report
 - working as a team to devise tasks , create experimental designs and timelines, and to share ideas



Working on the *in vitro* gut model run: adding enzymes & adjusting pH
Pictured: Alexandra Kerasias Photo credit: Tarini Gupta



Conducting a FRAP assay : pipetting into a 96 well plate
Pictured: Alexandra Kerasias Photo credit: Ines Fernandez



Filter-sterilization of gut model samples
Photo credit: Alexandra Kerasias



Anthocyanin-rich potato
Photo credit: Alexandra Kerasias

What I've Learnt

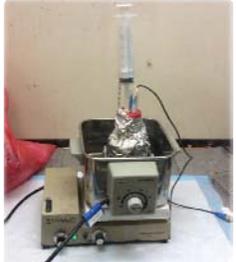
Throughout this internship, I learnt:

- to operate the *in vitro* gut model: adjusting pH, fecal stabilization and inoculation, taking samples, adding enzymes, cleaning procedure
- to measure antioxidant activity through FRAP assay
- to perform gas chromatography to quantify short chain fatty acids
- to conduct statistical analysis of the findings
- many nutritional concepts focusing on the gut microbiome, its compositions and health effects
- To manage multiple tasks at once
- To write a scientific paper and create a poster summarizing the findings

Challenges & Successes

There were many challenges this summer, including personal struggles with time management and independent research, as well as technical ones like machine malfunction and delayed material shipment.

Throughout this experience, I was able to independently operate the *in vitro* gut model and conduct the FRAP assay. Also, I improved my organization, presentation and basic lab skills. This experience has allowed me to gain more confidence in myself and in my academic work.



Overnight fecal slurry stabilization
Photo credit: Alexandra Kerasias



Computer-controlled gastrointestinal model
Photo credit: Alexandra Kerasias

Employer

Dr. Stan Kubow
stan.kubow@mcgill.ca
School of Human Nutrition
Macdonald-Stewart
Bldg MS2-037
McGill University



Performing as chromatography to quantify short chain fatty acids in samples
Photo credit: Alexandra Kerasias

Experience

This internship opened my eyes to the endless possibilities nutritional research has to offer to the developing scientific world. I enjoyed my research on the gut microbiome through my work with the dynamic *in vitro* gut model. Working in the lab was an exciting, yet challenging experience as it required me to really apply my knowledge in the real-life context of an unpredictable lab environment. This experience was intellectually and personally fulfilling and sparked my interest in a career in nutritional research.

Field Assistant Working On Seabirds Off The Coast Of Peru

Research Assistant of McGill PhD student **Francis Van Oordt**

By **Aaron Brisebois**, my email: aaron.brisebois-mcguire@mail.mcgill.ca , Francis' email: francis.vanoordt@lahez@mail.mcgill.ca



My Internship

During my time in Peru I worked as a field assistant helping **Francis Van Oordt** with his PhD studies on seabirds. Traveling in and out of field sites throughout the internship and thus moving back and forth between remote islands and Lima, my job as an assistant encompassed many tasks.

Tasks

In The Field

- Mapping out targeted nest sites within the colonies
- Capturing and banding birds
- Recording data (i.e. body lengths, weight, force of bite)
- Taking blood samples
- Placing cameras.

In Lima

- Organizing data recorded on the previous trip
- Preparing the required equipment for the next venture
- Cleaning
- Cooking
- Organising and packing.

The Research

Francis Van Oordt is conducting research on the foraging ecology and energetics of Peruvian resident seabirds. Specifically, he is studying how the changing ecosystem of the Humboldt current along the Peruvian coast could be affecting the relationship between their behavior and diet.

Species of interest:

Guanay Cormorant, Red-Legged Cormorant, Peruvian Booby, Humboldt Penguin, Peruvian Diving Petrel, Inca Tern, Peruvian Pelican, Markham's Storm Petrel



From left to right: **Humboldt Penguin**, **Inca Terns** in a colony on La Vieja Island, **Peruvian Booby** (foreground) with a Booby colony (background). *All photos taken by myself*



To the Left: Myself extracting a **Markham's Storm Petrel** from a burrow situated in a **Peruvian Diving Petrel** colony on La Vieja island.

Photo taken by Francis Van Oordt

A Great Opportunity

I have now gained relevant experience working in remote field sites in a foreign country and contributing to research on some of my favourite species which will surely help lead to many more career opportunities as a wildlife biologist.

What I have learned:

- How to properly conduct field research
- How to live and work as a team or group setting in the field
- The skills required for the unpredictability of field research
- How to properly capture, handle, and record data of both small and large seabirds
- Significant knowledge on the wildlife and ecosystem of the Humboldt current.

Employer Information

Ecological Engineering Research Group (McGill University)
21111 Lakeshore Road
Ste-Anne-de-Bellevue, QC,
Canada, H9X 3V9
Tel.: 514-398-7773



Objectives

The research group uses physical experiments and computer models to study ecosystems so that they can engineer better systems^[1].

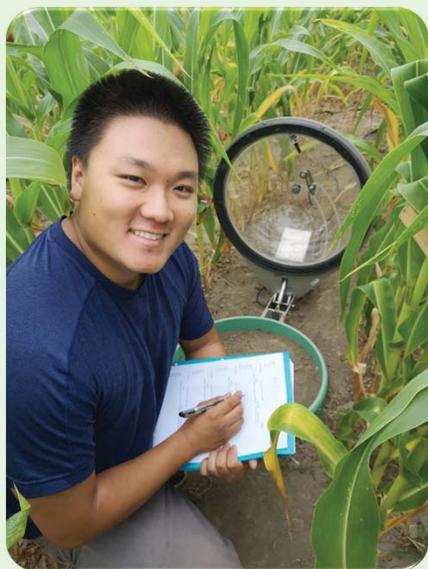


Figure 1: Taking notes on the condition of the automated gas chamber for future reference on maintenance issues Credits: Sreedurga Cherukumalli

Job Description

As an undergraduate research assistant with the Ecological Engineering Research Group, I dedicated my summer to their three-year large-scale biosolids application project at the Emile A. Lods Agronomy Research Centre. The latter seeks to define the effects of biosolids on agricultural lands, namely nutrient use efficiency and greenhouse gas emissions. The project was funded by Agriculture and Agri-Food Canada through the Agricultural Greenhouse Gas Program 2 (Project 033). I helped with field work and maintenance of machinery. I also worked on my individual project which was funded by the Natural Sciences and Engineering Research Council through the Undergraduate Student Research Awards program. I researched on optimizing the sampling period of the automated gas chambers that measured CO₂ and N₂O emissions from the corn fields at the research centre.



Figure 2: A panoramic picture of the corn field at the Emile A. Lods Agronomy Research Centre Credits: Youngsoo Lee

Learning Outcomes

This internship has allowed me to further develop notable skills that will help me in my future studies/career.

- Completing field work
- Working in a team in office and on the field
- Doing maintenance and troubleshooting on machinery
- Report Writing
- Critiquing literature review concisely and coherently
- Preparing a poster presentation
- Dealing with unexpected complications professionally

Independent Project

As mentioned above, I worked on my own individual project which is titled "Sampling Time Optimization for Automated Greenhouse Gas Chambers". A statistical approach was used to optimize the chamber closure time so as to obtain the maximum number of usable data points for CO₂ and N₂O. I compared the number of usable data points obtained during theoretical 5, 10, 15, 20, 25 and 30 minutes of sampling. The results have shown that 5 minutes is favorable for CO₂ and 10 minutes is favorable for N₂O. A sample poster of this project is shown to the right.

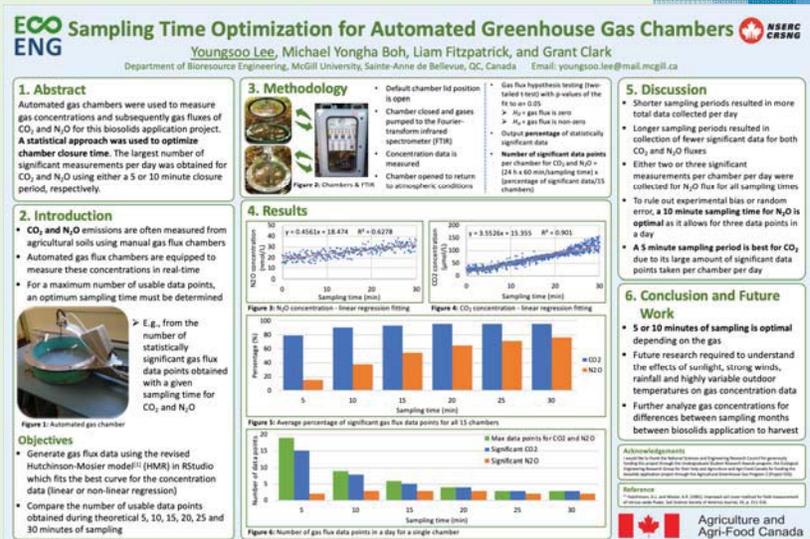


Figure 3: A sample poster of my independent project funded by the Natural Sciences and Engineering Research Council Credits: Youngsoo Lee

Research internship at McGill's Institute of Parasitology

Daana Tavanaei
mandana.tavanaei@mail.mcgill.ca

Supervisor: Dr. Igor Cestari
igor.cestari@mcgill.ca
2111 Lakeshore Rd,
Ste-Anne-de-Bellevue, QC H9X3V9

My internship:

This summer I had the opportunity to work at Dr. Igor Cestari's molecular biology lab at the institute of parasitology at McGill university. I studied the gene for Sirtuin 2 protein (Sir2) in *Trypanosoma brucei*. In this project I cloned the gene for Sir2 successfully into *E. coli* bacteria, induced it to express Sir2 and did a large-scale extraction of this protein for future studies. For the remainder of my time in the lab, I did some binding assays to see whether or not PIP2 would bind to this protein (this theory was based on the findings of a previous paper published by my supervisor).

What I learned:

During the 10 weeks that I worked in this lab, I gained some very useful and fundamental laboratory techniques, how to interpret the results I have and decide what needs to be done next based on the data I have gained. One of my greatest challenges during this internship was to get my transformations to work and I spent a lot of time trying to figure out why it was not working. But after about a month of trying to fix my transformations, it finally worked and the following procedures went really well. I learned how to analyze research papers and how to think critically about the results they have and how it can apply to my project. I learned to use softwares that can help with data analysis as well as online resources that can help me find information easier. I also had the chance to talk to my colleagues about their academic background and future goals which helped me choose the right path to reaching my own personal academic goals.

Finally, the most important lesson I got from this internship was that if you don't make any mistakes, you will never learn. In research, you have to be patient and quite frankly, stubborn, to be able to succeed and it may seem exhausting when you are not getting any results but when you do get a result that can push your project forward, that is the best feeling in the world!



I had the chance to participate at the Annual Montreal Parasitology Symposium (AMPS) hosted by McGill university. Photo credits to: Ivan Lam

Here I am setting up a ligation reaction. Photo credits to: Mei Nathan

Responsibilities:

- ✓ Make buffers, solutions and antibiotic stocks for the lab
- ✓ Set up PCR, digestion and ligation reactions
- ✓ Do transformations
- ✓ Make SDS PAGE or electrophoresis gels and run the gels.
- ✓ Coomassie staining and doing western blots
- ✓ Maintain the *Trypanosoma* cell line I was given
- ✓ Do mini and midi preps
- ✓ Freeze bacteria or *Trypanosoma* cells for stock



Targeting the RNA Pol I in *Trypanosoma brucei*

–lab assistant at McGill Institute of Parasitology: FAES 300 internship –

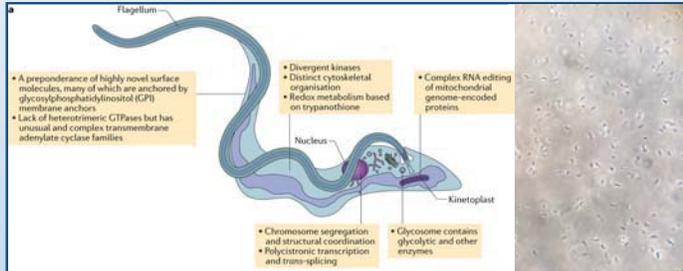
Mei Nathan
mei.nathan@mail.mcgill.ca
 U3 Life Science
 Animal Health & Disease

Supervisor: Dr. Reza Salavati
reza.salavati@mcgill.ca
 Associate Professor
 McGill Institute of Parasitology

Job Description-

Trypanosoma brucei, a kinetoplastid parasite, infects humans and animals in Sub-Saharan Africa and causes human African trypanosomiasis (HAT), a fatal disease if untreated. The current state of HAT control and treatment is underwhelming as parasite resistance is rising against the limited options, which already are marked by toxicity and difficult treatment regimes. In Dr. Salavati's laboratory at the McGill Institute of Parasitology, projects explore the different mechanisms *T. brucei* uses to successfully infect humans and potential inhibition of these pathways.

During my internship, I developed luminescent dual reporter cell lines for the larger goal of identifying compounds that target *T. brucei*'s RNA polymerase I. For the parasites, the enzyme has dual function: synthesizing 45S rRNAs in the nucleolus and transcribing mDNA encoding major surface glycoproteins. I also co-presented a poster on the progenitor project to my current research at the 2019 Annual Montreal Parasitology Symposium (AMPS).



Left: Diagram of the parasite highlighting key organelles (Field, M. C. et al. 2017. Nature Reviews) Right: Photo of confluent *T. brucei* bloodstream-forms in HMI-9 media under a microscope.

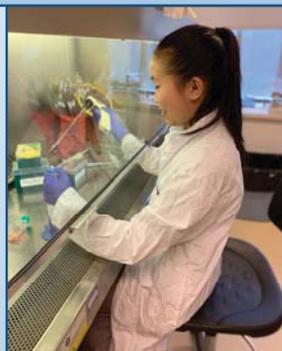
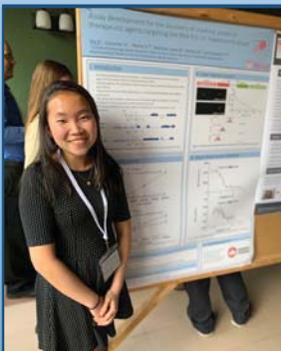
What I Learned-

I learned how to complete many protocols that are essential to wet laboratory research.

- polymerase chain reaction (PCR)
- restriction digestion
- ligation
- gel extraction and purification
- transformation
- DNA precipitation
- transfection
- working in a biosafety cabinet
- counting cells

Challenges: I had underestimated how novice I was when it came to working in a laboratory setting. While having steady pipetting skills and knowing how to run certain reactions is important, it is imperative to understand why each step is done and what the results indicate. Another challenge is figuring out what to change when results are not optimal and you have to try again. For two weeks, for example, I kept changing primers and annealing temperatures to optimize DNA insolation before transformation the sequence into a plasmid.

Successes: The biggest highlight of my experience was getting said DNA ready for transformation. After having a lab meeting, a PhD student suggested I serial dilute the insert before amplification via PCR. This yielded clear bands that I could then gel extract. It also emphasizes the importance of collaboration in science.

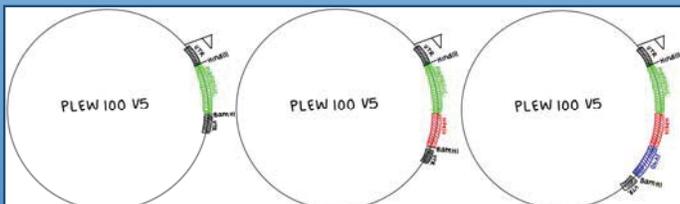


Top Left: I am at the AMPS 2019 co-presenting a poster on research the lab previously conducted.

Top Right: I am using a biosafety cabinet to pass *T. brucei* bloodstream forms and add fresh media. It is important that they do not become over confluent and die.

Bottom Left: I am using an H4 Microplate Reader to measure the fluorescence that cells emit after being induced with various concentrations of BMH-21, an RNA polymerase I inhibitor, for 24 hours.

Photos Taken By: Ivan Lam



Simplification of the three constructs I created during the internship. After ligation, the DNA is transformed into *E. coli* and grown on a plate to amplify. The DNA is then purified, linearized, and transfected into a *T. brucei* cell line. Transformation and transfection were performed in order to get NanoLuc luciferase into the cell line, to visualize RNA polymerase I activity.

Take Away-

This internship gave me a better understanding of what it would be like to work in academia-based laboratory. I will continue volunteering at the lab as long as I can balance my classes. Having an individual project is really forcing me to develop skills to initiate and be proactive, which are invaluable to all fields. Working in there is also allowing me to develop better pipetting and laboratory techniques. I also find the project really fascinating since the parasite afflicts both animals and humans. Finding a treatment against it would help end the poverty cycle burdening many Sub-Saharan communities; livestock health would increase and valuable members of the work force would no longer die from HAT.

Meet my Project! Modulation of neutrophil biology by helminth-derived metabolites

This summer, I worked in a laboratory studying the potential benefits that helminth infections can provide to their host. More specifically: **how helminth-derived metabolites can modulate neutrophilic inflammation.**

What I did mostly:

- ✓ **isolated** neutrophils from whole blood (**Figure 1**)
- ✓ assessed isolate **purity** by staining (**Figure 2**)
- ✓ **treated** neutrophils with helminth metabolites
- ✓ **stimulated** neutrophils with Lipopolysaccharides
- ✓ **quantified** protein release with ELISA (Enzyme-Linked Immunosorbent Assay) (**Figure 4, r**).

This project opened my eyes not only to the **complexity of immunology**, but also to the vast opportunities that this complexity offers to **improve people's lives ...**



Figure 3. The Institute is a great place to meet people from all over the world and to establish solid and positive relationships with colleagues and professors. From left to right: (top) Toshio Arai, Fernando Lopes, Elizabeth Siciliani, Jysiane Cardot, Elena Lonina, Albená-Nunes Silva, (bottom) Ana G. Madrigal, Mariana Gomes de Moraes, Francisco de Assis Dias Martins Jr. Credit: Mai Yamamoto.



Figure 1. Neutrophils were isolated from whole blood using Lymphlyte® Poly. In this image, neutrophils were isolated from the band located between the 5 and 6 cm mark. Credits: Albená-Nunes Silva.

While working at the institute, I got the opportunities to learn:

- ✓ about **diseases** that affect people worldwide and their **immunopathology**
- ✓ to **apply** knowledge into a **multidisciplinary** and **practical** project
- ✓ to generate **hypotheses** from **literature** and experimental **observations**
- ✓ laboratory **techniques** that I could not learn in class
- ✓ to **discuss** science and **ask** questions
- ✓ the importance of **innovation** and **curious observation!**

First-hand experience in a laboratory showed **me how a life doing scientific research could be like.** I could appreciate the amount of **stress** that comes along with **research**, and I also learned that active **discussion** is a must for **growth.** I also got a grasp of what a lab needs to work, how to **organize** a productive **schedule**, and how to **plan** experiments accordingly.

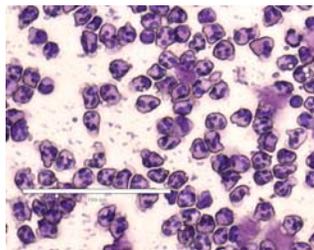


Figure 2. The purity of our neutrophil isolates was assessed via Panoptic staining – it does not only allow us to analyse our isolates, but it was also a break for aesthetic appreciation! Credits: Elena Lonina

... while allowing me to **learn more about myself** and to **reflect on life.**

Everyone fights their own fight

This internship allowed me to **face uncertainties** that can only be **overcome** with experience. I:

- ✓ became more **confident** in my **ability** to learn and apply new knowledge
- ✓ improved **teamwork** and **social** skills
- ✓ **faced** a couple of **fears** and gained confidence when **dealing with people**
- ✓ become more **honest** and **open** about my thoughts, feelings and opinions



Figure 4. Laboratory work allowed to apply knowledge learned in class in a practical environment and to learn new techniques. In picture: me performing (left) cell line treatment and (right) ELISA. Credits: Albená-Nunes Silva.

Here are other cool things that enriched me:

- ✓ presented my work in a scientific **symposium**
- ✓ participated in **periodic meetings** with a collaborative lab to discuss my progress and observations
- ✓ performed experiments in **different** yet related **areas**
- ✓ **met and learned** from people working in the field
- ✓ established **solid relationships** with professors and colleagues

Sometimes we care too much about the results, and we forget that the process and the experience is just as important~

For things like academic research: you understand how big and important the deal is once you see and experience it yourself.

Biochar Production: My summer as an assistant at McGill University

Employer:

-Professor Marie-Josée Dumont
marie-josée.dumont@mcgill.ca

My Contact Information:

-Paul Rougeau
Paul.Rougeau@mail.mcgill.ca



Picture by: Jiby Kurian

Picture of: Paul Rougeau & Corn Stover

Picture Caption: I obviously dressed wrong for this day. I was tasked with filling several bags with corn stover. This involved going out to some of the fields surrounding campus and finding a plot of recently harvested corn.

My Job:

I was tasked to assist in the preliminary operations of the biochar project in collaboration with Michelin.



Picture by: Paul Rougeau

Picture of: Pyrolyzer Station

Picture Caption: This was the pyrolyzer and nitrogen gas tanks where biochar was made.

What I Learned:

- Biochar Components
- Pyrolysis Process
(Optimization)
- Welding
- Wiring the Temperature Controller
- TGA Machine (For Testing)
- FTAR Machine (For Testing)



Picture by: Paul Rougeau

Picture of: Buzz Saw and Corn Stover

Picture Caption: Once all the corn stover had been collected and brought back to the lab in the machine shop it was time to prepare the samples. Here the corn stover was being cut into smaller pieces so it could fit inside the pyrolyzer.



Picture by: Paul Rougeau

Picture of: Internal of Pyrolyzer

Picture Caption: Here a test run was done with the pyrolyzer and the "red hot" surroundings inside the pyrolyzer are pictured.

Concrete Research and Green Wall Construction Project

Intern: Intisar Syed



Email: Intisar.SyedMahmood@mail.mcgill.ca

Employer: Biomass Production Lab,
McGill University

Supervisor: Dr. Mark Lefsrud

Contact: Mark.Lefsrud@mcgill.ca

Intentions

I wanted to work in an engineering lab environment due to my curiosity. As I progress through my degree in bioresource engineering, I wanted to get a glimpse into how it maybe to pursue a higher degree in Bioresource Engineering. I hoped for the experience to clarify my interests and possible career paths.

Job

My job entailed the construction of a desk top sized and a 1 sqm green wall. The desktop piece is designed in CAD and fully 3D printed in PLA plastic. The 1 sqm piece is a proof of concept showing the feasibility of construction of a green wall made completely of concrete. This piece is a composite of a Portland cement concrete backbone and a porous concrete growth medium. Furthermore, I conducted research into preformed foam porous matrices as aggregate alternative for concretes. This research essentially explores if a preformed structure can give shape to concrete instead of a mold. If a mold can be thought of as an exoskeleton, a preformed matrix, such as sponge, would be an endoskeleton. I conducted further research into the behavior of concrete with increased amount of optic fiber saturation, observing how the material property evolves.

Lessons

I tried to be proactive and contribute to many projects of the lab but I lacked time. Naturally, given the short span of a summer, I had to master time management to keep up with the demands. Though in the end, some projects still managed to fall behind, it was still an amazing experience. Communication with collaborators was also key to remain diligent and to not trouble my peers. This balancing act is a necessary skill in my further studies of course. However, it is also important in my career especially if I try to be proactive to be involved in as many projects as possible. Furthermore, this experience taught me tremendously about the workings of a university lab. It was certainly great fun while learning a lot. Though currently it is hard to assess if these experiences specific to a lab would contribute to my career, I consider them to be part of lifelong learning.

Acknowledgement

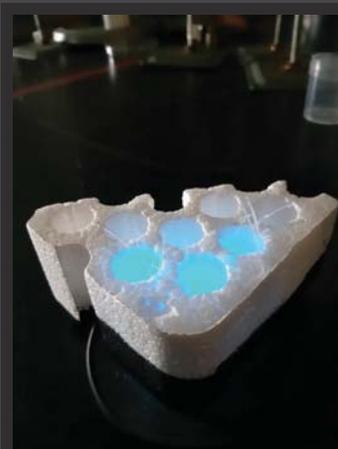
I would like to especially thank Sadie Moland for her tremendous help throughout the semester. As a new member of the lab, her help was invaluable to my work. I am also grateful to Dr. Lefsrud and all the members in the Biomass Production Lab for all their assistance.



1 sqm green wall construction at the engineering shop, Macdonald campus



Desktop green wall structure without concrete inserts



Test of light transmission through an opaque phosphorescent medium with discontinuous optic fibers



FAES 300 Summer Internship 2019 Undergraduate Researcher in Ronholm Lab

By Janina Ruffini

Department of Food Science and Agricultural Chemistry, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

Job Description

This summer I worked as an undergraduate researcher in Dr. Jennifer Ronholm's lab, located at the Macdonald Campus of McGill University. I extracted DNA from 180 isolates of *E. coli* and *S. aureus* originating from cases of bovine mastitis.

I spent the early days of the internship optimizing the protocol I would need for gDNA extraction. It took 34 trials to get the protocol working. Every isolate had to be reactivated from a lyophilized stock first, then a cryopreserved culture collection was made, its viability was tested, and finally the DNA could be extracted from a broth culture. The DNA concentration and absorbance was measured and recorded using a NanoDrop. The DNA was further purified using the Qiagen DNeasy Powerclean Pro Cleanup Kit. This was done to remove as many contaminants as possible prior to whole genome sequencing. The purified gDNA was then frozen at -80°C and is now ready for whole genome sequencing.

Employer

Dr. Jennifer Ronholm, Assistant Professor
Department of Food Science and Agricultural Chemistry, Co-appointed with Animal Science, McGill University, Macdonald-Stewart Building MS1-030

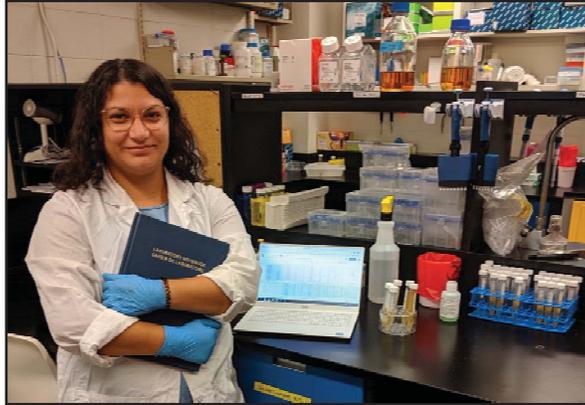


Photo credit: Kenneth Drummond

My Experience

As a summer researcher my role in the lab was to produce results quickly and contribute to everyday tasks such as making media and disinfection of countertops.

In the first weeks of the internship I created a poster for the Canadian Bovine Mastitis Network Conference here in Montreal, the first conference I've ever attended. I learned a great deal about the causes, management, and treatments of bovine mastitis and the molecular work behind it.

I gained valuable experience and knowledge by closely following the work of other students in the lab and asking questions. There is a great sense of team spirit in Ronholm Lab, where everyone helps each other and shares their knowledge by informally presenting their work.

I would highly recommend working in this lab to anyone who is serious about learning the ins and outs of research and academia.

Project Description

Hypothesis: Specific isolates of *S. aureus* and *E. coli* involved in bovine mastitis have unique virulence genes compared to human isolates or fecal isolates from cattle. **Objectives:** 1. Find universal host-specific virulence factor of *S. aureus* and *E. coli* from bovine mastitis cases at the genomic level. 2. Understand the virulence factors of the pathogens responsible for outcompeting the commensal community.

Methods



Reception & identification of lyophilized isolates from mastitis cases



Genomic DNA extraction



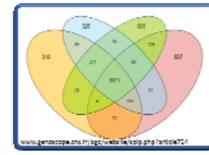
Whole genome sequencing Illumina MiSeq



DNA assembly SPAdes



Gene Annotation RAST



Pathogenesis DustApe



Image 1. (Top Left) This is the setup I required for genomic DNA extraction. These materials are placed inside a Biosafety Cabinet and include pure broth cultures of pathogenic *E. coli* or *S. aureus*, ethanol and lysis reagents. Photo by Janina Ruffini



Image 2. (Right) A cell pellet has formed after centrifugation of the liquid culture. Photo by Janina Ruffini



Image 4. (Right) This is my setup with the Qiagen cleanup kit. We can see a number of microcentrifuge tubes and cleaning buffers. Photo by Janina Ruffini

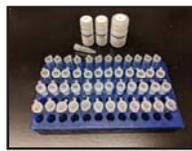
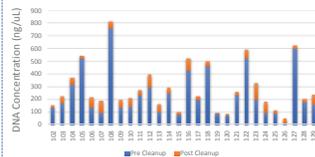


Image 3. (Bottom Left) If you look closely you can see white DNA pellets at the bottom of the microcentrifuge tubes. Obtaining these pellets was the ultimate goal of my procedure. They were washed with ethanol and solubilized in water before DNA concentration and purity was measured. Photo by Janina Ruffini

Results

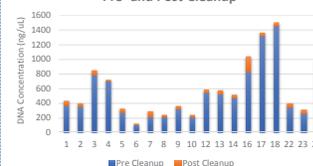
DNA Concentration for *E. coli* Pre- and Post-Cleanup for Isolates 102-130



Average reported absorbance ratio 260/280 for 130 *E. coli* isolates Pre- and Post-Cleanup



DNA Concentration for *S. aureus* Pre- and Post-Cleanup



Average reported absorbance ratio 260/280 for 19 *S. aureus* isolates Pre- and Post-Cleanup



Janina Ruffini | Janina.Ruffini@mail.mcgill.ca
Dr. Jennifer Ronholm | Jennifer.ronholm@mcgill.ca
<https://jenniferronholm.wixsite.com/laboratory>



Réseau canadien de recherche sur la mammitte bovine et la qualité du lait
Canadian Bovine Mastitis and Milk Quality Research Network



CONSERVATION IN MADAGASCAR

MY ROLE

OVER THE COURSE OF MY INTERNSHIP WITH THE MADAGASCAR BIODIVERSITY PARTNERSHIP, I WORKED ALONGSIDE THE MALAGASY COMMUNITY ON LEMUR CONSERVATION AND REFORESTATION IN THE COMMUNE OF KIANJAVATO.

REFORESTATION



Picture (a) taken by Emilia Dunnet - Jessica Bao picking seeds. Pictures (b, c & d) taken by Jessica Bao.

a. Collecting 'Bonary mena' seeds on the ground in the surrounding forests; **b.** Making compost for the seeds - dried grass, fresh green plants and water; **c.** The deforested hills of the Kianjavato region; **d.** One of the planting sites in the deforested region of Kianjavato where the bamboo sticks mark a planted seedling.



Picture (e) taken by Laura-Bethia Campbell of Jessica Bao planting trees. Picture (f) taken by Jessica Bao.

e. Planting a tree! The bags on top of the bamboo sticks mark a planted seedling.
f. Jessica Bao holding a newly planted 'Bonary mena' seedling.

I LEARNED HOW TO BUDGET, HOW TO MANAGE TREE NURSERIES, AND HOW TO PLANT TREES!

LEMUR CONSERVATION

I RECORDED BEHAVIOURAL DATA ON THE GREATER BAMBOO LEMUR, *PROLEMUR SIMUS*, IN THE SURROUNDING FOREST FRAGMENTS OF KIANJAVATO.



Picture (i) taken by Kate Ratliff - Jessica Bao observing *Prolemur simus*. Picture (j) taken by Jessica Bao.

I LEARNED HOW TO USE TELEMETRY EQUIPMENT AND HOW TO RECORD BEHAVIOURAL DATA FOR VARIOUS SPECIES OF LEMUR. THIS WORK IS ESSENTIAL EXPERIENCE FOR A CAREER IN WILDLIFE BIOLOGY. I ALSO ACQUIRED A WEALTH OF KNOWLEDGE ON THE NATURAL HISTORY OF THE GREATER BAMBOO LEMUR THANKS TO THE MALAGASY GUIDES.

I WORKED ON THE REFORESTATION PROJECT WHERE I WAS RESPONSIBLE FOR BUDGETING AND FOR ATTENDING VARIOUS ACTIVITIES RELATED TO TREE PLANTING. MY TIME IN THE FIELD CONSISTED OF COLLECTING COMPOST, COLLECTING SEEDS, MOVING SEEDLINGS FROM NURSERIES TO PLANTING SITES AND VISITING TREE NURSERIES FOR MONEY REDISTRIBUTION.



g. A new planting site right below a five year old planting site from the picture adjacent (h).
h. Five years after trees were planted - a forest has flourished.

i. Observing *simus* behavior in the field. The lemurs are in the giant bamboo stand.

j. A greater bamboo lemur taking some sun in a bamboo stand.

k. A mother grooms her baby while sitting on a giant bamboo tree within the stand.



Picture taken by Jessica Bao.

I GAINED INVALUABLE KNOWLEDGE ON MALAGASY LIVELIHOOD AND CULTURE THANKS TO THE ORGANIZATIONS COLLABORATION WITH THE COMMUNITY. THIS IMMERSIVE EXPERIENCE ENCOURAGES ME TO COLLABORATE WITH NGO'S THAT SEEK OUT COMMUNITY-BASED CONSERVATION FOR MY FUTURE CAREER!



The Madagascar Biodiversity Partnership
Partnership
www.madagascarpartnership.org
Mbp@madagascarpartnership.org

Jessica Bao
jessica.bao@mail.mcgill.ca
McGill University



Background picture taken by Jessica Bao.

Research & Innovation Summer Student Laboratory assistant

Employer: Marie-Ève Ouellet
Contact: ouelletme@medicago.com
My name: Étienne Mathieu
Contact: etienne.mathieu2@mail.mcgill.ca



Picture 1: Étienne loading an agarose gel with DNA samples
Photo credit: Charlotte

Company description

Medicago is a biopharmaceutical company that uses *Agrobacterium tumefaciens* as a vector to express genes of interest inside of the plant *Nicotiana benthamiana*, a close relative of tobacco. Their main project is to create a flu vaccine therefore, they express hemagglutinin, which is the antigene protein present at the surface of the flu virus that is recognized by our immune system.

Job description

When I first started, I was responsible for all the solution in the lab. I prepared different buffers, reactants and bacterial growth medium.

Then, I was assigned to the gene cloning team as support

I experimented with:

- plasmid construction and transformation in *E.coli*
- DNA gel electrophoresis,
- restriction enzyme mapping
- DNA purification

What I learned

Of course I learned plenty of technical skills and I gained dexterity in the lab, and it is going to be a great asset for my future academic career, but the most knowledge I acquired was when I was writing my research paper. I picked the hot research topic at Medicago: plant immune systems. I knew nothing about it before I started reading and got sucked in. I learned a lot about molecular signaling, plants hormones and gene expression.

I am happy I learned about this because I noticed that many of the same mechanisms are at play in plant's abiotic stress response. How they modulate gene expression to cope with cold or drought for example. It is a subject studied here at Mac campus and I hope I can be part of this research in the future.



Picture 2 : Étienne selecting *E.coli* clones to verify if their plasmid are correctly arranged.



McGill



Office of Student
Academic Services
Macdonald Campus

medicago

Internship at MAPAQ

Québec Ministry of Agriculture, Fisheries and Food



MAPAQ Estrie, 4260 Boul. Bourque office 1.10
Sherbrooke, QC J1N 2A5
Phone : (819) 820-3001

Internship description: Under the supervision of agronomists at MAPAQ, carry out the data collection, compilation and analysis for agricultural experiments



Joannie D'Amours collecting data for a trial in Aronia berries

Collaboration on a variety of field trials allowing to experience different methods of research



Julie Marcoux taking soil samples in a greenhouse



Geneviève Legault taking plant growth measurements

Consolidation of academic knowledge through the application of agronomic concepts



Julie Marcoux discussing with a Christmas tree producer

Development of professional relations with producers and experienced agronomists



Caroline Turcotte taking pictures of Haskap berries



Photo credit : Joannie D'Amours
Joannie.damours@mail.mcgill.ca

Dr. Audrey Moores
Department of Chemistry
McGill University
Audrey.Moores@mcgill.ca
(514)398-4654
<http://mooresresearch.org>

Green Chemistry Research Internship

Conjugation of chitosan with stearic acid through one-pot mechanochemistry

Tracy Liu
Food Science &
Nutrition U2
tracy.liu@mail.mcgill.ca



Up: steel jars inside the planetary mill
Down: planetary mill I used throughout the internship

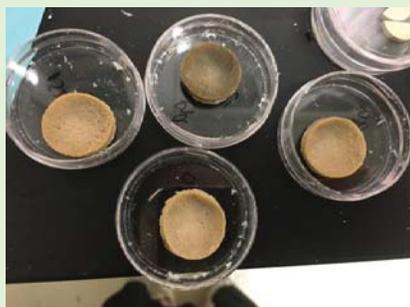
My Role

I assisted in research regarding the synthesis of chitin biopolymers under the supervision of Dr. Audrey Moores and post Master student Thomas Di Nardo.

The main instrument I worked with was a planetary mill, which allows many common reactions to happen in solid state instead of in solution. I specifically worked on the formation of chitin polymers, and also my personal project (see title).

In addition, I got trained and helped to run tests for the following instruments:

- Differential scanning calorimetry (DSC)
- Thermogravimetric analysis (TGA)
- Solid-state NMR
- Fourier transform infrared spectroscopy (FTIR)



Chitin biopolymers I produced by milling



A batch of chitosan polymers whose formula fails to dry in one piece

Overall experience

Besides all the technical skills I got to learn, I really observed and experienced conducting a scientific research. From determining a goal, to designing my own experiment, to ordering my own materials and choosing my own ways of characterization, this process isn't something taught in our curriculum yet are extremely important skills to learn for pursuing a graduate degree.

Other challenges:

- Working with unexpected results and learning to adjust the original plan
- Collaboration and communicating science in a way that's easy to understand for other people
- Knowing when to stop further pursuing research topic

All photos taken by Tracy Liu



McGill





My summer as an Environment Specialist at a Nestlé Chocolate Factory



Santiago Sottill Duprat
 Email: santiago.sottilduprat@mail.mcgill.ca

72 Sterling Road,
 Toronto, ON
 M6R2B6
 416-535-2181



The Company:

•Nestlé S.A. is a multinational food and drink corporation. It is the largest food company in the world. I worked at a Chocolate Factory that manufactures many well-known products for the Canadian Market, such as KitKat, Smarties, Aero, and Coffee Crisp.

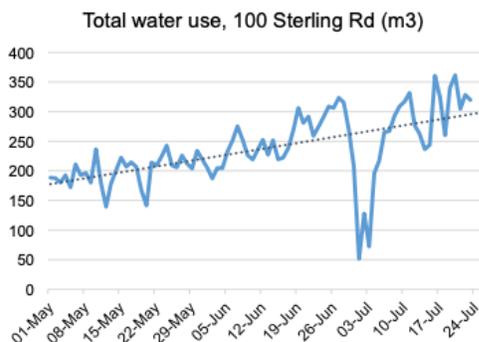
My Role as an Intern:

- My work consisted of a variety of tasks, including tracking and reporting the factory's environmental performance (in terms of water and energy consumption, for example), ensuring compliance to Nestlé's environmental requirements as well as governmental requirements, and finally working on a variety of energy, water, and waste efficiency projects.
- Some of the projects:
 - ⑩ Replacing fluorescent lighting with LEDs.
 - ⑩ Installing a Dissolved Air Flotation wastewater treatment plant in order to reduce BOD (Biological Oxygen Demand)
 - ⑩ Switching to dry-cleaning techniques to decrease water consumption.
 - ⑩ Promoting environmental awareness within the Factory.
 - ⑩ Color-coding and standardizing waste collection to minimize contamination.



Photo: Arefeh Rezaee

Presenting final results to the Factory's Management



Tracking the Factory's water consumption

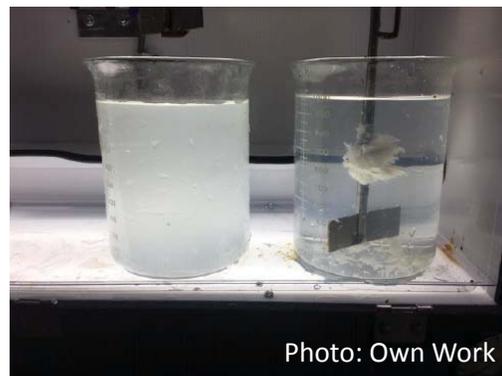


Photo: Own Work

Before and after addition of flocculants to waste water



Wildlife Intern with the Nunavik Region Marine Wildlife Board (NRMWB)

The Board

The NRMWB is a wildlife management board that's responsible for the marine species inhabiting the coastal waters of arctic Quebec known as Nunavik. The board itself was formed under the Nunavik Inuit Land Claim Agreement (NILCA) in 2007 to act as the main tool of wildlife management in the region.



Combines Two forms of Knowledge

1. Traditional Inuit Knowledge – Inuit Qaujimagatuqangit (IQ)
2. Western Science

Internship

Funded through the NSERC USRA program via the Humphries Lab. Aid the staff wildlife biologists of the board in the management of species that are vital to traditional Inuit Subsistence. Namely beluga, polar bear, and ringed seal.

Independent Projects

- 2018 Community and Regional Beluga Sampling Report Results
- Digitization of community Beluga migration and hunting maps
- Consolidation IQ for Polar Bear Regional Reports – Nunavik level figures

Skills Learned

- Understanding and appreciating ways of knowing outside of western science
- Experience living in a Inuit community as a biologist
- Translating IQ to GIS maps
- Nvivio software
- R statistical software
- The best lure for arctic char fishing (cyclops 3)

Going for my first ATV ride on the land



Picture: Frankie Jean-Gagnon

Artic Char fishing



Picture: Frankie Jean-Gagnon

The town of Inukjuak, QC



Picture: Filip Rakic

Filip Rakic
U3 Environmental Biology – Wildlife Biology
Filip.Rakic@mail.mcgill.ca

Nunavik Marine Region Wildlife Board
P.O. Box 433
Inukjuak QC
J0M 1M0, Canada
Phone: 1(819) 254-8667
info.nmrwb.ca





My Experience as an intern at an Emergency Veterinary Clinic



Figure 1: Kathleen (left) and Cassandra (right) comforting Trixie after having her surgery—Photo taken by Jennifer Krusemer

How does this internship contribute to my studies & future career?

The primary contribution of this internship on my studies is the complementary practical skills I learned to my theoretical knowledge that I got from school. I am much more comfortable when it comes to knowing the names and uses of all the equipment and medication reducing what I have to learn once I go to vet school. The relationships that I made with some of the veterinarians will also help me in the future because I have people to ask my questions to and get their opinion on things that have been in my position. The small taste of what it is to be a vet just gets me even more excited for my future as a veterinarian.

My duties and responsibilities at the clinic

- Assisting the veterinarians and technicians in surgery and consultations
- Setting up the surgical suites with the proper gowns and tools
- Recording anesthetic charts during surgery
- Nursing hospitalized and post surgical patients in the ICU
- Sanitizing cages, surgery rooms and dentistry rooms post procedures
- Walking dogs who are at the clinic
- Feeding all the animals boarded at the clinic
- Aiding in designing and executing rehabilitation programs



Figure 2: Harley (dog) receiving rehab after having a surgery to fix his broken femur—Photo taken by Sarah Richard



Figure 3: Mable getting ready to receive laser treatment by wearing her protective eyewear—Photo taken by Cassandra Zafrani



Figure 4: Alexander Hamilton; a cat who is a part of the clinic's adoption program and looking for his forever home—Photo taken by Cassandra Zafrani

What I learned

I was primarily placed in surgery therefore, I got the opportunity to learn a lot about different anaesthetic drugs such as fentanyl, propofol, ketamine. I became familiar with the tools and equipment used and I did not anticipate how long it would take me to learn their uses and names. I was able to get many different perspectives on their veterinary careers because the clinic had about 13 vets working there. Between all the vets that I spoke with, there was a general consensus about making sure to take time to take care of yourself and your wellbeing. In regards to skills, I learn how to safely hold an animal, minimizing the occurrence of accidents, but I also wanted to do it in a "fear free" way. Another skill that I acquired was being able to read and monitor the patients anaesthesia. This required me to learn how to read the ECG machine which is informing me whether the animal is getting enough oxygen, expelling their CO2 and has a normal heart rate.

My greatest success throughout my internship

My greatest success that I was able to accomplish throughout my internship was the permanent job that was offered to me at the end of the summer. This accomplishment is definitely a professional one as I will learn new skills that will develop my personality and knowledge that will increase my success of becoming a veterinarian. I also believe it is a personal accomplishment as well because this is my first job in the field that I wish to have my career in. It was indeed confirmation that I am actually good at working in the vet-med field and that what I theoretically wanted to do is genuinely what I wish my career will be.

Contact Information:

Cassandra Zafrani (Student Intern)
Major: Animal Biology
Email: Cassandra.Zafrani@mail.mcgill.ca

Pierrefonds Animal Hospital
Phone: (514) 626-9890
Email: info@hvdv.qc.ca



Figure 5: Mable trying on her stifle (knee) brace on for the first time. This will help stabilize her knee due to her cranial cruciate ligament tear—Photo taken by Cassandra Zafrani

ENVIRONMENT, HEALTH AND SAFETY INTERNSHIP

PRATT & WHITNEY CANADA (PWC), Industrial Hygiene Intern

Keel Scruton - Bioresource Engineering



Pratt & Whitney
A United Technologies Company

P&W Global EHS Toolkit: IH
Data Collection Sheet
Revision: 3
Page 1 of 4

Pratt & Whitney IH Qualitative Assessment Data Collection Sheet

Assessment Number: IHQEA_2019_C1_1234_Example_process
Business Unit: Example Department Name Department: 1234
Building: C1 Column #: AA-12 Machine BT# M12345-01
Process: Example process HRA: 12.3

Task description: General description of task by machine or task type

Shift Number: Day, evening, Night, Weekend Number of Employees: 1

Stressor Type: Chemical Physical Biological

Noise suspected Non-ionizing Radiation Ionizing Radiation

PMC/PWA Material Used:

Product Number	Dust	Mist	Fume	Fiber	Vapor	Gas	Autre
Internal Product #	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Skin Contact

Material Constituents:
Internal Product #: Product Ingredient list (CAS Number here)

Ex: Internal Product # for Isopropyl Alcohol: 2-Propanol (67-63-0)

PPE sheet: Oui Non À réévaluer OK Autre:

Noise measure: (Leq 80 sec., dBA)	Ambient	Equipment working	Other
Chemical Rank:	High (0-20 ppm) (0-0.5 mg/m ³)	Moderate (21-100 ppm) (>0.5-1.0 mg/m ³)	Low (>100 ppm) (>1.0 mg/m ³)
Proximity:	Breathing Zone	Near	No Contact
Source Size:	Point	Limited	Large

Highly regulated chemical	Asbestos	Cadmium	Formaldehyde
	Hexavalent chromium 4,4-methylenedianiline	Hydrogen fluoride	Lead

Frequency: Minimal Intermittent Continuous

Control: Not Controlled Administrative PPE Engineering Engineering & Administrative Fallsafe No control required

Regulated: Fails > monthly Fails quarterly Fails > once/year Fails < once/year Always meets requirements Not regulated

Sensitization: Yes No
Which product: Respiratory Skin

Internal Product #

Reproductive hazards: Yes No
Which product: Térstogène Placenta Lait maternel Mutagène Autre: _____

Carcinogenicity: Yes No
Which product: C1 C2 C3 A1 A2 A3

CRE: Yes No
Which product: Carcinogenicity Reproductive Endocrine disrupting

Control description:

Other Hazards / Comments:

(1,2) Examples of data collection forms utilized to compile observations made during risk analysis evaluations for machinery, products or processes with the goal of mitigating health risks in the form of chemical, physical, biological or radiative risks.

Advice to Future Interns

The best piece of advice I could give to any future interns wishing to work at Pratt & Whitney, or any organization, would be to ask questions; there is really no such thing as a bad question and your host organization is there to teach you as much as you are there to help them. Additionally, in applying for internships, one can never apply too early. The application process should begin in the fall by preparing your CV, cover letters, and attending interview workshops!

Job Description

This summer I was fortunate to have a 16 week internship at Pratt & Whitney Canada working within the Environment, Health and Safety division (EHS) as a direct member of the Industrial Hygiene team. My primary mandate for the summer was to carry out qualitative assessments of machines, chemical products, processes and procedures for health considerations and to evaluate potential risks; chemical, biological, physical or radiative. The information gathered was used to develop risk ratings using an internal Excel tool in collaboration with the data collection sheets displayed (1, 2); from these evaluations appropriate control measures are then implemented to regulate/control risk and create a lists of personal protective equipment to be used, displayed as posters at work stations (3). Additionally I participated in internal safety regulation audits, and an environmental "dive" activity, intended to determine the potential causes of a procedure malfunction.

Skills Developed & Practiced

At Pratt and Whitney I was given the opportunity to put skills developed within my program into practice, specifically the ability to analyse machinery and different systems in order to extract the necessary information. I also used research skills in order to perform accurate and current chemical safety research. Additionally, I gained skills that will be useful to me in my professional career such as project management, the ability to work within multidisciplinary teams, organisational skills including experience calling meetings with department supervisors, coordinating multiple schedules, contacting and interacting with suppliers and contractors and subsequently running meetings. I also gained valuable experience working with various industry tools (Visio, SAP, Excel). My greatest personal challenge over this internship was communicating in my second language within the workplace; this experience prepared me for the future, and gave me confidence in my ability to properly communicate my opinions and experiences in a professional setting.

5208-008

BANC D'ÉBAVRAGE
DEBURRING BENCH

	LUNETTES ET SOULIERS DE SÉCURITÉ SAFETY GLASSES AND SHOES	En tout temps At all times
	GANTS JETABLES DISPOSABLE GLOVES SAI123, SAI1207, SAI209, SAI1284	Manipulation de produits chimiques Chemical products handling
	GANTS ANTI-COUPURE CUT-RESISTANT GLOVES GL036, GL092, SAI205, SAI209	Manutention et manipulation de pièces Parts handling and manipulation
	PROTECTIONS AUDITIVES HEARING PROTECTION SAI0, SAI2, SA30, SAI179	Ébavurage et Vibropen Deburring and Vibropen
	OPTION #1 - VISIÈRE AVEC MENTONNIÈRE OPTION #1 - VISOR WITH CHIN GUARD SA58	Choisir l'option #1, #2 ou #3 lors de l'ébavurage Choose between option #1, #2, or #3 when deburring
	OPTION #2 - LUNETTES ÉTANCHES OPTION #2 - GOGGLES SAI92, SAI195	Choisir l'option #1, #2 ou #3 lors de l'ébavurage Choose between option #1, #2, or #3 when deburring
	OPTION #3 - LUNETTES AVEC MOUSSE OPTION #3 - SAFETY GLASSES WITH SEAL SAI194, SAI211	Choisir l'option #1, #2 ou #3 lors de l'ébavurage Choose between option #1, #2, or #3 when deburring

PRCÉDÉ / PROCEDURE 14.2 2019 05/14

(3) Examples of a personal protective equipment poster that was created following evaluations of deburring bench workstations. Posters such as these are displayed to end users of products, machines or processes, near or on the workstation, to effectively communicate protective policy.



Example of a Pratt & Whitney Turbofan Jet Engine from the Pure Power series evaluations I completed this summer which directly affected this line's production by ensuring worker safety and optimizing manufacturing efficiency.

[Image taken from <https://www.pwc.ca/en/>]

BUILDING IN PERU

INTERNATIONAL COOPERATION
WITH QUÉBEC SANS FRONTIÈRES
AND THE CREDIL

Personal contact info :

Guillaume.cere@mail.mcgill.ca

Employer contact info:

CREDIL (Comité régional d'éducation pour le développement international de Lanaudière), 101 rue DugasJoliette (Québec)J6E 4G7

DESIGNING AND BUDJETING THE PROTOTYPE

We were asked to design and build 12m² greenhouses for 9 local families, our constraints were that the greenhouses should last for a minimum of 10 years with the budget of about 500\$ canadien each.

LEARNING HOW TO USE NEW MATERIALS

In order to match our budget and constraints, we needed to improvise and learn how to build with new materials such as adobe stones. (mixture of water, sundried clay and straw being used in many countries to build houses)

BUILDING PHASE

The hardest part of building was to make the rock foundations deep and large enough for the greenhouse to resist the heavy rains of the rainy season. Also, as most of the greenhouses were located in the agricultural lands of the families, which were all very far one from the other, it increased significantly the difficulty level as we needed to transport all the materials and working tools to each working sites.

WORKSHOPS ON GREENHOUSE USAGE

In order for the greenhouses to be used properly , we planned several meetings with the families and local greenhouse experts.

In the end, it was a very rich learning experience as well for me as for the family in which I lived.



Introduction

With Montreal's modernization plan well on its way, innovative and avant-garde construction projects are booming all around the city. Throughout history, Quebec's construction industry has known its highs and lows, but it is currently booming with activity. With now over 15% of Montrealers living in condos, (Tomkinson, 2018) demand is beginning to outpace supply and promoters are pushing for more high-rise condo buildings. This past summer, I had the opportunity to intern for Reliance Construction on their *Tour des Canadiens - Phase 2 & 3* site (TDC 2 and TDC 3).

Job Description

Reliance Construction Group is a privately owned, family business that is based in Montreal. For over 50 years, it has devoted itself to developing small- and large-scale projects all over North America. From project planning to execution and delivery, its accomplishments include office-towers, hotels, shopping centers, industrial complexes and advanced-technology facilities. Within the company, my role was mainly in addressing and resolving deficiencies. From the early stages to the finishing touches of both high rises, I was to perform inspections to verify and correct any unusual problems and coordinate their solutions. I was able to shadow different members of the team to learn about their specific role in the company, from understanding how to pour 50 stories of concrete to coordinating architectural plans between engineers, architects and tradesmen.



Figure 1. Rebar on the 44th floor of TDC 2 prior to concrete pour



Figure 2. Window Wall Installation on 34th floor of TDC 2

Lessons Learned

Beyond the hard skills developed this summer is a long list of soft skills that I hope to carry with me throughout my career. From teamwork to coordination, logical reasoning to conflict management, negotiation to professionalism, persistence to observation, integrity and commitment, I went from being a reserved student intern to a confident decision maker working in a large company. Experiencing a corporate-style job was something that I needed to check off my list before moving forward academically and professionally – and working in such a fast-paced, quickly evolving field did just that.



Figure 4. View of Tour des Canadiens 3

LEED Construction

As the construction industry evolves, new technological advancements and methodologies are welcomed and considered, but typically only if they offer financial benefits. Reliance is eager to consider new practices if it means cutting down on costs or shortening the project timeline and providing earlier delivery dates. However, they do not always consider the global environmental impact of their work. LEED, a reputable accreditor, gives recognition for green construction, however it can be quite expensive, but it rewards sustainability and motivates contractors and developers to make better choices for the planet. As a motivation for builders to embark on the green movement, the USGBC established a rating system called Leadership in Energy and Environment Design (LEED). With goals of reducing the impact of buildings on the environment, improving working environments for building occupants, reducing building operation and maintenance costs and even projecting a better public image, LEED has grown over the years and was finally implemented in Canada in 2003.

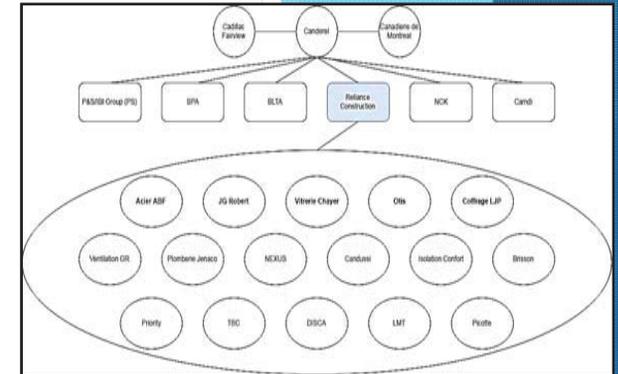


Figure 3. Hierarchy of companies surrounding Tour des Canadiens 2 & 3

Conclusions

The construction industry is a fast-paced and quickly changing field to work in, and for that reason I consider it invaluable experience as a university student. Stressing the fact that I was on-site and constantly getting my hands dirty, it was quite different from the theory-based learning that I was accustomed to. As I learnt how to build from bottom to top within the context of two twin high-rise concrete buildings, I became more comfortable entering a somewhat foreign workplace and knowing that every minute is critical for the execution of a project, a valuable lesson... In the years to come, I would like to take this summer's experience and relate it closely to my field of study – bioresource engineering. The mainstream construction industry is surprisingly separate from the LEED construction industry, and one of my goals would be to bridge the gap between the two. There are many ways in which new construction impacts the environment, and through this internship I was able to see many possibilities in how new construction can be adapted to global environmental concerns.

References

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- Reliance Construction. 2019. Organization and philosophy. <http://www.relianceconstruction.com/home/>.
- Yong Han Ahn and Annie R. Pearce. 2007. Green Construction: Contractor Experiences, Expectations, and Perceptions. Journal of Green Building: Summer 2007, Vol. 2, No. 3, pp. 106-122.

Agribusiness Summer Student with Richardson Pioneer

Sarah Foster, Agricultural Economics, U2

sarah.foster2@mail.mcgill.ca

Job Description

As an agribusiness student, my main duties were to learn from and assist my supervising agronomist. This consisted of traveling to farms and going in fields to assess the stage and health of the crop. I would have to identify any issues with the crop and come up with recommendations for the farmer on how to proceed, this included potentially using herbicide, pesticide, fungicide or a foliar application of nutrients. As well, when in farm fields I had to take many soil and plant tissue tests to help identify potential nutrient deficiencies. Another prominent part of my job was working in the agribusiness center office and grain elevator sight. Here, I would calculate quantities of chemical products farmers needed, enter data and information into the company's interface, help customers with questions and manage the inventory of products in the sites agricultural chemical shed.



Assessing a barley field for condition and growth stage.

Pictured: Sarah Foster Taken by: Dallas Herie



Pictured, top left to bottom right: peas, barley, canola, barley, canola.

Taken by: Sarah Foster

During summer 2019, I worked out of the Agribusiness Center in Dawson Creek, BC.

Supervisor: Calvin Zrymiak

Email: calvin.zrymiak@richardson.ca



What I Learned

From this internship, I gained a professional level of agronomic knowledge concerning many staple crops grown in Canada such as canola, peas, wheat, and barley. Through Richardson Pioneer, I had access to many agronomic resources in addition to learning directly from my supervising agronomist and on occasion the company's provincial agronomist for BC and Alberta. I had the opportunity to apply this knowledge daily when assessing crop condition for proper growth stage and health. Additionally, when working in the Agribusiness Center's office, I used my new knowledge to answer customer questions relating to agronomy, grain merchandising and commodity markets. Lastly, simply being able to observe how an agribusiness in Canada operates and interacts with farmers is very valuable insight and helps relate what am learning in university to practices happening in the agriculture industry.

About Richardson Pioneer

- Offers support to farmers year-round in areas such as seed selection, crop planning and agronomy.
- Sells all major types of crop protection to manage weeds, insects, and disease in field crops.
- Sells and blends fertilizer.
- Contracts and markets grain.
- Many locations across Canada.
- General and career inquiries: info@richardson.ca



McGill



Office of Student
Academic Services
Macdonald Campus

Internship as Biologist/Educator at Falcon Environmental Services



Solomon (red-tailed hawk) and I during a show
Photo credit; Taylor Sanzari

Description of job

- During this internship, I was responsible for animating free-flight demonstrations with birds of prey as well as leading the Apprentice Falconer activity.
- I was also responsible for bird care and general health assessment, cleaning aviaries and preparing the bird's food.



Apprentice Falconer activity with client (Taylor Sanzari) and Onyx (Harris hawk)
Photo credit; Moira Sanzari



Celeste (great-horned owl) helping me sell tickets for the show
Photo credit; Kate Sanzari

Things to know before applying

- Be prepared to work outside in all weather conditions
- Food preparation for birds requires handling raw poultry

What this internship taught me

- This internship taught me a great deal about birds of prey and how they are affected by humans. It gave me the opportunity to teach the public how incredible these birds are and how they need our help.
- I obtain hands on experience handling birds of prey and I have gain experience working in the field.
- This internship confirmed my interest in pursuing my studies in ornithology and species conservation



Goliath (bald eagle) and I getting ready for the show
Photo credit; Laurianne Dinucci



Bowie (barn owl) and I during the show
Photo credit; Taylor Sanzari

Contact info
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info@falconeduc.biz

FALCON



Office of Student
Academic Services
Macdonald Campus



McGill

Name: Yu Ziyi

Program: Human Nutrition

Email: ziyi.yu@mail.mcgill.ca

I'm currently a U2 in the Human Nutrition program. I did a 10-week internship in Shanghai General Hospital in the clinical nutrition department located in China.

My main role in the hospital was working with the hospital dietitians and helping them to direct the patients. I also worked in the milk room to allocate enteral nutritional power to the patients at 9:30 am and 15:30 pm every day.



Presentation on nutritional topic
Photo by: Yu Ziyi

This internship did help me a lot on shaping my future career. It definitely provided me with some idea of the experience of working in the profession.

I plan to become a nutritionist in the future.

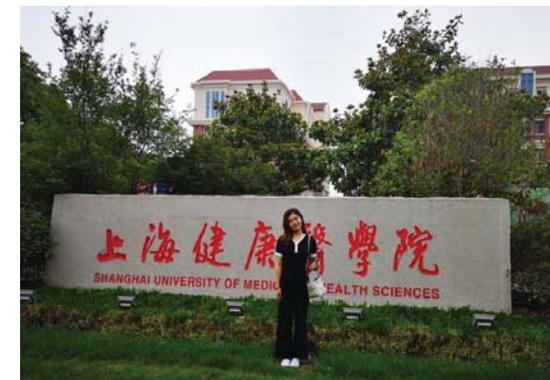
Institution: Shanghai General Hospital
Supervisor: Peiyong Wu



McGill
UNIVERSITY



Disriibution of nutritional powder
Photo taken by: Yu Ziyi



Visiting Shanghai University of medical
science and health
Photo taken by: Wu Peiyong



上海市第一人民醫院
SHANGHAI GENERAL HOSPITAL
上海交通大學附屬第一人民醫院
上海市紅十字醫院

FOOD SECURITY INTERN AT SHARE THE WARMTH

ALEXA BRODY

ALEXA.BRODY@MAIL.MCGILL.CA

ABOUT SHARE THE WARMTH

Share the Warmth is a non-profit organization in Point St Charles that aims to improve youth development and skills, increase food security for all and improve employment readiness.



Making roti and another meal served for the café
Taken by Aakansha Gupta



Alexa and Aakansha serving lunch for the BBQ
Taken by George Polanyi-Williamson

MY SHARE AT SHARE THE WARMTH

I planned and prepared healthy, affordable meals for the café and the BBQ, while serving and managing volunteers. I watered and harvested the garden three days a week. Additionally, I helped lead a cooking workshop designed to understand the new Canada Food Guide and to cook a meal using the guidelines.

SHARING MY NEW KNOWLEDGE

I learned how to make new recipes with interesting ingredients, cook for 25 –100 people, manage the weekly BBQ and manage volunteers and staff of all backgrounds. I learned how to use my time wisely to prepare the meal in time for lunch. Most importantly, I gained a better understanding of my role in making healthy food more accessible in a food insecure area and the challenges that exist in achieving this goal.



Cooking and nutrition workshop taken by myself



Meal made from the cooking and nutrition workshop. Photo taken by myself



Share the Warmth
514 933-5599
625 Fortune St., H3K 2R9



Teck Coal: Environmental Internship

Cael Geier
cael.geier@mail.mcgill.ca

Job Description: Working in the environmental department at Elkview Operation (EVO), a metallurgical coal mine in the Elk Valley. My position focused on dust emissions from the coal mine. EVO has prioritized dust as a major concern due to the proximity of the mine to the town of Sparwood.

Responsibilities of this position included:

- dust related data gathering, analysis and presentation
- Contractor management for dust related projects
- Helping vendors conduct dust related product trials on the mine site
- Monthly water sampling of mine influenced drainage areas



A dust suppression trial was set up to add a chemical amendment to our water trucks with the intention of increasing residency time of water in the haul roads (Cael Geier)

Highlights: Below are a few of my summer highlights from both at work and outside of work.

- Undertaking a variety of work in my office and in the field
- Attending a presentation from the CEO of Teck Resources outlining the company's future
- Making friends other Teck co-op students from across the country
- Either mountain biking, rock climbing, hiking and swimming daily



Jason Gravelle is taking water samples from the weir to be shipped away and analyzed by a third party laboratory. A minimum of 7 samples are collected to analyze for a variety of compounds in the water. (Cael Geier)



This photo was taken to help identify the species of fish that was caught on the mine site. It is a goal of the mine to vacate all fish from the waterways on site, so there is minimal negative health affects to the fish. This fish was released into the Elk River immediately following this photo. (Cael Geier)

Learnings: There were a variety of hard and soft skill learning opportunities during this position.

Learnings from this position included:

- Excel skill development for data configuration, analysis and display
- Power BI dashboard programming for data grouping configuring and displaying
- Safety conscious work skills and how to be courageous safety leader in the workplace
- Contractor communication, organization and management for undertaking on site projects
- Time management and project prioritization in order to manage the variety of weekly tasks and projects



The water truck is filling up with 45,000 gallons of water and 15 gallons of our dust suppression agent. The agent will generate foam as the truck fills, which can be seen on the side of the water reservoir. This product is a surfactant, reducing the surface tension of water to increase its residence time in the heavy haul roads. (Cael Geier)

Teck

Recruiting: 250-425-8800



McGill

Summer in a Landfill



The project

This summer I had the chance to work on several projects. The principal ones were:



Taken by Elodie Chatel

Construction of Two Landfill Cells

Supervision of the

- Excavation of desiccated and wet clay
- Installation of leachate collection pipes
- Berm construction
- Installation of geotextile at the cells bottom
- Installation of drainage stones at the cells bottom

In charge of quality control

Tetra Tech's Health and Safety representative
Constant communication with engineers at the office



Taken by Elodie Chatel

Final Cover of Two Landfill Cells

Supervision of the

- Installation of surface gas collectors
- Installation of bedding sand
- Installation of membrane to seal the cells
- Installation of a drainage layer
- Installation of topsoil

In charge of quality control

Tetra Tech's Health and safety representative
Constant communication with engineers at the office

Takeaways

First, I learned that there are always field constraints that makes it impossible to perfectly execute the engineers' drawings. Spending time on the field will definitely help me to think of those constraints when I will design.

Second, I learned how important are safety procedures. Some minor incidents happened and I saw how serious it was dealt with. As an engineer, I will have to make sure the building procedures of my designs are safe.

Challenges

It is important that a good communication is kept at all times between all parties involved (contractor, client, subcontractors) in a project. As an example, I once gave an instruction to the subcontractor (membrane installer), but forgot to give it to the contractor and it resulted in a pipe not properly sealed to be covered. When it happens, work has to be redone which adds time and cost to the project.

For the two last months of my internship I was representing Tetra Tech by myself on a site in Moose Creek, Ontario which required me to live away from home 3-4 days per week.

Experience

Supervising construction work; work in a men only environment; being autonomous

CONTACT

Élodie Chatel
U2 Bioresource Engineering
elodie.chatel@mail.mcgill.ca

Dominique Grenier, Solid Waste Director
Tetra Tech, Boucherville, Canada
Dominique.grenier@tetratech.com



Me purging a groundwater well in Moose Creek.
Taken by Eduardo Leon



The added value of this internship for myself



Convention on
Biological Diversity

More info?
www.unido.org

Ilias Mikhail Hader

E-mail: ilias.hader@mail.mcgill.ca

BEng Bioresource (U3)

Minor in Agribusiness Entrepreneurship

Minor in Political Economy

Working in Agri-business Development

- Research the technical cooperation and capacity-building services to agro-based and agro-related businesses and industries, inter alia, in the food, leather, textiles, wood and agricultural equipment sectors;
- Study the development of agro-industries in rural areas and contribute to poverty reduction;
- Research the promotion of investment in agribusiness and value chain development;
- Assist in various global forum activities, including expert group meetings in related fields and the publication of specialized training manuals, guides and electronic media;
- Lay out background work for pan-sectoral and inter-Agency action through the “Acting as One” delivery plan.



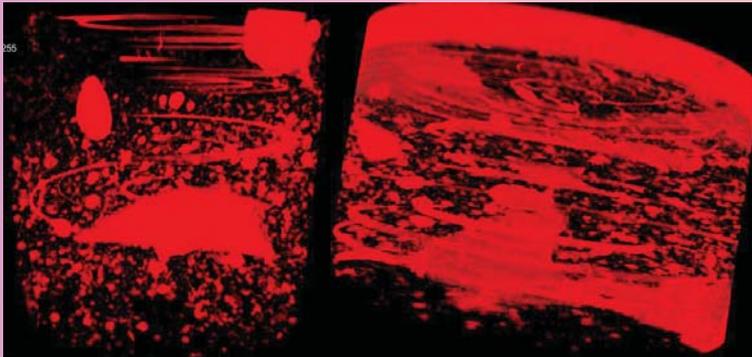
Left to right, top to bottom:

UNIDO interns having fun with SDG panels;
Vienna International Center, HQ of the UN in Vienna from the Danube;
Summer in Vienna and its inherent beauty;
Myself working very hard in Bratislava.



Above shows my samples in different stages. The top left corner is a 0.7mm x 0.7mm x 0.2 mm tiles that were to be tested for compressive strength, water content, and volume change. The center and top right image show the scaled up version which we referred to as our "brick." We would test larger bricks' physical properties as well.

This summer I worked with the Dr. Gates Research Group to study ways to convert waste streams into construction materials. I was working under PhD student Mike Mislán and acted as his research assistant. This allowed me to gain knowledge on how a research lab is run, how to write successful research papers, and how to operate advanced experimental instrumentation. This summer enabled me to be creative academically, and introduced me to a love for research.



Above are some images of our samples that were found using the secondary optical enclosure at the Canadian Light Source in Saskatchewan, SK. The Canadian light source is Canada's biggest synchrotron and allows for advanced, world class imaging.

Below is a picture of the Canadian Light Source room we were conducting experiments in. We were in the Biomedical Imaging and Therapy Facility, using the secondary optical monochromatic beam from the main source beamline in order to take more precise images of fine particles.



Dr. Gates Research Lab at the University of Calgary
Poster by Haley McKercher (haley.mckercher@mail.mcgill.ca)
Supervised by Mike Mislán (midmislán@ucalgary.ca)

Quality Assurance Intern

My role

- implemented TraceGains software
 - ✓ collected supplier, raw material & packaging data
 - ✓ attended TraceGains training on navigation & configuration
- prepared for plant food safety audits
 - ✓ assessed food safety certification status of suppliers, co-man and warehouses from internal databases
 - ✓ requested food safety documentation from suppliers

Megan Raymundo
megan.raymundo@mail.mcgill.ca



Megan worked in an office setting which was filled with inspiration food quotes. Office located in Mississauga, ON & phone number is 905-567-0660. Photo above taken by Megan Raymundo.

What I Learned

- food safety documentation & certifications: GFSI vs Non-GFSI
- roles within a food safety team: food fraud, hazard risk assessments, co-manufacturers, supplier approvals, non-conformance, auditors
- departments within food industry: quality assurance, product development, research and development, regulatory



TraceGains software manages the suppliers, safety and quality for ingredients and packaging items. Photo on right taken by Cigdem Demirez. Megan is enjoying the food at her team potluck.



WESTON FOODS

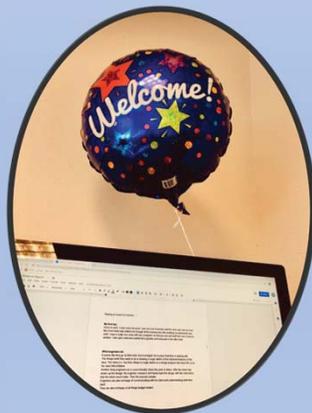
Weston Foods is a leading bakery company in North America specializing in the production of baked goods. Their brands include Wonder, D'italiano, Country Harvest & ACE Bakeries. All photos above taken by Megan Raymundo.



Internship at WMH Corporation

Job Description

This summer, I worked on the installation of 5G internet equipment onto existing lamp poles. After a senior engineer came back from the field sites with sketches of the electrical grids of the lamps where the equipment would be installed, I would draw out the sketches on the design software, MicroStation. I would then do calculations for each of these designs to make sure that the installation of the 5G internet would not make the circuit's voltage drop too high. If it would, I would test different possible solutions for reducing the voltage drop to an acceptable level.



"Welcome" balloon put up for me on my first day.



What I Learned

During this internship, I learned a lot about how street lighting electrical grids work, in cities as well as more rural areas, and was able to familiarize myself with the different types of lightbulbs and circuit wires used for street lamps. I also learned how to calculate a circuit's voltage drop and cumulative amperage. Finally, I became adept at using the engineering design software MicroStation. I'm especially pleased about this last skill since I'm interested in pursuing the design aspect of engineering and knowing how to use MicroStation will help me in my future endeavors.

Company Description

The company I did my internship with is called WMH which stands for "We Make it Happen." This civil engineering firm is based in San Jose, California but provides project management, project planning and design services all across the state.

What to do if the Voltage Drop is too high?

Step 1

Switch the bulbs to LEDs

If still too high...



Step 2

Replace the wires with thicker ones.

If still too high...



Step 3

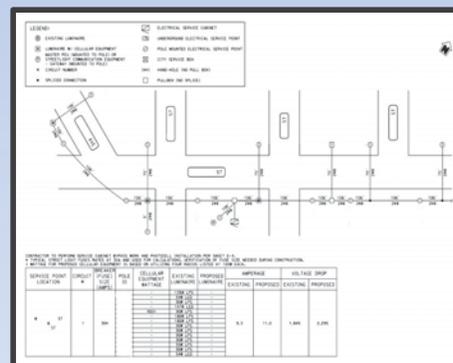
Install a service box with a higher voltage.

If still too high...



Step 4

Recommend another lamp for the 5G installation.



One of the designs I did using MicroStation design software.



My work space for the summer.



Underside of street lamp indicating the type of bulb used.



Electrical service cabinet that provides voltage to the street lamp circuit.

Contact Information

For Student

Name: Sara Barjoud

Email: sara.barjoud@mail.mcgill.ca

For Employer

Name: Shawn Vogtman

Email: svogtman@wmhcorporation.com



Electrical panel containing a circuit splice point.

Watershed Restoration and Management to Promote Sustainable Hydropower in Tajikistan at the World Bank



THE WORLD BANK

World Bank Internship

My name is Marc Massicotte, I am a U4 Bioresource Eng student and this past summer I was an intern at the World Bank in Washington DC. I worked in the Europe and Central Asia (ECA) region in the Environment sector. My work was mainly focused on Landscape and Watershed Restoration and Management through the use of various green infrastructure interventions. I was responsible for researching and organizing an analytical study in Tajikistan that will investigate the economic benefits to the hydropower sector associated with sedimentation reduction along the Vakhsh River in Tajikistan.

Marc Massicotte
marc.massicotte@mail.mcgill.ca



STUDY SITE: Nurek Reservoir, Tajikistan. The site is divided into two sections, upstream and downstream of the Vakhsh River with the Nurek hydropower dam being the central point. Sediment is evident in upstream water colour.

Sedimentation Evaluation Study

The study will be carried out this Fall (2019) and will consist of a year of sediment data collection, followed by an economic evaluation of potential restoration interventions, and will end with a cost/benefit analysis and restorations investment portfolio. I learned about technical practices used for sedimentation data collection, such as geochemical tracing techniques, specifically radionuclide tracing using Cesium-137. Additionally, I was taught methods of performing economic evaluations of ecosystem services from restoration projects.



Standing in the Atrium of the World Bank headquarters in Washington DC, US



Answering discussion questions on the presentation of the sedimentation study's detailed overview



The exterior of the UN House in Moscow, Russia.

Job Description

- The Moscow office works to prevent noncommunicable diseases by reducing risk factors: the harmful use of alcohol, tobacco use, unhealthy diet, and physical inactivity.
- My day-to-day tasks varied between contributing to policy papers, implementation research project proposals, project management and workshop project reports, and helping the surveillance team on acquiring and validating data for the NCD country capacity assessment.



A press conference held at TASS Russian News Agency on the launch of the WHO Digital Marketing report.

What I learned

- I learned so much working on a variety of projects. My projects taught me how public health policies are written and adopted to national policies, the role key stakeholders play for an effective implementation, and the importance of surveillance and monitoring of policy implementation.

Independent Project

- I wrote a paper on the implementation of industrially produced trans fat elimination in the Member States of the Eurasian Economic Union (EAEU), which was submitted to the Center of Disease Control and Prevention's Save Lives Cardiovascular Health Initiative Implementation Science Journal Special Supplement. The first manuscript is complete and I will be developing it at a CDC workshop at the CDC headquarters in Atlanta, Georgia in October.
- This paper summarizes existing frameworks and policies in the region, gaps, and suggests recommendations for next steps including practical steps to build the laboratory facilities to improve surveillance strengthen TR recommendations, develop research and awareness of the TFA ban in the EAEU, and harmonizing methods for food composition analysis to monitor TFA levels in the Eurasian Economic Union.

Future Plans

- This internship taught me the numerous opportunities to contribute to healthcare. I am inspired to continue my education and career goals in public or global health.



Post presentation on the challenges of implementation of the technical regulation on oil and fat products that bans the use of trans fats in the EAEU.



The technical regulation on oil and fat product for the Member States of the EAEU from which I wrote my report on.



Attending a training on Systems Mapping.



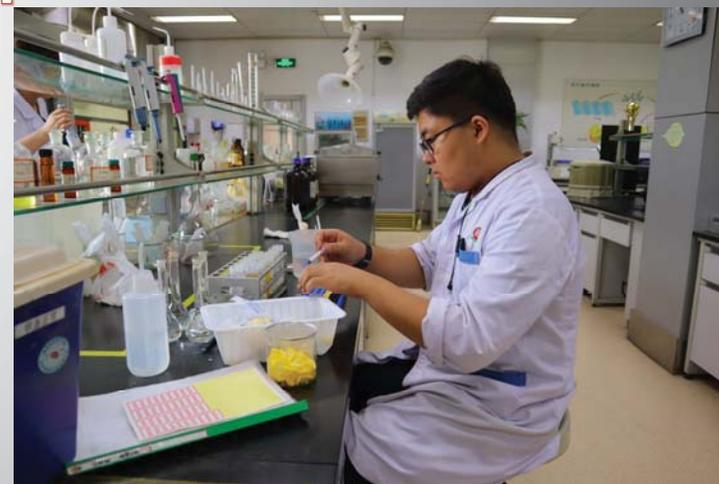
Food Analysis Intern In Xiwang Foods Co.

Job Description

My Job in Xiwang was food analyst, in charge of preservative and coloring agent analysis using HPLC method. The samples I needed to analyze are food products and their seasonings. The major analytes are sorbic acid, dehydroacetic acid, and Allura red.



A picture of me processing the data from HPLC. (WeiJuan Xin)



A picture of me transferring prepared sample solution into HPLC vials. (Yuanyuan Gao)

What I learned?

Through this 3-month internship, I learned a lot, most of it HPLC related. This will be really helpful for my future career after graduated. As a food sciences student, my first job will most likely be a food analyst in the laboratory of a food production company. Since I am familiar with the routine and analysis subjects in a food analysis lab, it will take me less time to be familiar with new lab and new work. In addition, I learned a lot from my colleagues, and now I feel more confident when I communicate with strangers.

Organization: Xiwang Food Co.
Intern student: Wenyao Fu
Email: wenyao.fu@mail.mcgill.ca

