

# APPLIED RESEARCH DAY APRIL 2016



**Friday, April 15, 2016**

8:00 AM - 2:30 PM

**Speaker Forum**

AC Theatre

**Project Showcase**

Gymnasium &  
Student Commons

**Reception & Awards**

Gymnasium

**ALGONQUIN**  
COLLEGE

Office of Applied  
Research and Innovation

# Welcome

to Algonquin College's Applied Research Day hosted by the Office of Applied Research & Innovation. Through exciting demonstrations and displays, this event showcases the wide range of applied research and innovation projects tackled by our students and faculty.

Our theme this year is "TALENT WINS". Winning products, services and organizations are all the direct result of great talent. And we know that talent is what drives the engine of innovation. As companies and organizations increasingly look to enhance innovation in our country, it is an imperative to develop this innovation talent. Applied Research does just that while providing our partner companies and community organizations with innovative solutions to their specific challenges and opportunities. So as you visit the exhibits this year remember even more important that the individual projects are the individuals behind the projects - the talent.

Our efforts in this would not be possible without the continued support of our partner companies, our great college and our amazing funders including the Natural Sciences and Engineering Research Council of Canada (NSERC) and Ontario Centers of Excellence (OCE) and others who support our mission.

**The Office of Applied Research and Innovation**



## Table of Contents

<b>Agenda</b>	<b>5</b>
<b>Event Floor Plan</b>	<b>6</b>
<b>Information Booths</b>	<b>8</b>
<b>Science, Engineering, and Construction</b>	<b>10</b>
<b>Information Technologies, Mobile, and Web Design</b>	<b>22</b>
<b>Arts, Design, Business, and Management</b>	<b>27</b>
<b>Research Centres</b>	<b>30</b>
<b>Contact Us</b>	<b>32</b>

# Agenda

## Speaker Forum

AC Theatre (E-Building)

8:00 - 8:30 AM

**Registration and Networking**  
(Theatre Lobby)

8:40 AM

**Welcome**  
**Marc Fares**

VP Digital Technologies and Innovation

8:50 AM

**Keynote and Q&A**  
**Lee Silverstone & Pablo Srugo**

Founders, Gymtrack Inc.

9:10 AM

**Special Announcement**  
**Leanna Verrucci**

Entrepreneurship Manager

9:20 AM

**Applied Research Update**  
**Mark Hoddenagh**

Executive Director, Strategic Initiatives

9:30 AM

**Closing Remarks**  
**Cristina Holguin-Pando**

Director, Applied Research and Innovation

## Project Showcase

Gymnasium (A-Building) & Student Commons (E-Building)

10:00 - 2:00 PM

**Showcase open to general public**

2:00 - 2:30 PM

**Awards**  
**Egor Evseev**

Incoming President, Algonquin Students' Association

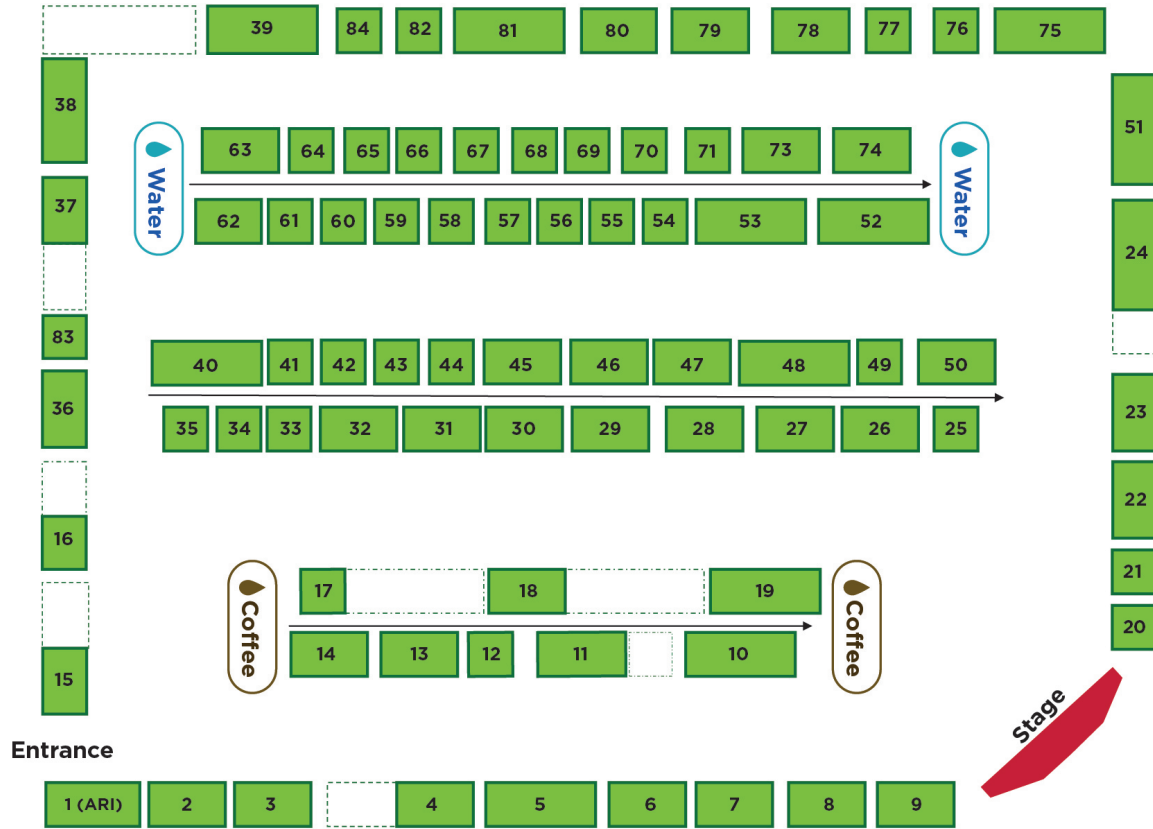
**Cheryl Jensen**

President, Algonquin College

# Floor Plan

## Gymnasium (A-Building)

## Student Commons (E-Building)



1. The Office of Applied Research and Innovation
2. The Residential Living Lab
3. Residential Living Lab Sensor System
4. 6 Axis CNC Grinding Machine
5. Fire Alarm Simulation
6. Sentry Box Pest Deterrent
7. Uni-Polar Pulsed Electromagnetic Medical Apparatus
8. G&P Kiln
9. Eco Tay Energy Retrofit
10. Marine Location Marker
11. Hypocycloid Leachate Extraction Pump
12. Performance Testing of Water Penetration and Air Infiltration to assess the effectiveness of Six Common Window Installation Techniques
13. Analysis of Cold Climate Environmental Phenomenon Affecting Material Performance in Exterior Carrara Marble Veneer Cladding
14. Measuring Spout
15. Body Count Detection System
16. Bottle Cleansing and Sanitizing Machine
17. Robotic snowblower
18. Sensitivity Analysis of the Criteria for Optimizing the Renovation and Energy Perspectives in a Multi-Story Post-Secondary College Building Developed in the 1970s
19. My Veggie Friend
20. Lighting Usage Profile Unit
21. ASHRAE Student HVAC Design Competition
22. Software tools for automated identification and tracking of retinal pathologies
23. Wireless Audible and Visual Smoke Alarm
24. Disinfection Efficiency of Wastewater Using UV Radiation

25. Geothermal Heated Sidewalks
26. Bacteriophage propagation using nutrients from waste streams
27. Quantification and analysis of BTEX compounds in soil
28. Sustainable Brewing Operations; A Waste Water Mitigation Study
29. Phage Propagation using Cost-Effective Waste Sources
30. Early Detection of Bovine Pregnancy: Detection of Pregnancy Associate Glycoproteins in Milk Using ELISA
31. Creating a Tool-Box for Genetic Modification of Cannabis: Engineering Secondary Metabolite Pathways
32. Making great beer locally: Quality control (QC) and Process Optimization in Nita Beer Craft Brewery
33. Ultraviolet Germicidal Irradiation (UVGI) using UV PURE's 'Upstream NC 10-50': Performance Characterization
34. RNA extraction from soil bacteria in phosphorus starvation conditions: Gene expression of  $\beta$ -propeller soil phytase activity from *Bacillus* sp.
35. Micro-encapsulation of probiotics: Are you reaping the benefits?
36. Automated Soil Compaction Tool
37. Drain-All Vacuum Excavation Truck Turret
38. Automated Hydroponics Garden
39. Automated Hydroponics Lighting System
40. GBatteries
41. ARI Hub
42. CloudChef website development
43. Project Lancet
44. Effective Mesh Networking for Faster Internet Access
45. Champion a Campaign Web-Application
46. 3D Sentry Website Design and Development



47. KSKY Website Design and Development
48. Presentey Engineering Products Limited Web Presence
49. Cartouche Puzzles
50. OutfitMatch
51. Global Advantage Video Project
52. PackagePal
53. CoachHub Motion Graphics
54. Attendancia
55. newRaum
56. Words I Say App (for android)
57. Sentence Combining - Speech/language Therapy App
58. Sitter Advantage App
59. Nepean Synchro / Synchro Ontario
60. Ottawa Bird Count Modernization
61. Web based Program Q&A and information system.
62. Photo-Dynamic OC Pro Mobile App User Interface Design
63. Creative Play Group
64. Wayfinding Strategies for Today's Hospitals
65. Off-Grid Residential Communities
66. Youtopia: Wellness & Therapeutic Retreat
67. Big Box Re-use
68. Out of The Box: Creating a modular design solution system for retail pop-up stores
69. Holistic Health
70. Improving Airport Waiting Experience by Design
71. Informal Settlement's Urban Design
72. Algonquin College Student Fees
73. Education Program Effectiveness (EPE)
74. Resilience and Victims of Violence: Understanding Strengths to Enhance Victim Assistance Training
75. Kinetic Innovation Lab

76. Understanding the Needs of AC Students for Services and Information
77. Quantitative Market Research with Ottawa Businesses and Residents
78. AC First Generation & Experienced Worker Centre
79. Ottawa Employment Hub (LEPC)
80. The Entrepreneurship Office
81. Singularity Development
82. Initial Public Relations
83. Soil Compaction - Kneading Prototype
84. Ontario Centres of Excellence
85. Electronic Musical Instrument - THEREMIN
86. Coordinating Colour Robots
87. Solar Charging Station
88. The Smart Apartment
89. Bike Charging Station
90. Laser Miter Saw System
91. Wireless Voltage Interrupter
92. Smart Photovoltaic Power System
93. HARC (Hydro One Applied Research Consortium) Project
94. Pool Ball Sorter
95. Light Aircraft Remote Sensing for Small Scale Environmental Applications
96. Eco-Friendly Blind
97. Metal collecting ARM from waste.
98. Explorer 1.0
99. The Steel Beam Project.
100. Zibi Building Envelope Improvements
101. Algonquin College Water Management Strategy

# Information Booths

## 1. The Office of Applied Research and Innovation

Come and visit us at the Algonquin College Applied Research and Innovation (ARI) booth! ARI is the lead sponsor and organizer for Applied Research Day. The ARI booth will display posters, video, and brochures to help visitors understand what ARI does. There will be a sign-up register for visitors to leave their business cards and request follow-up contact with the ARI office. Get contact and funding information do an applied research project with ARI.

## 2. The Residential Living Lab

Modern technologies are re-shaping the building industry. New tools and devices are changing the life cycle considerations of building design, construction, operation and renewal. Mobile devices are enabling new and faster modes of interactions between people. These technologies bring promise of improved performance and productivity, but place new demands on people and processes. This shift presents a growing opportunity for Applied Research and Algonquin made a strategic design to build a dedicated space in support of these activities.

The Residential Living Lab (RLL) will be a 1800 square foot residential building at the Perth campus, commissioned by the Office of Applied Research and Innovation and supported by Innovations Canada, to be constructed by Advanced Housing 2nd year students, led by faculty. This lab will be used as a collaborative space for students, faculty and clients whom are engaged in Applied Research projects as well as training for Highly Skilled Personnel. Research projects are in support of driving innovation within the construction sector as well as opportunities within the many disciplines offered at the Perth campus.

**Contact:** Kerry Milford (Project Manager - Perth Campus)

## 78. AC First Generation & Experienced Worker Centre

AC First Gen provides resources and support to First Generation students at Algonquin College as they pursue their post-secondary goals. We will feature mobile apps developed for FG students at AC - Go Forward App and e-Mentoring App. The Experienced Worker Centre (EWC) at Algonquin College help adults who have been laid-off, are underemployed, or are simply considering a new career identify programs and financial support that can assist them on their journey.

**Presenters:** Christine Elvina & Ian Paul

## 79. Ottawa Employment Hub (LEPC)

Ottawa Employment Hub is your Local Employment Planning Council. Find out how this pilot project is engaging with employers, educators and service providers working with job seekers and learners to create an innovative employment environment for Ottawa.

**Presenter:** Ingrid Argyle

## 80. The Entrepreneurship Office

The Entrepreneurship Office, housed inside the Algonquin College Centre for Innovation and Entrepreneurship (C151), provides entrepreneurial information, resources, programming and education to help young entrepreneurs, faculty and staff navigate the complex and exciting world of entrepreneurship.

**Presenters:** Leanna Verrucci & Sahar Faqiri

## 81. Singularity Development

Singularity Development is presenting one of our portfolio ventures that is focused on innovation at the collegiate level by providing scalable software solutions used across the broad spectrum of activities on campus.

**Presenters:** Seaf Al-Munayer; Gaurav Dabas; Godfrey Joekumar

## 82. Initial Public Relations

Initial PR is a full service public relations and communications firms that specializes in crisis communications surrounding stigmatized topics.

**Presenters:** Bryant McNamara; Alex Scantlebury; Marley Lewington; Graham Spero  
**Professors:** Bradley Moseley-Williams & Stephen Heckbert **Program:** Public Relations

## 84. Ontario Centres of Excellence

Please stop by the Ontario Centres of Excellence booth to find out more about OCE's programs to support industry-academic collaborations, the commercialization of research discoveries, and campus entrepreneurship and talent programs, including training and development support and seed funding. Many of the projects on display at Applied Research Day were funded by OCE.

**Contact:** Hindal Mirza

## 3. Residential Living Lab Sensor System

Located in the Residential Living Lab on the Algonquin College Perth Campus, the sensor system measures the performance of construction materials using temperature and relative humidity sensors. These sensors are installed within the layers of the building structure to monitor insulation efficiency.

**Students:** Daniel Eustace; Benjamin Donaldson; Austin Healey; Joey Lamarche

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Algonquin College Applied Research and Innovation

## 4. 6 Axis CNC Grinding Machine

A new CNC machine was designed and built to automatically grind dental drills. This amazing project took elements of two existing machines used at Xenopus Inc. and other high-end grinding machines available on the market and created a new machine capable of creating new drill configurations.

**Students:** Scott Macdonald; Jason MacLellan; Don Algama; Scott Wallis; Joseph Dupuis

**Principal Investigators:** Sandra Brancatelli & Jim Catton **Program:** Mechanical Engineering Technology

**Partner:** Xenopus Inc.

## 5. Fire Alarm Simulation

This device is meant to simulate a fire alarm horn sound. This will be used by Technician/Technologist in the fire to help them to test and replace out of date fire alarm systems.

**Students:** Eden Sidow; Farid Safi; Ali Turkie; Andrew Idehen

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Morrison Hershfield

## 6. Sentry Box Pest Deterrent

The Sentry Box is a hackable microcontroller based pest deterrent that uses flashing lights and sounds targeted specifically at the target pest. This device uses a passive infrared sensor for detection, high-quality audio, and a 1 Watt LED for deterrence.

**Students:** Jamie van der Raadt; Chris Lajeunesse; Jacob McDermott; Milan Neven

**Principal Investigator:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Alpha Group

## 7. Uni-Polar Pulsed Electromagnetic Medical Apparatus

This device will be mainly used in hospitals to treat various medical conditions. With the help of focusing magnets the apparatus pulses electromagnetic uni-polarized waves to areas of the body to assist and increase healing.

**Student:** Chad Lumsden; Bradley Walker; Phillip Auger; Soner Camci

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Hossam Mohamed

## 8. G&P Kiln

The objective of this project is to design and build a kiln for drying and heat treating lumber.

**Students:** Richard Davis; Jeffrey Deschambault; Connor McCafferty; Richard Eshaya; Michael Valente

**Principal Investigators:** Sandra Brancatelli **Program:** Mechanical Engineering Technology

**Partner:** G&P Products Ltd.

## 9. Eco Tay Energy Retrofit

Whole house energy retrofit and the installation and monitoring of windows that use a recently developed window technology

**Students:** Miriah Findlay; Ciaran Browne

**Principal Investigators:** Darren Hearfield **Program:** Heritage Carpentry

**Partner:** Michael Glover (Eco Tay)

## 10. Marine Location Marker

HFI has a need to modify an existing flare design so that it will sink after operation within a given time period. Flares are expected by the Canadian Military to undergo specific standardized testing deemed necessary for proper safety and reliability.

**Students:** Ryan St-Jean; Alex Ocolisanu; Georgios Korkolis; Ryan Lee; Julien Chartrand

**Principal Investigators:** Sandra Brancatelli & Bruno Rocha **Program:** Mechanical Engineering Technology

**Partner:** HFI Pyrotechnics

## 11. Hypocycloid Leachate Extraction Pump

The Hypocycloid Leachate Extraction Pump is a stationary and compact electric-hydraulic mechanism designed to draw water from down wells using a linear reciprocating negative pressure displacement method that reduces device wear and extends operational longevity.

**Students:** Garrett Hecht; Kyle Sturgess-Smart; Aakash Patel; Abhijeet Mahey; Colin Ploeg

**Principal Investigators:** Sandra Brancatelli **Program:** Mechanical Engineering Technology

**Partner:** ATZ Applied Technologies

## 12. Performance Testing of Water Penetration and Air Infiltration to assess the effectiveness of Six Common Window Installation Techniques

Six common window installation techniques were assembled and tested for water penetration and air infiltration following industry building codes and guidelines. From these tests, recommendations were made for ideal window installation techniques in our northern climate.

**Students:** William Klassen; Sean O'Rourke; Matthew Moore

**Principal Investigator:** Maria Parra **Program:** Bachelor of Building Science

**Partner:** Building Envelope Council Ottawa Region

## 13. Analysis of Cold Climate Environmental Phenomenon Affecting Material Performance in Exterior Carrara Marble Veneer Cladding

Increased failures in exterior marble building claddings have escalated project costs and public safety concerns. Findings suggest relationships between marble panel moisture content and temperature. Intent of this research is to apply marble coatings while controlling moisture to mitigate such failures.

**Students:** Kellan Hughes; Andrew Ryan; Beesan Elfarrar

**Principal Investigators:** Maria Parra & Ali Elwafi **Program:** Bachelor of Building Science

**Partner:** Algonquin College Applied Research and Innovation

## 14. Measuring Spout

Digital Measuring spout used to obtain flow rate and temperature of water flowing through a faucet. Units can be manually changed between imperial or metric to fit the users preference. All data is displayed through a LCD screen.

**Students:** Albert Kucab; Adam Nadeau; Bradley Kasaboski; Ali Menhem; Taskeen Karim

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Doug Potts

## 15. Body Count Detection System

Finding a room to study in the school can be very difficult at times. This is why our group came up with the idea of making a body count system. With the use of IR sensors our system counts how many people have entered a room and displays the occupancy of the room on an LCD screen.

**Students:** Jordan Persaud; Issam Haouzi

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Blerim Qela

## 16. Bottle Cleansing and Sanitizing Machine

A beer bottle cleanser and sanitizer machine is being designed and manufactured on the basis of time per bottle and ability to clean and sanitize bottles. This machine is being developed for Broadhead Brewing Company in order to increase the efficiency of the cleansing and sanitizing process.

**Students:** Derek Boase; Faisal Alotaibi; Mark Johnston; Ryan Moolenbeek; Ryan Veninga

**Principal Investigator:** Sandra Brancatelli & Jim Catton **Program:** Mechanical Engineering Technology

**Partner:** Broadhead Brewing Company

## 17. Robotic snowblower

A remote controlled, engine powered, mobile robot to clean a snow.

**Student:** Vladimir Efimochkin

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics

**Partner:** Vladimir Efimochkin

## 18. Sensitivity Analysis of the Criteria for Optimizing the Renovation and Energy Perspectives in a Multi-Story Post-Secondary College Building Developed in the 1970s

An in depth analysis of a school. This tests the performance of the mechanical system and building envelope of a multi-story tertiary education building. The energy performance is analyzed to establish the criteria for improving energy performance and efficiency through renovation.

**Students:** Kenrick George; Colin Martel; Karar Alhajari

**Principal Investigators:** Maria Parra **Program:** Bachelor of Building Science

**Partner:** Algonquin College

## 19. My Veggie Friend

My Veggie Friend aims to explore the feasibility of in-home food production through the use of easily accessible electronics and renewable materials. My Veggie Friend produces food for you in the comfort of your own home. Just press GROW!

**Students:** Alexander Joubert; Jeehoon Shim; Justin Dookhran

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics

## 20. Lighting Usage Profile Unit

Our device takes readings from a lighting system for energy audits. When the device senses that the lights are on, it takes a reading to determine the light level in that room. It saves the data from the reading onto a SD card for later analysis. It performs this operation every 15 minutes for a week.

**Students:** Ben Cooper; Jason Antrobus; Luis Villarreal; Ahmad El-Merhi

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Jeff Siddall (Morrison Hershfield)

## 21. ASHRAE Student HVAC Design Competition

Students have designed the HVAC system for a Beijing Municipal building as part of the annual Student Design Competition put forth by the American Society for Heating, Refrigerating and Air-Conditioning Engineers.

**Students:** Trevor Pardoel; Brandon Gonzalez; Brandon Zagrodnik

**Principal Investigators:** Sandra Brancatelli **Program:** Mechanical Engineering Technology

**Partner:** Morrison Hershfield

## 22. Software tools for automated identification and tracking of retinal pathologies

Annidis collaborated with Algonquin to develop novel Meta-Visualization and Image Registration/Alignment algorithms and software, such as: a) Composite multi-spectral images with extended field of view, b) Composite images with extended depth of field, and c) "Fly-through-wavelengths" solutions.

**Students:** Natalia Gorbenko; Taylor Breen; Filip Szymanski

**Principal Investigator:** Theo Mirtchev **Program:** Wireless Technology

**Partner:** Annidis Corp.

## 23. Wireless Audible and Visual Smoke Alarm

Design and prototyping a smoke detection and alarm system that detects smoke by three methods: ionization, photoelectric and carbon monoxide. It also integrates all devices via a wireless communication network and has both an audible and visual alarm.

**Students:** Braden Catlin; Brandon Wylie; Shane Kyle; Craig Mattis

**Principal Investigators:** Sandra Brancatelli & Jim Catton **Program:** Mechanical Engineering Technology

**Partner:** Haven Fire Safety

## 24. Disinfection Efficiency of Wastewater Using UV Radiation

UV treatment technology is a promising and fast growing water treatment method - typically applied to treat drinking water. Clearford Industries is exploring this application to treat water with low UVT% and high turbidity to achieve the highest microbial disinfection efficiency possible.

**Students:** Michael Nellis; Natalia Florea; Maya Blazevic; Hala Kiwan; Ifrah Hasan

**Principal Investigators:** Rudy Jones & Holly Dole **Program:** Biotechnology

**Partner:** Clearford Industries Inc.

## 25. Geothermal Heated Sidewalks

A study on how flow rates speeds affect rate of snow melt.

**Students:** Greg Roberts; Sean O'Bryan; Peter Sequin; Nicole Wells

**Principal Investigators:** Federico Fernandez **Program:** Civil Engineering Technology

**Partner:** National Capital Commission (NCC)

## 26. Bacteriophage propagation using nutrients from waste streams

Phages are a popular method for the treatment of biological disorders in humans, and other life. Generally, phages are produced via large-scale processes using defined media sources; however, waste streams like municipal, cheese or beer waste may be used alternatively as a "no cost" nutrient source.

**Students:** Conor O'Dwyer; Ryley Steele; Michaela Halladay; Brandon Duhaime; Christine Weller

**Principal Investigator:** Rudy Jones & Holly Dole **Program:** Biotechnology

**Partner:** La Cité collégiale

## 27. Quantification and analysis of BTEX compounds in soil

Sites contaminated with BTEX or other organic molecules can be remediated through biological technologies. In order to detect and monitor the efficacy of bioremediation, in-house methods were used for extracting, concentrating & measuring these chemicals at low levels (below 10 ppb) with a GC-MS.

**Student:** Xumin Li; Qing Gao; Tooba Tarakhel

**Principal Investigators:** Rudy Jones & Sean Beingessner **Program:** Biotechnology

**Partner:** Algonquin College

## 28. Sustainable Brewing Operations; A Waste Water Mitigation Study

Generation of waste water plagues all brewing processes. Its estimated that for every litre of beer produced 8 litres of waste is generated. With an eye toward sustainability, students working with Nita Beer piloted a project to characterize and mitigate waste streams generated during brewing

**Students:** Tam Phung; Natacha Carr; Sabrina Deschamps; Alexandra Benedeczkky

**Principal Investigators:** Rudy Jones & Sean Beingessner **Program:** Biotechnology

**Partner:** Nita Beer

## 29. Phage Propagation using Cost-Effective Waste Sources

Bacteriophages are a popular method for the treatment of biological disorders. Generally, phages are produced via large-scale processes using defined media; however, nutrients from waste streams like municipal or beer waste may be viable alternatives and represent a source of 'no-cost' nutrients.

**Students:** Christine Weller; Michaela Halladay; Ryley Steele; Conor O'Dwyer; Brandon Duhaime

**Principal Investigators:** Rudy Jones & Sean Beingessner **Program:** Biotechnology

**Partner:** Algonquin College

## 30. Early Detection of Bovine Pregnancy: Detection of Pregnancy Associate Glycoproteins in Milk Using ELISA

Early detection of cow pregnancy is a vital part of reproductive management. Traditionally, diagnosis is done through rectal ultrasound (35-day gestation). Detection of PAG concentrations in milk by ELISA at 28 days after insemination may be used as an alternative that is cost effective for farmers.

**Students:** Sara Noyes; Lindsey Clarke; Heather Tunn; Maria-Claudia Rinaldo; Fardin Sadeghigarmaroudi

**Principal Investigators:** Rudy Jones & Sean Beingessner **Program:** Biotechnology

**Partner:** Brabantdale Farms

## 31. Creating a Tool-Box for Genetic Modification of Cannabis: Engineering Secondary Metabolite Pathways

Along with Tweed Marijuana and the University of Ottawa, a collaborative project using modern tools of molecular biology to genetically modify the genome of the Cannabis plant was launched. The goal: to manipulate the plant's metabolism to increase the production of medically relevant compounds.

**Students:** David Robinson; David Snell; Stephanie Schultz

**Principal Investigators:** Rudy Jones & Loreta Gudynaite-Savitch **Program:** Biotechnology

**Partner:** Tweed, University of Ottawa

## 32. Making great beer locally: Quality control (QC) and Process Optimization in Nita Beer Craft Brewery

In 2015 it was estimated that 170 craft breweries are operating in Ontario. To compete in this competitive market, it is important to produce consistent, high quality products. Along with Nita Beer, students developed and implemented an effective and cost efficient Quality Assurance (QA) and Quality.

**Students:** Anne-Marie Rufiange; Adam Delgado; Jessica Romancio; Alex Miller

**Principal Investigators:** Rudy Jones **Program:** Biotechnology

**Partner:** Nita Beer Company



## 33. Ultraviolet Germicidal Irradiation (UVGI) using UV PURE's 'Upstream NC 10-50': Performance Characterization

Ultraviolet Germicidal Irradiation is a disinfection technology that uses UV photons to inactivate micro-organisms by altering nucleic acid and disrupting vital cell functions. The performance of a commercially available UV treatment product from UV Pure was assessed under a wide range of conditions.

**Students:** Shayla Morrison; Kamseha Vijayasooriyakanthan; Maria Mahmud; Mark Farah; Reem Atiehh  
**Principal Investigators:** Rudy Jones & Sean Beingessner **Program:** Biotechnology  
**Partner:** Clearford Water Systems Inc.

## 34. RNA extraction from soil bacteria in phosphorus starvation conditions: Gene expression of $\beta$ -propeller soil phytase activity from *Bacillus* sp.

Plant growth in a deficient phosphorus environment causes the expression of certain genes. Through the extraction of RNA from bacteria in the soil, the gene expression, specifically of  $\beta$ -propeller phytase is evaluated using several biomolecular techniques, including DNA microarrays and real time PCR.

**Students:** Marcela Gilbert; Cristina Celso; Mahdid Meymandy  
**Principal Investigators:** Rudy Jones & Holly Dole **Program:** Biotechnology  
**Partner:** Agriculture and Agri-Food Canada, and Health Canada

## 35. Micro-encapsulation of probiotics: Are you reaping the benefits?

Probiotics are living bacteria that are good for your health. Recent studies show that viability of probiotics from commercial products is compromised due to the acidic nature of the digestive system. Microencapsulation of probiotics using calcium-alginate beads is one safer delivery method.

**Students:** Alan Cruz; Germain-Andres Mercado; Paul Arol Djonkamwambo  
**Principal Investigator:** Rudy Jones & Holly Dole **Program:** Biotechnology

## 36. Automated Soil Compaction Tool

An automated soil compaction tool for testing and analyzing efficiency of various soil compaction methods was developed.

**Students:** Michael Smith; Mathieu Borges; Xiran Zhou  
**Principal Investigator:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technologist  
**Partner:** Algonquin College and Federico Fernandez

## 37. Drain-All Vacuum Excavation Truck Turret

A vacuum excavation truck turret is to be designed and built for Drain-All Ltd. The turret is designed to provide the needed clearance between the boom, back and sides of the truck. The turret is to be manufactured to upgrade Drain-All's vacuum excavator truck fleet, consisting of 29 trucks.

**Student:** Andrew Robbins; John Gonzalez; Anthony Kurz; Nick Chee; Maxwell Hopky  
**Principal Investigators:** Sandra Brancatelli **Program:** Mechanical Engineering Technology  
**Partner:** Drain-All Ltd.

## 38. Automated Hydroponics Garden

Our design supplies a variety of vegetables with a regulated amount of oxygenated water and nutrients, and offers some temperature and humidity control. The system and it's user interface are automated via an Arduino micro controller and a variety of sensors.

**Students:** Robert Wright; John Wojnarowicz; Justin Richards  
**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Jennifer Watkins

## 39. Automated Hydroponics Lighting System

An automated, low power lighting system for a hydroponics vegetable garden to enable indoor vegetable growth year round.

**Students:** Daniel David; Anton Kukhtiy; Corey Little  
**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Jennifer Watkins

**Booths 40-62:** Please go to page 22.

**Category:** Information Technologies, Mobile and Web Design

**Booths 63-77:** Please go to page 27.

**Category:** Arts, Design, Business, and Management

## 83. Soil Compaction - Kneading Prototype

Currently in the civil field the soil compaction process has remained untouched in terms of technological advancements. There is a basic 3 step process that is still followed to this day and our client Federico Fernandez is trying to change this basic process. The goal of this kneading prototype is to eliminate steps of this 3 step process to produced more efficient results for soil compaction and to reduce the overall time of production of soil compaction. This kneading prototype will be able to measure sink age in the soil that has occurred during compaction, and then have this data wirelessly transferred to a digital display (this could reduce major steps during the current soil compaction process).

**Students:** Alan Guy; Michael Blanchard  
**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technician  
**Partner:** Geofed

## 85. Electronic Musical Instrument - THEREMIN

The device consist of two metal antennas, one for controlling the pitch or frequency of the noise (wave) and the other for the volume of noise (amplitude of wave). This device produces noise by detecting the two hand movements across the antennas. Signals will be amplified and then send to loudspeaker

**Students:** Harvinder Pal Singh; Paramjit Singh; Ajay Kumar

**Principal Investigators:** Wael Ismaeil & James Eaton **Program:** Electro-Mechanical Engineering Technician - Robotics  
**Partner:** Algonquin College

## 86. Coordinating Colour Robots

Small-Scale Robots that can transport cargo on different colour lines. Based on which line the robot is on, one line is consider important. The robots will then coordinate to each other based on the colour line that they are following.

**Students:** Jacob Munoz

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics

## 87. Solar Charging Station

The Solar Car Charging Station is a dual axis solar tracker that has the ability of following the sun based around a micro-controller with a code that uses complex equations to find the sun anyplace, anywhere, anytime.

**Students:** Luke Martin; David Lazarus; Christopher Downs; Eric Joly; Mohamed Elhajhassan; Alfred Pararajasingam

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Joseph and Mike Dupuis

## 88. The Smart Apartment

This apartment has various types of sensors, measuring tools, occupied for the better part of the day by seniors two days a week. By monitoring the seniors' activity within this apartment and collecting data from the sensors, we hope to find ways to help the longevity of independent living for seniors.

**Students:** Kevin Bisaillon; Robert Peter; Sean Woodruff

**Principal Investigator:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Kevin Holmes

## 89. Bike Charging Station

A modified exercise bicycle that charges a mobile phone using the energy of the user.

**Student:** Steve Campagna; Tena Tesso; Abel Tsehaye; Ian Vanveen; Joey Oscanesipatry

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Algonquin College Fitness Zone

## 90. Laser Miter Saw System

Come see the future of carpentry! No more "measure twice, cut once." Laser measuring and Bluetooth coupled with accurate motor control has eliminated all human error and inefficiency. Our automated miter saw system increases productivity and reduces labour costs.

**Students:** Jonathan Siaghail; Edward McWilliams

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics  
**Partner:** Electro-Mechanical Engineering Technician - Robotics

## 91. Wireless Voltage Interrupter

This project is designed to save customers money by eliminating the issue of phantom power. It works the same way as a conventional power bar, however it has a wireless control feature. As well, it eliminates phantom power by implementing a battery.

**Students:** Mitchell Crigger; Liam Widdowfield; Hamed Suhonjic

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

## 92. Smart Photovoltaic Power System

We are designing a Photovoltaic Power System for recreational vehicle and home use. This project includes photovoltaic power panel, battery array, smart power controller and user interface (with Internet of Things support).

**Students:** Enming Zhang; Shi Du; Minh Nguyen

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics  
**Partner:** Algonquin College

## 93. HARC (Hydro One Applied Research Consortium) Project

We are testing the voltage capabilities of a CSW 5550 power supply to see how different power quality issues affect everyday appliances.

**Students:** Michael Smith; Chris Piel; Yones Abdella; Matthew Rathwell

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology  
**Partner:** Alex Yang (Algonquin College Branch of HARC)

## 94. Pool Ball Sorter

This machine will be attached to a billiards table and will seamlessly collect the balls and sort them accordingly. The machine will be stored underneath the table for easy storage.

**Students:** Marshall Warburton; Mitchell Kulig; Matthew Laplante; Joshua Languedoc

**Principal Investigators:** Wael Ismaeil & James Eaton **Program:** Electro-Mechanical Engineering Technician - Robotics

## 95. Light Aircraft Remote Sensing for Small Scale Environmental Applications

This project utilizes remote sensing and LiDAR for two environmental applications; one terrestrial and the other aquatic. The terrestrial component facilitates environmental compliance requirements specific to aggregate pit mining. The aquatic component focuses on the delineation of blue-green algae.

**Student:** Sean Rushlow

**Principal Investigators:** Sarah Hall & Julie Sylvestre **Program:** Environmental Technician Diploma Program

**Partner:** Ontario Resource Management Group, Inc. (ORMG)

## 96. Eco-Friendly Blind

This project entails a product that is intended to save the user money on their heating and cooling bills. The blind is designed to go up and down automatically based on external light and internal temperature to help regulate the temperature in the user's home.

**Students:** Ryan Bilson; Austen Campbell; Dylan Schroeder; Kyle Drisdelle

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

## 97. Metal collecting ARM from waste.

Our project is based upon the recycling process and uses a Robotic ARM that collects metal from waste. Our project is environment friendly. We are using electromagnet solenoid that becomes magnetic when electricity passes through it. Consequently it attracts metals such as iron pieces.

**Students:** Nishan Singh Lalia; Malak Singh; Jashandeep Singh; Chhattabjay Singh

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics

**Partner:** Algonquin College

## 98. Explorer 1.0

Explorer 1.0 is a robot that will explore an unknown location, draw a map of that location and displays it on a user's computer. It also reports the current temperature, the humidity level, the level of methane and carbon monoxide. In addition, the video feed from the robot will appear on a user's computer.

**Student:** Artem Petrishchev

**Principal Investigators:** Wael Ismaeil **Program:** Electro-Mechanical Engineering Technician - Robotics

## 99. The Steel Beam Project.

Our project was to create a LabVIEW interface that displays the resultant force, the force at the left saddle, and the force at the right saddle of a steel beam. The above information was plotted on a shear and moment diagram using LabVIEW.

**Student:** Joseph Kasaji; Jason Gallinger

**Principal Investigators:** Cynthia Ough Underwood & Carolyn Cote **Program:** Electrical Engineering Technology

**Partner:** Francesco Tangorra

## 100. Zibi Building Envelope Improvements

The purpose of this research project is to explore various possibilities & options to retrofit the envelope of Block 2 of the Zibi development site, a heritage load-bearing brick warehouse that stands to be converted into office and retail space, with the following main objectives: reducing energy consumption, improving occupants' comfort, & preserving the heritage values, all within limits of a reasonable budget.

**Students:** Juan Gonzalo; William Leahey; Tuan Fam; Brent Merritt

**Principal Investigators:** Richard Briginshaw **Program:** Green Architecture Program

**Partner:** Windmill Development Group Ltd.

## 101. Algonquin College Water Management Strategy

The College-wide Water Strategy at Algonquin College Campuses aims to create a vision, set of guiding principles and areas of focus, and exploratory objectives. The aim of this research is to obtain information about Water Management and numerical data to plan for responsible water strategy. The results of the investigation will inform the Water Strategy Plan of Algonquin College to be implemented at the three campuses, namely Woodroffe, Pembroke and Perth.

**Students:** Nathan Eckert; Rukma Ramdenee; Sonali Srivastava; Siwei Wang

**Principal Investigators:** Richard Briginshaw **Program:** Green Architecture Program

**Partner:** Algonquin College, BuildGreen Solutions, Morrison Hershfield

## 40. GBatteries

GBatteries' EVA battery is an affordable home battery system that reduces greenhouse gas emission. The information will be presented in a fun and exciting motion graphics video showcasing the Eva battery system and how it can benefit consumers.

**Students:** Megan Goudie; Jason Eduardo Mata; Rachel Woodcock; Matt Hebb; Andrew Leung; Cyril Gwaze; Kristin Prieur

**Principal Investigators:** Laura Young & John Kozodoj **Program:** Interactive Media Design

**Partner:** GBatteries

## 41. ARI Hub

The ARI Hub is a web application to simplify project management. It allows teams to collaborate, delegate tasks, monitor progress, and manage their auto-generated timesheets. Its user-friendly interface makes it easy for the whole team to manage the small details without losing the big picture.

**Student:** Luke Bailey

**Principal Investigator:** Christopher Elliott **Program:** Computer Engineering Technology – Computing Science

**Partner:** Algonquin College

## 42. CloudChef website development

CloudChef is a startup company that offers in-home cooking services. Customers can purchase complete meals from chefs that come to the home and provide a gourmet culinary experience. A website was developed using the Shopify platform for the client to use for selling chef services.

**Students:** Jordan Koski; Stephen Noynay; Shauna Wotherspoon; Josh Laurin; Simple Akuoma Osuka

**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design

**Partner:** CloudChef

## 43. Project Lancet

Project Lancet is an integral component of the Newborn Screening Ontario (NSO) Information Systems re-build. The objective of this project is to deliver an agnostic and extensible staging infrastructure capable of integrating structured data from multiple platform independent data sources.

**Students:** Manas Sharma; Hossam El-Masri

**Principal Investigator:** Christopher Elliott **Partner:** CHEO

## 44. Effective Mesh Networking for Faster Internet Access

Our research is to develop and prototype an implementable Wireless Mesh Networking(WMN) software for home/business gateway routers. We presents a different model of WMN, one in which Internet service subscribers home router mesh with each other to achieve greater speeds and reliability.

**Student:** Kelvert Ballantyne

**Principal Investigators:** Wahab Almuttadi **Program:** Wireless/Mobility Telecommunication Engineering Technician

## 45. Champion a Campaign Web-Application

SokJok's Champion a Campaign is a mobile ready web-application designed by our team that enables students and the community to create, share, join, and contribute to Fundraising Campaigns. Users can set goals, load media and invite others to participate in either helping them to raise or donate money.

**Students:** Christopher James; Peter Davidson; Dylan Griffiths; Andrija Connor; Kendall Abraham

**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design

**Partner:** Sok Jok

## 46. 3D Sentry Website Design and Development

The objective was to build a mobile-ready and user-friendly website for 3D Sentry Inc, a perimeter security company. The website offers industry-leading features such as a members login page to view white papers and a company blog. The site is visually appealing, while maintaining a corporate look.

**Students:** Vivian Maganas; Jocelyne Fares; David Winton; Katerina Brown; Nancy Rivas

**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design

**Partner:** 3D Sentry Corporation Inc.

## 47. KSKY Website Design and Development

A professional, responsive WordPress website with a modern twist was designed & developed for KSKY to help increase sales for their renowned haze removal software. We introduced interactive comparison sliders, eCommerce for digital downloads and customer management tools.

**Students:** Eileen Xue; Skyler Lyytinen; Sami Malik; Aaron Dell

**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design

**Partner:** KSKY HI-TECH CORP.

## 48. Presentey Engineering Products Limited Web Presence

The Presentey Engineering Products Limited website needed a revamp. A modern site that follows accessibility guidelines was designed. It is technologically current, fully responsive, mobile compatible, aesthetically beautiful, and informative. We aim to leave users with an impression that supports PEPL's reputation for excellence and providing their clients with innovative solutions.

**Students:** Alison Tucker; Matthew Sanford; Kristelle MacSween; Casey Campbell; Munhohgavin Chan

**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design

**Partner:** Presentey Engineering Products Limited

## 49. Cartouche Puzzles

A Sudoku-like puzzle game was designed to help students improve their basic math and algebra skills while on the go. The Schools of Advance Technology and Media & Design combined forces to create a mobile app version of this engaging paper & pencil game.

**Students:** Kirk Davies; Kate Bourque; Alex Imray Papineau

**Principal Investigator:** Gerry Paquette & Vinay-Réginald Kumar **Program:** Mobile Application Design & Development

**Partner:** Math Pickle

## 50. OutfitMatch

Our team designed a browser plugin for OutfitMatch so users can connect multiple online clothing retailers through a single controllable canvas. It allows users to combine items to create and view outfits, facilitating purchases. This plugin enables a more natural online shopping experience.

**Students:** Johnathan Castiglione; Tyler Hendry; Colin Jacques; Erik Plumadore  
**Principal Investigators:** SuCheng Lee & Stefan Dickerson **Program:** Interactive Media Design  
**Partner:** S8 Inc.

## 51. Global Advantage Video Project

Our team has produced a short video that introduces David Watters, CEO of Global Advantage consulting, and helps explain some of the services that he and his team offer. We also created visual and audio assets for a future motion graphics video that Global Advantage will be creating.

**Students:** Nelson Smith; Ashley Foote; Mathieu Ouimet; Jacob Mulholland; Jesus Fuentes; Eric Crozier; Anand Asaithambi  
**Principal Investigators:** Laura Young & John Kozodoj **Program:** Interactive Media Design  
**Partner:** Global Advantage Consulting

## 52. PackagePal

The team created a short two to three minute promotional video for the company PackagePal. This video outlines the problems with the current package delivery system, and highlights PackagePal's solution.

**Students:** Graeme Smithers; Jack Aveling; Kyle Gilmour; Yanni Bouziotas; Joey Kidney; Chris Brown; Mohammad Abbas  
**Principal Investigators:** Laura Young & John Kozodoj **Program:** Interactive Media Design  
**Partner:** PackagePal

## 53. CoachHub Motion Graphics

The team created a one minute and a half motion graphics video promoting CoachHub, a business that provides young athletes with a personal sports trainer. CoachHub has a strong belief that sports coaching can help you in many aspects of life, not just sports.

**Students:** Derek Layman; Chase Raley; Lindy Diep; Alyssa Robinson; Ariel Toulouse; Ross McKinnon; Ali Mansour  
**Principal Investigators:** Laura Young & John Kozodoj **Program:** Interactive Media Design  
**Partner:** Coach Hub

## 54. Attendencia

Attendencia mobile app improves the learning & teaching experience for both students and teachers. It is built using Beacon technology in the students' phones to take attendance automatically. Attendencia is integrated with the Canvas LMS to make taking attendance much easier and faster. It provides the teacher with live updates of the class attendance as well as analytic charts for the whole semester.

**Student:** Daniel Maslen; Hugo Nicastro; Steve Haskins; Wael Showair  
**Principal Investigators:** Steve Griffith & Gerlad Hurdle **Program:** Mobile Application Design and Development  
**Partner:** Prof. Chris Castello & Prof. Chris Jones

## 55. newRaum

A interior design contest marketplace website.

**Students:** Caleb Bear; Matt Young; Sara Carpinone; Doan Kahn; Kari Ball  
**Principal Investigators:** Steve Griffith **Program:** Mobile Application Design and Development  
**Partner:** Casey Grey, Veronica Druta

## 56. Words I Say App (For Android)

Words I Say is a simple and intuitive application that allows parents or caregivers to track the words said by a child, along with how and when each word was pronounced. Parents and caregivers will get a simple list of words, displayed in the order that they first appeared in the child's vocabulary. Since a single word will often evolve and be said differently at different time, the app will also keep track of those changes and display them for the parent and caregiver to see the progress. Proud parents will be able to share their child's accomplishments, and new words with a one click process to post any new word on the parent's Facebook page.

**Students:** Abix Saparoff; Bo Yuan; Bo Liao; Ross Fora; Keagan Peterson  
**Principal Investigators:** Steve Griffith & Gerlad Hurdle **Program:** Mobile Application Design and Development  
**Partner:** Carole Asselin

## 57. Sentence Combining - Speech/Language Therapy App

We are creating an app to assist with speech and language therapy to support children with learning how to assemble sentences. The majority of these children have learning or communication related disabilities, and often get distracted or frustrated by learning on paper. This is why our sentence combining app is designed to feel like a game. Sentence combining activities are formatted as multiple choice and fill in the blank questions,

**Students:** Devon Cook; Alicia Lemieux; Ian MacDonald; Mike Davidson; McKenzie Mcgilchrist  
**Principal Investigators:** Steve Griffith & Gerlad Hurdle **Program:** Mobile Application Design and Development  
**Partner:** Dianne MacDonald

## 58. Sitter Advantage App

This project is a hybrid mobile application designed for iOS phones that serves as a tool for baby sitters. The purpose of the app is to provide useful tools, like easy access to a client's information and upcoming tasks as well as rapid contact with Emergency services if required. The app also contains a list of resources useful for babysitters.

**Students:** Nehmat Gereige; Nune Vardanyan; Anna loudovskaya; Paul Harvey; Lindsey Baker;  
**Principal Investigators:** Steve Griffith **Program:** Mobile Application Design and Development  
**Partner:** Brian Presley

## 59. Nepean Synchro / Synchro Ontario

"At swim meets, clubs from around the region, province or country all compete against each other in appropriate categories. The current method of music playback uses obsolete CD technology. This requires each coach to burn a CD, label it and drop it off at the officials table just prior to an event. We are developing a web and mobile application that will simplify this process and automate the entire procedure.

**Students:** Gabriel Dubé; Helen Fan; Nigneshkumar Patel; Chris Oudyk; Harsh Patel  
**Principal Investigator:** Steve Griffith & Gerlad Hurdle **Program:** Mobile Application Design & Development  
**Partner:** Jeremy Atherton

### 60. Ottawa Bird Count Modernization

Rebranding of current website and development of mobile application for collecting bird observation data.

**Students:** Vladimir Tonkonogov; Parisa Saharkhiz; Brittany Serrador; Jan Graham; Justin Bennett

**Principal Investigators:** Steve Griffith & Gerlad Hurdle **Program:** Mobile Application Design and Development

**Partner:** Adam Smith, Ottawa Bird Count

### 61. Web based Program Q&A and information system.

The idea for the project is going to be a questionnaire system that will help future students determine what program would be appropriate for them. This system will help students choose a program pertaining to their skills and interests thus helping students find their skills and interests.

**Students:** Calvin Li; Juan Antonio Villamizar; Gurbachan Singh; Keith Sandy; Matthew Zigman

**Principal Investigators:** Patricia Murphy **Program:** Computer Programmer

**Partner:** Algonquin College ICT Department

### 62. Photo-Dynamic OC Pro Mobile App User Interface Design

This project designed a mobile app that works in conjunction with an innovative dental product called OrthoClean Pro. This device is inserted over the teeth of patients fitted with oral braces and works with safe visible light-activated antibacterial foam to combat tooth discolouration. The mobile app connects the device to the user's home Wi-Fi network and sends weekly digital report cards to the patient, parents, and orthodontists.

**Students:** Ashley Murray; Jonathan Castiglione; Antoniojose Ferreira

**Principal Investigators:** Stefan Dickerson **Partner:** PhotoDynamic Incorporated

### 63. Creative Play Group

The newly designed Creativity lab offers our students invaluable learning opportunities and also provides an opportunity for the Early Childhood Education program to give back to the community. Students have time to develop key knowledge and skills as they interact with children on site.

**Students:** April Geary; Tamara Kirby; Madj Aihararah

**Principal Investigators:** Carol Ann Turcotte & Shawna Enright **Program:** Early Childhood Education

**Partner:** Ontario Early Years

### 64. Wayfinding Strategies for Today's Hospitals

Wayfinding in hospitals can be a frustrating unnecessary obstacle for visitors, staff and patients. The process of wayfinding can be simply defined as "the ability to find one's way without getting lost" (Pati, 2015, pg.44). The project sets out to create wayfinding strategies for implementation.

**Student:** Becky Thayer

**Principal Investigators:** Dorothy Stern **Program:** Bachelor of Interior Design

### 65. Off-Grid Residential Communities

By living off-grid, homeowners produce and monitor their own energy consumption, and are completely self-sufficient. The house itself is autonomous. This project aims to produce a small residential community dedicated to sustainable, off-grid homes that incorporates a modern-day lifestyle.

**Student:** Morgan Richardson

**Principal Investigators:** Kurt Espersen-Peters **Program:** Bachelor of Interior Design

### 66. Youtopia: Wellness & Therapeutic Retreat

This project proposes to create a Wellness & Therapeutic Retreat that serves as a catalyst for all visitors. The retreat focuses on unique therapies and natural remedies to address mental well-being and mindfulness within the visitor. The facility will accommodate and welcome visitors all day and night.

**Students:** Rebecca Weatherall

**Principal Investigator:** Dorothy Stern **Program:** Bachelor of Interior Design

### 67. Big Box Re-use

An adaptive re-use solution for a "one-stop shop" of essential services for the community to use. Centralizing essential services into one location can not only become convenient for community users; it can also contribute to the revitalization of the previously vibrant big box locations.

**Student:** Lori Trask

**Principal Investigators:** Alfred Baucom **Program:** Bachelor of Interior Design

## 68. Out of The Box: Creating a modular design solution system for retail pop-up stores

The focus of this project is on developing solutions to more effectively utilize materials, expenses, and real estate for growing businesses, in both temporary and long term retail solutions. Both consumer's and staff's functional and psychological needs within the retail environment are addressed.

**Students:** Mallory McCarthy

**Principal Investigators:** Alfred Baucom **Program:** Bachelor of Interior Design

## 69. Holistic Health

The purpose of this project is to design a holistic facility that houses multiple complementary and alternative health practices and improves the efficiency and convenience of a patient's experience. It will address comfort through the manipulation of acoustics, privacy and materiality.

**Students:** Amanda Austin

**Principal Investigators:** Dorothy Stern **Program:** Bachelor of Interior Design

**Partner:** Algonquin College

## 70. Improving Airport Waiting Experience by Design

This is a researched guideline for airports to use to improve the comfort, utility of technology, personal security, and enjoyability in international airport waiting areas beyond security.

**Students:** Madeleine Linton-Henderson

**Principal Investigators:** Alfred Baucom **Program:** Bachelor of Interior Design

**Partner:** Madeleine Linton-Henderson

## 71. Informal Settlement's Urban Design

Features the development of urban planning upgrade of informal settlements in Brazil, addressing the resident's needs. It maintains the informal settlement's identity by incorporating a new housing design appropriate for the location with retaining walls, stormwater system, and infrastructure.

**Students:** Erika Barros

**Principal Investigators:** Kurt Espersen-Peters **Program:** Bachelor of Interior Design

## 72. Algonquin College Student Fees

We have been asked to create models and update information for a variety of student fee information. This included reviewing the approaches other school use and proposing a new approach for Algonquin.

**Students:** Brendan Gillett; Lean Ellement; Anthony Kassimatis

**Principal Investigator:** Patti Church **Program:** School of Business

**Partner:** Algonquin's Student Association

## 73. Education Program Effectiveness (EPE)

An applied research project collaborated with KPMG to review College services, identify opportunities to enhance experience, review performance service metrics, and achieve sustainable efficiencies. As a result, the college will streamline operations to develop standardized best practices.

**Students:** Wendy Huang; Lily Szeto

**Principal Investigators:** Sandra Finnigan **Program:** Marketing Research and Business Intelligence

**Partner:** Algonquin College Applied Research and Innovation

## 74. Resilience and Victims of Violence: Understanding Strengths to Enhance Victim Assistance Training

This strength-based, resilience-focused research will explore how victims of violence navigate obstacles and negotiate with themselves and the systems around them as part of their effort to achieve a subjective sense of wellness in life. Findings will be used in training victim service providers.

**Students:** Zein Abboud; Marissa Locke

**Principal Investigators:** Benjamin Roebuck **Program:** Victimology Graduate Certificate

**Partner:** Victim Justice Network (VJN)

## 75. Kinetic Innovation Lab

Algonquin College requested the help of third year Interior Design students to fit-up a business incubator space. The space houses 6 start-up companies in order to foster their growth in the early stages of their business.

**Students:** Joel Gommer; Kirsten Smith; Michaella Taillon; Jill Vander Poel; Jazzmyn Barnett-Isaacs

**Principal Investigators:** Tamara Phillips & Kevin Holmes **Program:** Bachelor of Interior Design

**Partner:** BID Interior Design

## 76. Understanding the Needs of AC Students for Services and Information

An online quantitative survey to understand the needs, barriers and information gathering destinations of first generation students at Algonquin. An online qualitative survey to understand the user experience and issues with information delivery through the Students' Association website"

**Students:** Josh Barr; Szeto Szeto; Olga Dubanevych; Anand Kumar; Isabel Ocampo; Eric Coffin; Bei Zhang; Spencer Frech; Arham Sorangwala

**Principal Investigator:** Nancy Johansen & Richard Leigh-Bennett **Program:** MRBI

**Partner:** 1) AC First Generation Office and 2) The Students' Association

## 77. Quantitative Market Research with Ottawa Businesses and Residents

An online quantitative survey with Ottawa Chamber of Commerce business clients, to explore service awareness, use and future needs. An online quantitative survey with Ottawa residents, to explore brand awareness and preferred marketing channels for Halogen software.

**Student:** Jin Lu; Onosezele Ikekhuah; Ridhima Arora; Emma Blackburn; Karly Nevils; Wendy Huang; Jasmeet Kaur; Alex Shearman; Victor Han

**Principal Investigators:** Nancy Johansen & Richard Leigh-Bennett **Program:** MRBI

**Partner:** 1) Ottawa Chamber of Commerce and 2) Halogen Software

# Contact Us

## Cristina Holguin-Pando

Director  
(Applied Research and Innovation)  
613-727-4723 ext. 6694  
holguin@algonquincollege.com

## Ashley Boyd

Project Coordinator  
613-727-4723 ext. 6619  
boyda@algonquincollege.com

## Julie Sylvestre

Project Officer (Pembroke Campus)  
613-735-4700 ext. 2666  
sylvesj@algonquincollege.com

## Danielle Evong

Administrative Support  
613-727-4723 ext. 5213  
evongd@algonquincollege.com

## Carolyn McCluskey

Budget Officer  
613-727-4723 ext. 5499  
mcclusc@algonquincollege.com

## Eileen Xue

Junior Office Clerk - Multimedia  
613-727-4723 ext. 2522  
xuee@algonquincollege.com

## Kevin Holmes

Project Manager  
(Health & Wellness Research Centre)  
613-727-4723 ext. 3520  
holmesk@algonquincollege.com

## Riccardo Brun del Re

Project Manager (Full Spectra Centre)  
613-727-4723 ext. 5004  
brunder@algonquincollege.com

## John Omura

Project Manager (Design Centre)  
613-727-4723 ext. 2996  
omuraj@algonquincollege.com

## Kerry Milford

Project Manager - Perth Campus  
613-267-2859 ext. 5660  
milfork@algonquincollege.com

## Theodore Mirtchev

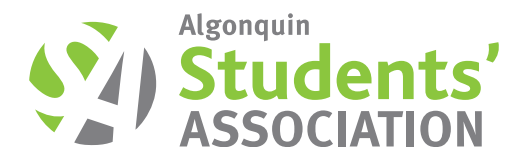
Project Manager (Full Spectra Centre)  
613-727-4723 ext. 6080  
mirtcht@algonquincollege.com

## Alexander Yang

Project Manager  
(Construction Research Centre)  
613-727-4723 ext. 2085  
yanga@algonquincollege.com

# Acknowledgements

The Office of Applied Research and Innovation at Algonquin College wishes to thank our valued supporters.



For general information, please visit our website: [algonquincollege.com/appliedresearch](http://algonquincollege.com/appliedresearch)



@AlgonquinARI



@ACResearch



[linkedin.com/in/acappliedresearch](https://www.linkedin.com/in/acappliedresearch)



Social Sciences and Humanities  
Research Council of Canada

Conseil de recherches en  
sciences humaines du Canada

Canada



**THANK YOU FOR ATTENDING!**

**SEE YOU AGAIN AT:**  
**APPLIED**  
**RESEARCH**  
**DAY** **AUGUST 2016**

**ALGONQUIN**  
**COLLEGE**

Office of Applied  
Research and Innovation