

# *THIS* IS AGRICULTURE

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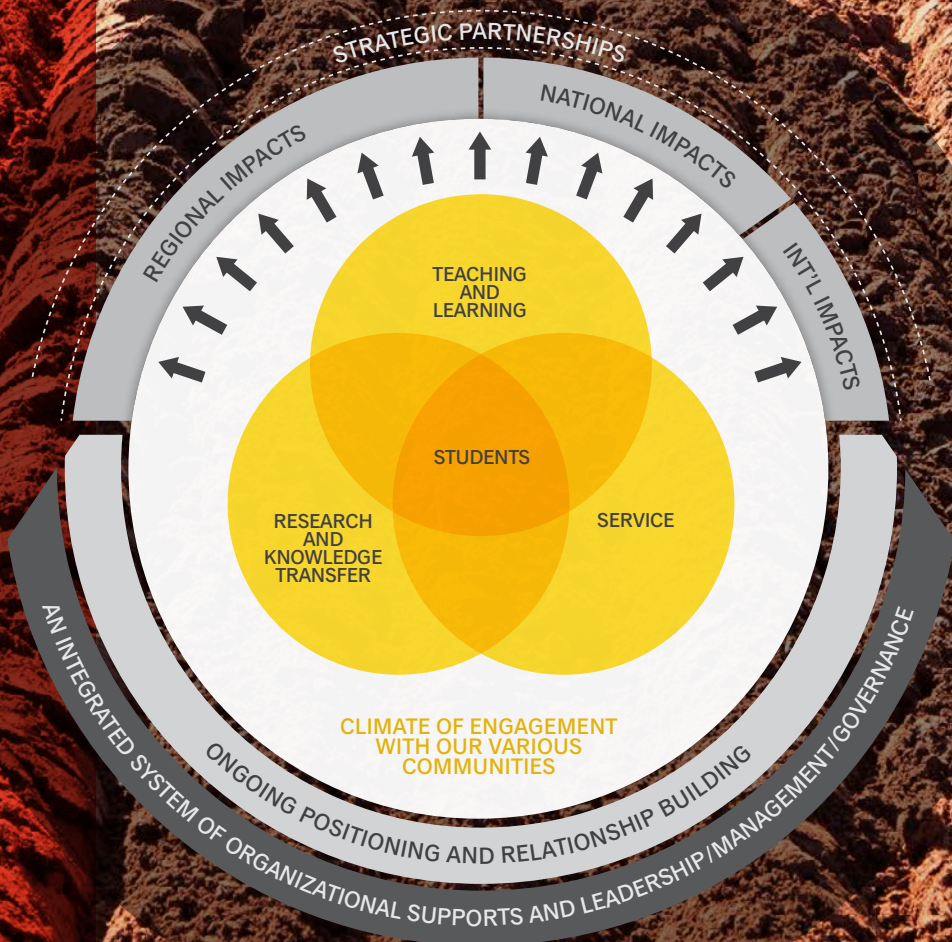
2017–2018 ANNUAL REPORT  
TO THE COMMUNITY

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**DALHOUSIE  
UNIVERSITY**

FACULTY OF AGRICULTURE



# *THIS* IS AGRICULTURE

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## 2017–2018 ANNUAL REPORT TO THE COMMUNITY

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# MESSAGE FROM THE DEAN



**IT'S A GOOD TIME** to be a student at Dalhousie University and a great time to be a student on the Dalhousie Agricultural Campus.

The year 2018 marked Dalhousie's 200th anniversary — a rare and significant milestone. As with any milestone, it provides an opportunity to pause, reflect, celebrate and thank everyone who's made it all possible

As part of our 200th celebrations, we officially launched our Bicentennial Botanical Garden, celebrated the opening of our new Student Learning Commons in the heart of campus, completed the revitalization of our Biomass energy plant, opened a new Landscape Architecture studio, installed a Barley Arch in the Alumni Gardens and worked to complete an Outdoor classroom and Alpine House. These are but a few highlights of the work accomplished over the 2017 – 2018 year.

This incredible year for our campus however, was also tempered by a devastating fire that rendered the majority of one of our main academic buildings, Cox Institute, unusable.

Losing use of the facility meant we had to be creative in how we accommodated our students but we were determined to ensure we continued to provide the exceptional educational experience students have come to rely on.

The tenacity and determination of our campus and support from our wonderful community is what has driven our momentum and will keep us going through the rebuild of Cox Institute.

Please take a moment to learn more about the fabulous work of our faculty, our staff and our students. We are a proud member of the Bible Hill/Truro community and we welcome your comments and feedback.

We are a community, we are a campus, we are a Faculty and we are furthering our mission of showing you and the world: This is Agriculture.

A handwritten signature in black ink that reads "David Gray". The signature is fluid and cursive, with a large, sweeping "D" and a long, horizontal flourish extending to the right.

David Gray  
Dean, Faculty of Agriculture



# TEACHING AND LEARNING



**THE FACULTY OF AGRICULTURE** is now offering a doctoral degree in Agriculture Sciences — the first degree of its kind in Atlantic Canada.

Department of Plant, Food, and Environmental Sciences Professor and Associate Dean of Research and Graduate Studies, Dr. Chris Cutler, played a part in developing the program and is thrilled over what this program will mean for Dal AC.

“Production of PhD students is a key metric in terms of measuring the quality and output of any university,” Dr. Cutler explains. “This is a tremendous opportunity that will enhance the teaching and research at Dal AC.”

The PhD program will allow students to pursue advanced-level knowledge in agriculture and undertake independent research to generate new knowledge, both of which are imperative to the future of sustainable farming. With agriculture currently representing seven percent of Canada’s gross domestic product, the need for high-level research on farming, food production, and agricultural sustainability is at an all-time high.

“Feeding the planet is going to be a massive challenge in the years to come,” Cutler explains. “The provincial and federal governments have both recognized that agriculture is a critical component of the Canadian economy, with great potential for growth from coast to coast. Introduction of a PhD program in agriculture at Dalhousie will help ensure our region stays at the forefront of delivery of top-notch agricultural knowledge, innovation, and personnel.”

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*To develop a dynamic portfolio of programs, courses, support systems and continuing professional development activities that anticipate and meet the needs of the agricultural and food industries, inform and implement government priorities, and engage our learners in a distinctive experience that exceeds expectations.*

#### **HIGHLIGHTS:**

- Donor-supported scholarships and bursaries provided 225+ awards totaling over \$360,000
- Nine new undergraduate awards were established by donors, including three supporting graduate students
- Over \$2.8 million in gifts received to enhance the student experience, including support for programming, awards, and infrastructure
- Development and approval by MPHEC of an Honors Program in Bioveterinary Science;
- A team of four second-year engineering students competed in the Canadian Engineering Competition in Toronto bringing home the top prize for the second year in a row.
- A two-day International Smart Farming Seminar was held on campus to advance the sustainable development and adoption of smart precision agriculture in Atlantic Canada. Sustainable farming and precision agriculture helps farmers to make production systems more efficient while reducing costs. Research incorporates agrochemical, technological and ecological approaches to develop an innovative approach to managing high value crops.
- An Outdoor Classroom was constructed to acknowledge the 200th anniversary of Dalhousie University. The classroom is a tiered, outdoor teaching space for students from all disciplines, carved into the centre of campus. An Alpine House will be added.
- Work-integrated learning opportunities expanded for students under the guidance of Joy Galloway Jones to include internships, externships, applied research projects and service learning.
- An Indigenous Student Access Pathway was introduced as a one-year program exclusively for First Nations, Metis and Inuit student who would not otherwise be eligible for admissions and who would benefit from dedicated supports while transitioning to a university environment.
- Awtiget Summer Camps, meaning 'clearing a path' in the language of the Indigenous Mi'kmaq community, will be offered to Indigenous students aged 12 – 16 years of age over a weekend to immerse them in university life. Students will attend classes, stay in residence and experience extra-curricular activities. Applications will be available in early 2019.
- Dr. Gordon Price was named Faculty Graduate Program Coordinator for a two-year term.
- New programs through Extended Learning included "Landscape Nova Scotia" – an ESL program for new students; "Positive Animal Training" – an online, non-credit program.



# RESEARCH AND KNOWLEDGE

**CHRISTMAS CAME EARLY** on the Dalhousie Agricultural Campus as the National Christmas Tree Research Centre (CRC) celebrated the first successful development and licensing of SMART Balsam Fir Technologies.

The Centre, funded in large part through the Atlantic Canada Opportunities Agency's Atlantic Innovation Fund, has licensed three commercial products and technologies to help sustain Atlantic Canada's Christmas Tree and Greenery Industry.

"The commercialization of this new Christmas Tree research is proof that innovation truly is happening in every industry," said the Honourable Navdeep Bains, Minister of Innovation, Science and Economic Development and Minister responsible for the Atlantic Canada Opportunities Agency. "These new products and technologies mean new opportunities to export SMART Christmas trees earlier in the season and to a wider range of international markets. That translates to more well-paying, middle class jobs in Atlantic Canada."

A true industry partnership, Dr. Lada and his team have developed products and technologies to enhance needle retention as well as produce what they call a "SMART Balsam", which epitomizes an ideal tree - full, sturdy architecture, unique fragrance, blue-green needles and will retain its needles for up to three months, if properly handled.

The primary technology developed in Dr. Lada's lab is being licensed to members of the Nova Scotia Christmas Tree Coop. Dr. Lada's research program developed embryos that are being used to grow SMART Christmas trees that lose less needles after harvest. This will benefit the industry by increasing the marketability of real Christmas trees as needle loss is a major contributing factor to consumers choosing artificial trees over natural. Two additional pending technologies include a delaying agent or spray and a protocol for post-harvest storage and transport.



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*To undertake innovative research, to implement the Faculty of Agriculture's Strategic Research Plan and provide counsel that sustains communities.*

#### **NEW FACULTY:**

- Dr. Brandon Heung, an assistant professor in geospatial informatics primarily focuses his research on digital soil mapping and is excited for the field to become more widely recognized across Canada.
- Dr. Younes Miar, an Assistant Professor and Industry Research Chair in Mink Genomics at Dalhousie University Faculty of Agriculture, is an accomplished geneticist committed to improving the mink industry in Canada.
- Dr. Richard leBrasseur brings extensive knowledge and expertise on landscape architecture and multi-functional landscapes which tackle important issues facing Nova Scotia and beyond, such as climate change, urbanisation and coastal resilience.

#### **HIGHLIGHTS:**

- Two new initiatives with industry partners were initiated in 2018: a McCain Foods Potato Industry Research Chair (Dr. Ahmad Al-Mallahi), which includes funding for two PhD students and a Poultry Research Chair (Dr. Deborah Adewole), in partnership with the Atlantic Poultry Research Institute.
- The National Christmas Tree Research Centre, under the leadership of Dr. Raj Lada, celebrated the first successful development and licensing of SMART Balsam Fir Technologies. These innovative technologies will benefit the \$100 million Christmas tree industry in Atlantic Canada by increasing the marketability of real Christmas trees while contributing to the health of the local agricultural economy.
- Dr. Gordon Price led a large-scale project to compost the bones of a 63-foot female blue whale. The researchers are composting the whale bones to remove the grease, tissue and oils that are deeply embedded in the whale's skeletal structure so the bones can then be properly mounted and displayed. In addition to the thorough cleanse, the bones are being weighed, catalogued and archived digitally. The process of composting the whale bones is expected to take anywhere from two to three years.
- The Agricultural Green Shoots program was established to offset losses to research programs by the Cox Fire. These funds provided \$630,000 to impacted researchers. Additional support of up to \$150,000 from the President's Office is supporting MSc and PhD students whose programs have been delayed by the fire.
- The Faculty is proud to have two of its members receive prestigious awards in 2018: Dr. Sean Myles was elected to the Royal Society of Canada College of New Scholars, Artists and Scientists and Dr. David Burton was appointed University Research Professor at Dalhousie.

# COMMUNITY ENGAGEMENT



**NAMED IN HONOUR** of Dalhousie's 200th anniversary in 2018, the Bicentennial Botanical Garden is known as the Faculty of Agriculture's largest classroom, providing many hands-on learning opportunities for students and researchers alike.

The gardens received their new name on August 25 at a commemorative ceremony that featured the planting of a Black Ash, or 'Wisqoq' in Mi'kmaq. The tree was designated as threatened under the Nova Scotia Endangered Species Act in 2013, and the Faculty of Agriculture has been working in partnership with Mi'kmawey Forestry as part of their conservation efforts.

The Bicentennial Botanical Garden comprises 11 hectares of unique and diverse features including wide-ranging plant collections as well as the largest Rock Garden east of Montreal. Shade, herb and bulb gardens, a butterfly meadow, an apple orchard and more beautify the busy campus.

"Our entire campus environment becomes a classroom of learning, conserving, sharing, growing and socializing," said Dean and Campus Principal David Gray.

The Bicentennial Botanical Garden received a Canada 150 Garden Experience designation last year in celebration of Canada's 150th birthday and is featured on the Nova Scotia Provincial Garden road trip.





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*To engage actively and responsively with our local community and the agricultural communities of the Atlantic Provinces, Canada and beyond.*

### **HIGHLIGHTS:**

- International Development week celebrated Apuknajt — the Mi'kmaq February Feast — to honour the unceded Mi'kmaq territory on which the AC stands and bring the community together over an important aspect of Nova Scotian and Canadian history.
- The Faculty of Agriculture offered three Aggies in the Community events aimed at engaging in a fun way with the Truro/Bible Hill community while learning about agriculture. Events included a New Year's Day Skate on the Caldwell-Roach/Kings Mutual Insurance Ice Surface as well as two chef-curated dinners.
- In celebration of Dal's 200th anniversary, the Agriculture Alumni Association installed a barley Arch at the entrance to the Alumni Gardens, symbolizing excellence in academics, leadership, research and innovation.
- The Faculty of Agriculture continued its partnership with 4-H Canada by hosting the 4-H Canada Science Fair on campus.
- The Faculty of Agriculture partnered with the Soil Conservation Council of Canada and Stanfield's Ltd. to host a 2018 Soil Your Undies campaign to educate the community about soil conservation.
- Dr. Temple Grandin spoke on campus as part of the 200th anniversary Belong Forums.
- Feeding our community was the theme of our Community calendar which was distributed to members of the Bible Hill community by our student athletes.
- The John Higgins Memorial Garden was opened as part of the Alumni Gardens. This tiered, paved space includes a decorative steel pergola, made possible by donations from the Class of '75.
- The Faculty of Agriculture continued its longstanding partnership with the Department of Agriculture by partnering to present the Amazing Ag Zone race to close to 500 Grade 7 students. The goal of AgZone is to promote the science of agriculture and highlight its educational pathways.
- The Faculty was proud to act as parade marshal for the Village of Bible Hill's Canada Day parade themed Dalhousie's 200th anniversary.
- More than 1000 visitors came to campus for our annual Community Day celebrations.
- The Faculty of Agriculture hosted an inaugural BioBlitz inviting the community to participate in a rapid survey of the biological diversity within a fixed area and time.
- The Community Education Office develops and implements community education programming and events designed to promote a broad understanding of agriculture to educators, students and the community. Total academic visitors to campus/recipients of classroom visits (including all grade levels): **1438** Total non-academic visitors to campus (Girl Guides, 4H, summer camps, etc): **736** Estimate of contacts made at public and target audience events (ie. Ag Awareness events, on and off-campus 4H events, teacher PD days, etc): **1825**

# REGIONAL LEADERSHIP AND IMPACT

A photograph of two women in a greenhouse. The woman in the foreground has blonde hair, wears glasses, and is smiling broadly while looking at a plant. The woman behind her has brown hair and is also smiling. They are surrounded by various green plants, including a large leafy plant on the left and some red flowers in the lower left corner. The background is slightly blurred, showing more plants and the structure of the greenhouse.

**HORTICULTURE IS MORE** than simply growing plants.

Any avid gardener will likely tell you that horticultural activities build self-confidence, encourage perseverance and promote a calm, relaxed environment. It's these qualities that make the Horticulture Skills Training Program an extremely popular program amongst the women at the Nova Institution for Women in Truro.

Dalhousie University Faculty of Agriculture is pleased to once again partner with the Correctional Service of Canada to offer a horticulture skills training program to women at Nova Institution to teach them many horticulture skills that will be useful outside the garden.

"We are so pleased to have this program up and running again," explains Lana Bos, Education and Training Developer with Extended Learning at Dal AC. "It is such an impactful program that each and every day, you get to see positive changes and growth in the women."

Located in Truro, the Nova Institution is a multi-level facility that houses minimum and medium-security inmates. It is one of six federal facilities for women across Canada. The Horticultural Skills Training Program teaches women offenders vocational and technical skills to use in transition to employment post-release. The program also promotes and enhances life skills, including self-confidence, healthy habits and healthy eating.

The program, originally developed in 1995, is delivered on-site at Nova and facilitated through Extended Learning at the Faculty of Agriculture. Amy Unicom, Program Facilitator with Extended Learning, will be the new facilitator this year, with oversight from Lana Bos who taught the course for 12 years.




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*Through education, training and research, be recognized and valued by key agricultural communities across the Atlantic Provinces as the leading provider of world-class education, training and research in the field of agriculture.*

### **HIGHLIGHTS:**

- Extended Learning, Executive Education at the Dalhousie Faculty of Management and the Atlantic Agricultural Leadership Board revitalized the LEADAtlantic program — a leadership development program for Agriculture and Aquaculture.
- The Faculty of Agriculture will work closely with Bukalasa Agricultural College, Uganda's top Agricultural Technical Vocational Education and Training Institute and industry partners to develop new competency-based curriculum focused on practical skills. The effort is part of the five-year, US \$100 million Uganda Skills Development Project, funded by the World Bank, to overhaul education and deliver training programs geared to meeting the needs of industries, including agriculture.
- The International Centre welcomed Mr. Jafar Sadek as Global Education Advisor at the Faculty of Agriculture.
- The Faculty of Agriculture is proud of its 10-year partnership with the Correctional Service of Canada whereby the Faculty offers a horticulture skills training program to women at Nova Institution.
- The significant achievements of the Precision Agriculture Research Team are what ultimately led to the implementation of the Wild Blueberry Harvester Efficiency Program. Precision Agriculture looks at many variables in farming practices that make farming more efficient, accurate, controlled and profitable when it comes to growing and cultivating crops.
- Extended Learning added two new cohorts of students into the Certificate in Technology Education program. This program has graduated over 175 Nova Scotia teachers since 2006.
- The PEI Farm Technician celebrated its 10-year anniversary. Thanks to the only farm technician apprenticeship program in Canada there are now 24 certified journeypersons on PEI.
- Over 1300 enrollments in credit and non-credit program offered by Extended Learning.
- EL staff prepared and delivered two seminars at the Canadian Association of University Continuing Education national conference

# MANAGEMENT AND GOVERNANCE



**STUDENTS NOW HAVE ACCESS** to the new state-of-the-art Student Learning Commons (SLC) that's focused on enhancing academic success.

The SLC, which is located in the recently vacated space above the MacRae Library, is a mix of open spaces with a modern yet cozy atmosphere. Soft seating for reading, tables for working and bookable study rooms of varying sizes allow students to gather, relax and socialize. Bold colors stimulate creativity while the furniture is fresh and bright. The large windows allow natural lighting and a 14-foot living wall welcomes you in the vestibule as you enter.

Local artist and Manager of Indigenous Students at Dal AC, Art Stevens, created a mural marking the history of the Mi'kmaq which has a large presence in the SLC and acknowledges the campus' student diversity.

The SLC is designated as a place for relaxing, studying, socializing and accommodating the many varying needs of Dalhousie Agricultural students. The self-serve Barley Café will provide students with the opportunity to refuel while studying, and a student meeting room, generously funded by Farm Credit Canada, is equipped with videoconferencing abilities. Large Program Rooms, which students are able to book, include integrated audio visual systems. A Quiet Room and The National Centre for Truth and Reconciliation Hub will also be located in the CIBC Multicultural Centre within the SLC.

The need for a space like the SLC was raised by the students and identified during a Campus Master Planning Process. The entire project was a team effort with input from various members of the campus including the Dean, the University Librarian, Dal Libraries staff, Dalhousie Agricultural Students' Association (DASA) and Student Success and Ancillary Services.



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*Ensure best practices are in place by enabling the achievement of strategic aims, value for money, sustainability and operational efficiency within the Faculty.*

**HIGHLIGHTS:**

- The Campaign for Agriculture continues to gain momentum. One of the key campaign priorities, The Student Learning Commons (SLC), opened in August 2018, providing students and the campus community with much needed collaborative space, program rooms, meeting and boardrooms, a café, multi-cultural centre, and study space. Campaign efforts are focused on continuing to raise the funds for this exciting and important new space while building support for Farm Renewal projects, Research Chairs and continuing to grow support for students through scholarships and awards. Over \$2.8 million in gifts were received this year.
- The Awtiget Summer Camp enables students in Grade 8-11 to learn first-hand about post-secondary education and envision future educational opportunities. Farm Credit Canada has provided \$30,000 over the next three years to support this innovative program for Indigenous students.
- Dr. David Gray was reappointed for a second term as Campus Principal and Dean of the Faculty of Agriculture, effective July 1, 2018 to June 30, 2023.
- Resources were allocated for the implementation of Dalhousie's SharePoint document management solution to help streamline efficiencies within units.
- The Senate Review Committee conducted a review of the Faculty of Agriculture as part of the Senate's program of cyclical reviews of senior academic units in the university. Review was conducted in 2017/18 and followed the Senate Reviews of Faculties Policy and Procedures.
- A new Landscape Studio, featuring a drafting studio, gallery, main studio and faculty offices opened this fall providing students with an opportunity to design projects and collaborate with others. The first cohort of Chinese students from the Fujian Agriculture and Forestry University in China in LA will be among the first to use this space.
- A new Biomass plant officially opened in November. The renewed plant and district energy system, a \$26.5-million project that began operation this past summer, burns biomass fuel in a thermal oil heater. This heat moves a new 1 MW turbine to create electricity — an organic rankine cycle (ORC) system that's the first of its kind on a North American university campus. It's technology that places Dal on the leading edge of sustainable technology and renewable energy practices.



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