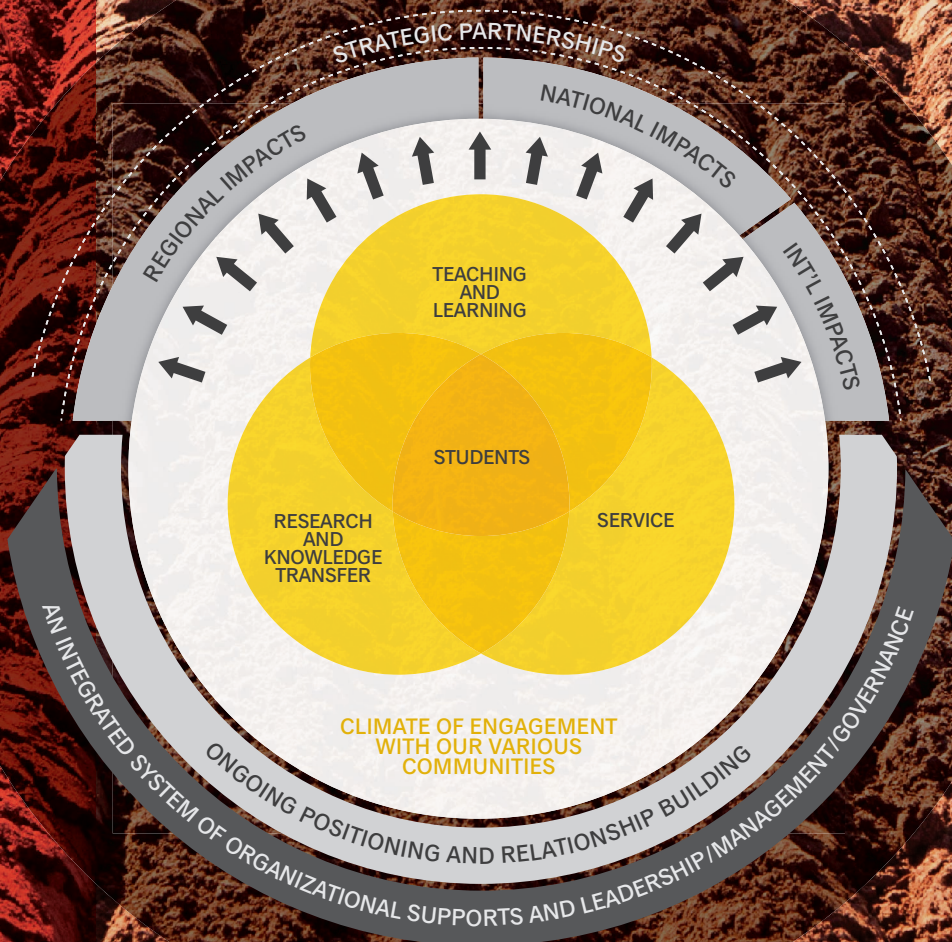


THIS IS AGRICULTURE

2016–2017 ANNUAL REPORT
TO THE COMMUNITY





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MESSAGE FROM THE DEAN



IT HAS BEEN SAID that in the next 50 years alone we will need to produce as much food as has been consumed over our entire human history! This is a stunning fact and one that drives home how important agricultural education and research is to the coming century.

With agriculture currently representing seven percent of Canada's gross domestic product, the need for high-level research of farming, food production and agricultural sustainability is at an all-time high.

To help address this challenge, the Faculty of Agriculture will be offering a new doctoral degree in Agriculture Sciences — the first degree of its kind in Atlantic Canada. This 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.

The Faculty is also leading a new skills development project in Uganda. This exciting new collaboration with the Bukalasa Agricultural Training Institute (BAIT) the East African country's top agricultural college, will see the Faculty work closely with BAIT and industry partners to develop a new competency-based curriculum largely focused on practical skills. Another example of helping others to help themselves.

The Faculty is also focusing on more work integrated learning opportunities for our students. A manager was hired for co-op internships and cooperative education development. Work integrated learning opportunities will include internships, externships, applied research projects, cooperative education and service learning,

The first international Aim to Grow conference was held on campus. This initiative will study the possibility to further develop innovative Controlled Environment Agriculture in Atlantic Canada, contributing to more year-round local food production, food quality and safety, food sovereignty and nutritional security.

We were proud to partner with Acadian Seaplants Limited (ASL) on a 36-month research project with a total project cost of ~\$1,400,000. ASL is contributing \$468,000 with Mitacs, a national organization that designs and delivers research and training programs in Canada and provincial funding totaling 440,000. In addition, the Natural Sciences and Engineering Research Council of Canada supported \$468,000. The project is the largest grant of its type east of Montreal and will help train a total of eight post-doctoral fellows, three PhDs and three MScs over the three years.

Our Campaign for Agriculture is gaining momentum with major commitments made by donors and industry stakeholders to the Student Learning Commons, farm renewal, graduate scholarships and research chairs.

These are but a few highlights of the work accomplished over the 2016 — 2017 year. 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.*



David Gray
Dean, Faculty of Agriculture

TEACHING AND LEARNING



AFTER WINNING the Atlantic Engineering Junior Design Competition held at the Université de Moncton in early February, a team of four second year students — Alex Place, Alec McOnie, Nathaniel King and Patrick Wells — from the Faculty of Agriculture represented Dalhousie at the Canadian Engineering Competition in Calgary.

The Canadian Engineering Competition was hosted by the University of Calgary's Schulich School of Engineering from March 2-5 and welcomed engineering undergraduates from coast-to-coast to compete in one of seven competition categories.

The Faculty of Agriculture team competed in and won the Junior Design category which challenges competitors to design and build a prototype to address a technical problem within five hours.

Engineering Chair Peter Havard says the department is thrilled with the team's success.

"This is only our second year participating in competitions and then winning the regionals and continuing that success at Nationals is an amazing success for our team," he says. "They have inspired our first-year students to follow in their footsteps next year. I thank DASA, the Dean's Office and PDI Engineering for their support which made the trip to Calgary possible."

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:

- A full proposal for a PhD in Agricultural Sciences was submitted to University Senate and received approval in December. Specializations will include Animal Science, Plant Science, Soil Science, Agricultural Economics, Agribusiness, Agricultural Technology, Food, and Environment.
- New graduate program proposals under development include a Masters in Applied Science in Agricultural Engineering and revision and expansion of the existing MSc (Agr) program.
- Eight classrooms and one teaching lab were equipped with touch display monitors with enhanced lines of site for students.
- A new internship course was approved and made available as an elective to all degree students. The course was offered for the first time during summer 2017.
- Manager hired for co-op internships and cooperative education development. Work integrated learning opportunities will include internships, externships, applied research projects, cooperative education and service learning.
- A formal agreement in place for student exchange opportunities with Hartpury College, University of the West of England, UK and Chengdu University.
- Development of a collaborative minor in Innovation and Entrepreneurship with other faculties at Dalhousie including Computer Management, Engineering and Science.
- Development of an innovative pathway proposal for Indigenous students. Working on a pilot program for September 2018.
- The Faculty of Agriculture established an External Indigenous Advisory Committee to assist in guiding future Indigenous initiatives on campus. The committee has representation from the Confederacy of Mainland Mi'kmaq which represents 7 of 8 Mainland Nova Scotia First Nation communities, the Native Council of Nova Scotia, Mi'kmaw Kina'matnewey Education Authority and the Mi'kmaw Conservation Group.
- At total of 34 Faculty of Agriculture Students participated in International mobility placements including 4 internships (1 Research) to Ethiopia, 14 in Field Courses to South Africa and Scotland, 3 University Wide Exchanges and 13 IFB Students to Netherlands.

RESEARCH AND KNOWLEDGE



FACULTY OF AGRICULTURE researchers are well on their way to helping the Canadian farming sector become a world leader in the development and use of clean and sustainable agricultural technologies and practices.

Member of Parliament Bill Casey (Cumberland—Colchester) announced a \$1.7 million investment to develop technologies, practices and processes that can be adopted by farmers to reduce greenhouse gas (GHG) emissions.

This project is among 20 projects being delivered through the \$27 million Agricultural Greenhouse Gases Program (AGGP), a science-based program to help the agricultural sector adjust to climate change and improve soil and water conservation by developing new farming practices and methods. It also will help farmers increase their understanding of GHG emissions.

Faculty members David Burton and Derek Lynch at the Faculty of Agriculture are working directly with the agricultural community to assess soil health, carbon storage capacity and soil nitrogen supply as a basis for greenhouse gas mitigation planning.

This research will go a long way to increase the resiliency of Atlantic Canadian soils to climate change and extreme weather events which will be of broad benefit to the agriculture sector across Canada.



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

HIGHLIGHTS:

- Dr. Stefanie Columbo joined the Faculty of Agriculture as an Assistant Professor and was appointed a Canada Research Chair Tier II in Aquaculture Nutrition.
- Killam Post-Doctoral Fellow Dr. Paul Manning working with Dr. Chris Cutler.
- 71 graduate students, 18 PhD students
- 60 per cent success rate for NERSC Discovery grants.
- 30 per cent of researchers currently hold Tri-Council funding. Tri-Council funding represents 44 per cent of the total research grant funding received by the Faculty of Agriculture.
- International research and development projects, considered as research contracts, valued at \$2.4 million per year.
- Annual publications for the Faculty of Agriculture range from 110–125 papers per year, with one-third of these papers in journals ranked in the top 10 per cent of all journals.
- MSc (Agr) program expanded to include specialization in Agribusiness, Agricultural Economics and Rural Studies.
- An interactive session was developed for the Nova Scotia Federation of Agriculture Council of Leaders to determine skill sets and research requirements for an evolving industry.
- Industry supported research chairs in Precision Agriculture and Mink.
- Acadian Seaplants Limited (ASL) partnered with the Faculty of Agriculture for a 36-month research project with a total project cost of \$1.4 million. ASL is contributing \$468,000 with Mitacs, a national organization that designs and delivers research and training programs in Canada and provincial funding totaling 440,000. In addition, the Natural Sciences and Engineering Research Council of Canada supported \$468,000. The project is the largest grant of its type east of Montreal and will help train a total of eight post-doctoral fellows, three PhDs and three MScs over the three years.
- Dr. Qamar Zaman, in partnership with Doug Bragg Enterprises, received \$1.53 million from NSERC for his research on the automation of blueberry harvesters to improve yield and minimize operator stress through precision agriculture technologies.

COMMUNITY ENGAGEMENT



IN THE SPIRIT of acknowledging the resilience of the Indigenous Mi'kmaq people and their language the Faculty of Agriculture officially renamed River Road on the Agricultural Campus to "Sipu Awti" reflecting the literal Mi'kmaq translation of its name.

"By making this change we are furthering our efforts to be a welcoming and inclusive environment for all learners and one in which our indigenous students can see their community honoured and reflected," explained Dean David Gray.

The word Sipu, pronounced "see boo", is the Mi'kmaq word for "river." Rivers and water, as an element, are recognized by the Indigenous peoples as sacred and are linked to both physical and spiritual health.

This is the second in a series of initiatives the Faculty of Agriculture has undertaken to acknowledge a shared history between Dalhousie University, the Faculty of Agriculture and the Millbrook First Nation community. The Faculty is also developing a series of co-curricular activities on campus with an aim of increasing Indigenous cultural awareness and inclusivity. The incorporation of Indigenous perspectives and ways of knowing in curriculum, policy and on campus landscapes will ensure administrators, faculty and staff have a broader understanding of Aboriginal culture, values, traditions and customs.

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

HIGHLIGHTS:

- Launch of Aggies in the Community — events aimed at engaging in a fun way with our community while learning more about agriculture. Four events included Skate On at the Truro Civic Square, Sip & See events in the Valley and Stewiacke and the Antique Farm Equipment Museum in September.
- Agriculture comes to Town — Annual Community Day activities, traditionally held on the Ag Campus, moved to the centre of town at the new Civic Square location to engage one-on-one with our community.
- The Faculty of Agriculture re-named River Road on the Agricultural Campus to Sipu Awti — reflecting the language of the indigenous Mi'kmaq community. The word Sipu, is the Mi'kmaq word for river. Rivers and water, as an element, are recognized by the Indigenous peoples as sacred and are linked to both physical and spiritual health.
- The Dalhousie Agricultural Campus Botanical Garden was the proud recipient of a 'Canada 150 Garden Experience' designation.
- Entrepreneurial summer camps were offered to students aged 11–13 through Cultiv8 and the Faculty of Agriculture to provide budding entrepreneurs with an opportunity to sharpen their skills, meet mentors and pitch ideas.
- Two Blanket exercise were offered on campus. The Blanket Exercise is a hands-on opportunity to learn about the history of the Indigenous-settler relationship in Canada.
- The Seed Lending Library had 179 registered users and introduced over 2300 seeds into the community. The Library also hosted several visiting summer camp groups for biodiversity and seed workshops including: CNWRC's Girl Power Camp, Francophone Camp, & Tim Horton's Children's Camp as well as providing Seedy Saturday family programming events.
- Conference Services continues to build the Stay at Dalhousie brand, seeing a 132 per cent increase in summer tourist business in the 2017 season
- 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. Highlights this year included offering a six-week science-based exploratory to Redcliff Middle School and hosting 270 youth on campus from the Tim Hortons Children's Camp for the first time. The office partners with the provincial Department of Agriculture to host a series of agriculture awareness events, including a celebration of Canada's Agriculture Day at the Colchester-East Hants Public Library for the first time in February 2017. The office engaged with just under 2000 members of the community through school and public outreach activities over the past year.
- 104 agricultural diploma graduate students were provided with start-up grants to start their own agricultural business, promoting entrepreneurship and contributing to developing the commercial sector in Ethiopia.

REGIONAL LEADERSHIP AND IMPACT



OVER THE NEXT THREE and a half years, the Faculty of Agriculture will work closely with Bukalasa Agricultural College, the East African country'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 funding is in the form of a World Bank loan administered through the country's Ministry of Education and Sport.

"It's a wonderful project. Dalhousie is a partner in building tomorrow's Uganda," says distinguished humanitarian Narinder Sharma, who was hired by the Faculty of Agriculture to oversee an advance team preparing for the launch of the project. Sharma, who spent decades working for UNICEF (including five years in Uganda), says agricultural education "has always been a challenge" there. The population of 40 million is mostly rural, with subsistence farmers making up most of the workforce.

The project is multi-faceted extending far beyond curriculum, to operations and physical assets too, helping BAC become a Centre of Excellence. The intention is for them to develop the skills and capacity to train others, so smaller colleges and vocational technical institutes will come to them to learn.

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:

- Donor-supported scholarships and bursaries provided 225 awards totaling over \$300,000
- Four new student awards were established by donors, including two supporting graduate students
- Gifts received (<\$50,000): \$326,761
- Gifts received (>\$50,000): \$650,000
- Commitments: \$1,310,000
- The Faculty of Agriculture participated in the Global 4-H Network Summit with more than 450 delegates from over 25 countries for four days of programming.
- The first international Aim to Grow conference was held on campus. The initiative will study the possibility to further develop innovative Controlled Environment Agriculture in Atlantic Canada, contributing to more year-round local food production, food quality and safety, food sovereignty and nutritional security.
- An Industry Liaison and Innovation officer was hired for the Agricultural Campus with a focus on Agriculture and Aquaculture.
- The first ever Ethiopian National ATVET conference, entitled “ATVET, the door to improving agriculture, improving lives” was held in April 2017. The conference brought together 206 participants from six countries, to share their experiences, technologies and teaching and learning methodologies and to debate on future development and role of ATVETs in agricultural transformation.
- Extended Learning offered 50 open enrolment courses to 840 registrants, an increase from the previous year in such courses as Master Gardener, Bulk Milk Graders, Bee Keeping, Pesticide Training, Meat cutting (basic and advanced) and Tractor Safety.
- Extended Learning added one new cohort of students within the Certificate in Technology Education program; two more cohorts will be added this coming year. The PEI Farm Technician program now has over 20 active apprentices, with 15 Certified Farm Technicians to date.
- Extended Learning provides customized training to meet specific skills development needs of agricultural as a result, a Sheep handling course was provided to the Department of Environment and EL coordinated space for euthanasia training for the Egg Farmers of Nova Scotia.
- The \$3+Million Uganda Skills for Development Project (USDP) funded through the World Bank was contracted with the Ministry of Education and Sports twinning Dalhousie University with Bukalasa Agricultural College to establish the leading ATVET as a Centre of Excellence in Agricultural Competency Based Education & Training in Uganda.
- The Faculty of Agriculture completed the \$400,000 C-EFE project at St. Vincent & the Grenadines Community College establishing a new certificate program in Food Production supported by a new innovative food production lab and skilled faculty.
- 21 Dalhousie faculty, staff and project partners provided 7 trainings to 80 Agricultural college faculty and staff through the ATTSVE project in Ethiopia.

MANAGEMENT AND GOVERNANCE

THE AGRICULTURAL CAMPUS grounds are a source of learning, pleasure and pride for the university and broader community and have taken centre stage in a recently approved Campus Master Plan.

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

The Faculty of Agriculture on the Dalhousie Agricultural Campus recently undertook a Campus Master Planning process gaining approval from the Board of Governors in the spring of 2017. A first for the campus, the report is intended to act as a framework for the Faculty as it's academic programs and physical space grows and develops over the next few years.

“Renewal and investment is essential to continue to provide world class facilities for teaching, research, working and living,” explains Dean Gray. “Our plan will guide development decisions as campus evolves from periods of transition to sustainability and growth.”

Highlights include a new Student Learning Commons, replacement of the Feed Barn, Atlantic Agricultural Discovery Centre, a landscape plan and much more. The full Master Campus plan can be viewed online.

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 Faculty of Agriculture undertook a Campus Master Planning process gaining approval from the Board of Governors in the spring of 2017. A first for the campus, the report is intended to act as a framework for the Faculty as it's academic programs and physical space grows and develops over the next few years.
- The Campaign for Agriculture is gaining momentum with major commitments made by donors and industry stakeholders to the Student Learning Commons, farm renewal, graduate scholarships and research chairs.
- Unique in-kind gifts made to Campus include a HotRot composting system, rare and unique plants for campus gardens and feline leukemia tests supporting the feral cat health program 300 Felines.
- Negotiated with the Provincial Government in relation to a three-year funding agreement for the Faculty along with an accountability framework
- Developed guiding principles for the implementation of user fees in the Faculty
- Restructured campus snow removal activities
- New H & S committee structure for the Campus implemented
- Campus hazardous waste removal process developed and implemented
- Creation of a campus health and wellness committee following campus consultation session and review of Quality Work Life survey results

