

AGRICOLA

FOR ALUMNI AND FRIENDS OF DALHOUSIE'S FACULTY OF AGRICULTURE

SPRING 2019

WOMEN IN AGRICULTURE: SHATTERING THE GLASS CEILING

MEET SOME OF OUR SHINING STARS

A STICKY SUCCESS

ALEX CROUSE (Class of '82)

PAGE 28

OPPORTUNITIES OF A LIFETIME

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May 10

Community Day

July 18

Dean's Reception, NB

October 3

Dean's Reception, PE

October 24

Homecoming

October 17-19



Community Day 2018

AGRICOLA

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**DALHOUSIE
UNIVERSITY**

FACULTY OF AGRICULTURE

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**“Choose a job
you love, and
you will never
have to work a
day in your life.”**

Alisha Johnson

Editor, AGRICOLA

Alumni Relations, Dalhousie Agricultural Campus

Returning to the office recently, after a few days of meeting alumni at an industry conference, I was recalling the people I met and the stories they shared. A colleague commented how interesting my job is and how fortunate I am to have such experiences. I couldn't agree more. For the most part (because come on, we all have hard days), what I do doesn't feel like work.

Preparing for this issue, I spoke with a lot of amazing alumni, particularly, women (wait till you read deeper) about their work. Even though many conversations were held over emails, it was obvious they felt the same –they truly love what they do too! The passion that shone through in some emails had me beaming at my desk (and sharing more stories with my colleagues).

How lucky are we!

I like to think it has something to do with our connection to agriculture. What an exciting and rewarding (albeit challenging), field to be in.

When we started brainstorming for this issue, we found ourselves discussing the evolution of agriculture and ended up stuck on the theme of the contributions made by women. While the roles of women have changed over the years (and this is important to recognize), we wanted to showcase the diversity of the roles they fill today, pay tribute to the impacts of their leadership and shine a spotlight on the differences they make. More women–than ever, are playing key roles in agriculture and their work is critical.

These women all started in the same place – with an education at the Nova Scotia Agricultural College. And while their careers have gone in so many different directions, you will note similar themes, including a whole lot of pride and passion for what they do.

I always enjoy the time I spend at “work” interviewing alumni for stories (meeting new alumni is one of my favourite parts of the job). But I will admit, the days I spent going back and forth with the women featured within these pages, were especially fulfilling.

I really hope you enjoy this issue of the Agricola News!

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Dr. David Gray

Dean, Faculty of Agriculture
Principal, Dalhousie Agricultural Campus



Food is powerful

Food brings people together, shapes our memories and empowers our communities

Women have always had and will continue to have an incredibly important role in agriculture. This month as we celebrate International Women's day, we shine a spotlight on our alumni who are having an important impact on the work we do.

What is both exciting and well overdue is that we are seeing more women in leadership roles in agriculture. We want our agricultural sector to be competitive internationally and by recognizing the crucial role that women play in the industry and by actively encouraging women to take their rightful place as leaders, we are increasing our competitive edge substantially.

Currently, the ratio of female to male students studying on the Agricultural Campus is roughly 60/40. This trend is reflected amongst graduate students as well. Considering the fact that agriculture has historically been a male-dominated discipline, this is something of which we are very proud.

Diversity should be encouraged; diversity makes us stronger.

In this issue you will learn more about the broad range of careers on which our alumni are having an impact including in government, farming, veterinary, business owners and consultants. Yvonne Thyssen-Post is an engineer and president of Thyagrisseen Consulting and a lecturer; Sabrina Ellsworth is Manager of Agriculture research within the Newfoundland government and the list goes on

This issue we are also proud to feature two women who are bringing awareness to local food, local food production and agricultural education - Margaret Congdon (Class of '85) and Rayanne Frizzell (Class of '03).

In 2019, the Truro Farmers' Market will celebrate its 40th anniversary. A not-for-profit cooperative with a 12-member board of directors, the Truro Farmers' Market has seen significant growth over the past number of years. Manager Margaret

Congdon says. "This role has so many aspects that I am passionate about- local food production, local small business, food security, food waste reduction, agriculture awareness, shopping local, business incubation- and all in a setting where I am able to interact with a great group of people each week."

Rayanne Frizzell (Class of '03) plays many different roles- she's a wife, a mom, a dairy farmer and works for 4-H Prince Edward Island. Perhaps most notable is Rayanne's extensive volunteer work which earned her the title of Volunteer of the Year at the 2018 Blue and Gold Awards. Rayanne's proudest volunteer work is an initiative she created called the Atlantic Farm Women's Conference. This is a conference for women who are not necessarily on the farm but connected to the industry. An educational experience and networking opportunity created in 2012, the conference is held every 18 months, either in April or November.

This issue of the Agricola News we have only scratched the surface of the many accomplishments of our female students, alumni and faculty. We hope to continue to encourage and support our female students in their pursuit of leadership roles as we collectively approach the global challenges of food security, water shortages and climate change.

We need ALL of our bright young minds working together in agriculture if we are to find solutions.

Sincerely,

Dr. David Gray

Precision Agriculture technology to directly benefit the blueberry industry

Despite tough times recently faced in the wild blueberry industry, it seems there is a glimmer of hope for wild blueberry producers.



Through a new program funded partially by the Nova Scotia Department of Agriculture, wild blueberry producers in Nova Scotia can now apply for funding assistance to help to improve the efficiency of their wild blueberry harvesters.

"As we know, the wild blueberry industry has been facing serious financial crisis," explains Dr. Qamar Zaman, head of the Precision Agriculture team at Dalhousie University Faculty of Agriculture.

"Fruit prices are very low and cost of production is high. Harvesting costs are very high, nearly 49.5 per cent of the total cost of production," adds Dr. Travis Esau, also a member of the Precision Agriculture team at Dalhousie.

The Wild Blueberry Harvester Efficiency Program will help producers to offset the high costs of harvesting their berries. With the additional funding, producers will be able to adopt new harvester technology to help increase their harvest and field handling efficiency. As a result, wild blueberry producers could see an increase in berry yield and quality. The support provided by this program will also allow growers to increase their competitive advantage.

"A program like this is very important to our industry at this time," Dr. Zaman explains. "The program will allow producers to upgrade their wild blueberry harvesters, which will increase farm profitability and assist with the stabilization of industry over time."

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.

Through this research, Dr. Zaman and his team of researchers have come up with new technologies to help improve and maintain the wild blueberry industry. They have about eight projects, either completed or in progress but their most notable technology is the automated prototype variable rate sprayer for spot application of agrochemicals.

Traditionally, growers apply agrochemicals uniformly without considering bare spots, weed patches and the substantial variability in soil and crop characteristics that exist within fields. These uniform applications of chemicals results in either over or under-application.

"Newly developed fields have 20-50 per cent bare patches," Dr. Zaman says. "There is no need to fertilize or spray there because if you apply chemicals, you will increase costs."

The PA team's most recent project, "Improving efficiency of commercial wild blueberry harvester using precision agriculture technologies" was completed in September 2017. The project saw monumental success, noting Precision Ag technologies improved

harvester efficiency, increased berry yield and quality reduced cost of production.

Based on this success of the precision agriculture research, the governments of Canada and Nova Scotia launched the Wild Blueberry Harvester Efficiency Program under the Canadian Agricultural Partnership, a five-year, \$3-billion investment by federal, provincial and territorial governments that aims to strengthen the agriculture and agri-food sector and ensure continued innovation, growth and prosperity.

Each applicant may be eligible for 75 per cent funding assistance under Canadian Agricultural Partnership to a maximum of \$20,000 per harvester. It allows farmers, machinery manufacturers and processors at all levels, ranging from small family-run operations to large agri-businesses, to achieve significant improvements in farming efficiency.

"The funding provided to the wild blueberry producers enables them to upgrade their harvesters equipped with precision harvesting technologies," Dr. Zaman says. "Such improved technologies will gradually change the basic patterns of production and consumption and enable humankind's transition to a new and more harmonious approach to economic, environmental and social development."



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Shining stars in agriculture



Volunteer extraordinaire

Rayanne Frizzell (Class of '03)

Rayanne (Nelson) Frizzell plays many different roles- she's a wife, a mom, a dairy farmer, and works for 4-H Prince Edward Island. Perhaps most notably that on top of all of this, she is a volunteer extraordinaire.

Rayanne's extensive volunteer work is what earned her the 2018 title of Volunteer of the Year at Dalhousie University Faculty of Agriculture's Blue and Gold Awards. The Alumni Volunteer of the Year Award honors a volunteer who has consistently and enthusiastically donated their time and talents to advancing the objectives of the faculty or the Alumni Association. Rayanne has certainly exceeded the criteria for the award.

Growing up in Middle Stewiacke, NS, Rayanne was raised in a family that made a conscious effort to give back to the community in which they lived. Volunteering and giving back is in her blood.

"I grew up in a family where my parents always took time to volunteer in our community," Rayanne says. "I was raised to understand that you have to give back."

While volunteering is certainly a part of her livelihood, Rayanne is motivated to volunteer because of the impact she hopes to have on others. She explains that many organizations, businesses, and initiatives rely heavily on volunteers to be able to offer programs and services to youth and engage consumers.

"Looking back there are volunteers that, when I was a member, had an impact on my life," Rayanne says. "They probably don't know the impact they had. The rewards you get from volunteering and what comes back to you is tenfold of what you give."

Rayanne's passion lies in agriculture education. Whether it's youth, women, or consumers, Rayanne's focus is on educating about agriculture, what farmers do, and where food comes from. Living in Prince Edward Island, Rayanne is an active volunteer with Farm and Food Care PEI as a member of the Agricultural Awareness Committee. Farm and Food Care PEI is a new organization that works to educate consumers about agriculture, something that is extremely important to Rayanne.

"Those of us in the industry who can take the time to communicate and to share can play a huge role in educating students and bridging the gap between farmers and consumers," she explains.

While educating consumers is certainly a priority, Rayanne believes that reaching students is imperative. She also works with Agriculture in the Classroom PEI, an organization that focuses on educating grade three students and high school students about agriculture.

"We're at a point in the industry where educating consumers about what farmers do is so important," Rayanne says. "But even more than that, it's reaching the students. Even though we live on PEI, a very rural province, students don't know and don't



understand how their food is produced. As much as we need to reach consumers, we need to reach them when they're younger. As an industry we need to step up and spend the time educating on what we do."

Rayanne's proudest volunteer work though, is an initiative she created from scratch. The Atlantic Farm Women's Conference is a conference for women who are not necessarily on the farm but connected to the industry. An educational experience and networking opportunity created in 2012, the conference is held every 18 months, either in April or November. This November will be the fifth conference.

"Knowing that I played a part in getting people together is probably my proudest moment being a volunteer," Rayanne explains humbly.

The idea for the Atlantic Farm Women Conference stemmed from a conversation Rayanne had with a friend about a dairy conference she didn't attend with her husband. Rayanne admits she didn't attend the conference because she's not as connected to the family dairy farm and none of the topics interested her. After some brainstorming and a bit of research, they found that farm women's conferences exist in Western Canada and the United States, but not necessarily in Eastern Canada. Their idea was born and Rayanne currently sits as co-chair of the initiative.

"Looking back, we were just looking to get some ladies together to see where it went," Rayanne says. "It's been interesting to see relationships develop and see women step up and taking on the role of being an advocate."

Rayanne is also actively involved with 4-H PEI and has been for over eight years, serving as a project leader and a member of council. She also sits as the finance chair on the National Holstein Convention Committee, which PEI is set to host in 2019. On top of her work in agriculture, she works with a number of initiatives with her children's school as well.

When asked where she finds the time to do it all, Rayanne smiles, "if it's something you are passionate about and believe in, you will find the time to do it."

The face behind the Truro Farmers' Market

Margaret Ells Congdon (Class of '85)

Every Saturday morning, hundreds of patrons flock to the Truro Farmers' Market to browse and stock up on a variety of local products. From produce to meat, to baked goods to crafts, the Truro Farmers' Market is a bustling hub of quality, locally produced products. Behind the scenes of the Saturday morning bustle is Margaret Ells Congdon (Class of '85) working tirelessly to ensure a positive and seamless experience for both vendors and market-goers.

"I began my position in January 2016," Margaret says. "This role has so many aspects that I am passionate about- local food production, local small business, food security, food waste reduction, agriculture awareness, shopping local, business incubation- and all in a setting where I am able to interact with a great group of people each week."

In 2019, the Truro Farmers' Market will celebrate its 40th anniversary. A not-for-profit cooperative with a 12 member board of directors, the Truro Farmers' Market has seen significant growth over the past number of years. In 2011, what was once the Truro Fire Hall was renovated to become the new, permanent home of the Farmers' Market. With a cozy home for the colder seasons, the Truro Farmers' Market was able to remain open during the winter. The Market continues to remain open every Saturday year round, only closing for two Saturday's during the Christmas holidays.

"I hope to be able to help continue to grow the Truro Farmers' Market and reach new customers, share the importance of choosing high quality food from local sources you trust, and showcase the variety of craft and art products made right here," Margaret explains enthusiastically. "We would like to add online ordering for a mid-week pickup or delivery so that we can get products to people who can't attend the market in person and make it convenient for them to access our vendor products."

In her role as Market Manager, Margaret is responsible for the operational side of Market activities. She accepts applications from vendors, maps and plans for the Saturday Markets, collects vendor fees, oversees the banking and financials as well as promotion and marketing. She oversees the space so that the Market provides the best environment possible for the vendors.



“We are a community of primary producers and small business people and we get to connect them, their talents and their high quality products directly to consumers.”



On off days, the hall and kitchen are rented for events to other organizations.

“Farmers markets are so much more than they first appear,” Margaret says. “We are a community of primary producers and small business people and we get to connect them, their talents and their high quality products directly to consumers. We have an amazing group of vendors and are supported by fantastic customers.”

Growing up on a beef, hog, and vegetable farm in Sheffield Mills in the Annapolis Valley, Margaret is certainly no stranger to agriculture. With farming in her blood, Margaret grew up knowing that she always wanted to be involved in the industry. Following her passion, Margaret attended the AC where she earned a degree in plant protection. Margaret was among the first class to complete four full years on campus, at the then known, Nova Scotia Agricultural College. In 2012, Margaret’s

daughter, Caitlin, graduated from Dal AC with a degree in plant science. Caitlin was among the first graduating class after the NSAC and Dalhousie merger.

“I feel like Caitlin and I book ended a significant period of time in AC history,” Margaret smiles.

While Margaret’s journey in agriculture has certainly been fulfilling, it hasn’t always been easy.

“Women in general have many demands; women in agriculture have a unique set of demands that arise from the nature of growing, raising, being at the mercy of nature and market fluctuations and how strong you have to be to produce food in today’s climate,” Margaret says.

For Margaret, the opportunity to play a small part in connecting producers and people who appreciate the foods and products they have and to proudly point what our farmers have to offer is the most rewarding part.

Women in agriculture: Shattering the glass ceiling

In the past, women have often been underestimated for some of their abilities.

Like their ability to feed the world.

Let the evidence show, women in agriculture have shattered the glass ceiling. From running the farm solo to taking on non-traditional agribusiness leadership roles, the ladies are taking over the industry. With ever-increasing momentum, their phenomenal leadership skills and work ethic is changing the landscape of the agriculture industry from coast to coast, and beyond.

The numbers don't lie.

According to the latest 2016 Census of Agriculture, from 2011 to 2016 the percentage of women running their agriculture business alone rose from 5.6 per cent to 7.2 per cent. In addition, the proportion of female farm operators saw an increase from 27.4 per cent in 2011 to 28.7 per cent in 2016. Statistics Canada notes this is a long-term trend that began in 1991, when women accounted for only 25.7 per cent of all farmers. Further still, a study at the University of Manitoba shows that more than 55 per cent of new farmers in Atlantic Canada are women.

While it may seem like a recently emerging trend, women are certainly not strangers to agriculture, especially at Dalhousie University Agricultural Campus (AC). Although the numbers were significantly lower than they are today, women have participated in courses at the AC (then known as the Nova Scotia Agricultural College) since the early 1900s. Many of the first female graduates of NSAC were the only women in their classes and were among the first women in Canada to pursue studies in agriculture and related sciences. Some went on to work in new technical and professional careers associated with government services while others made contributions to rural, social and educational development and the development of family farms.

"I think it's important to recognise that women have always played an incredibly important role in agriculture but that they have not been given the recognition they justly deserve," says David Gray, Dean, Faculty of Agriculture. "What is both exciting and well overdue is that we are seeing women taking on more leadership roles in agriculture. We want our agricultural sector to be competitive internationally and by recognising the crucial role that women have, and continue to play in agriculture and by actively encouraging women to take their rightful place as





leaders, we are increasing our competitive edge substantially. The AC is proud to see that the number of women choosing to study agriculture related programs on our campus continues to grow. We embrace diversity and are a truly inclusive community. Diversity should be encouraged; diversity makes us stronger."

In 1913, Helen Woodroffe was listed as the first female graduate in the record of graduates from NSAC. Soon after her graduation, Helen became employed at NSAC as an assistant in bacteriology and was the college librarian. Helen, among many other early female graduates, certainly paved the way for women in agriculture and sciences and helped move the industry, and the role of women within, to where it is today.

Currently, the ratio of female to male students studying at the AC is roughly 60/40. According to the official December 1, 2018 report that captures the breakdown of students enrolled in studies at Dalhousie University, there are 395 undergraduate female students while there are 247 undergraduate male students at the Agricultural Campus. The trend is reflected amongst graduate students as well, with 45 female graduate students and 27 male graduate students.

"The majority of students studying on our campus are now female," says Dean Gray. "Considering the fact that agriculture had historically been a male-dominated discipline, this is something we are very proud of. We hope that we will help encourage and support many of our female students to go on to take leadership roles as we collectively approach the global challenges of food security, water shortages and climate change. We will need ALL of our bright young minds working together in agriculture if we are to find solutions."



The barriers can be tough to break

The significant contributions of women in agriculture are evident all around us, but it certainly wasn't easy for many of them to get where they are today. While some women were born on farms and into a farming lifestyle, others have had to wrestle their way to the top. Even still, females born into agriculture families had to fight the stigma that often preceded them.

Today, a number of women working directly on farms are regarded as the primary decision makers. Their roles extend far beyond the roles that gender stereotypes had commonly pegged as "women's work." Women work hands-on in all aspects of farming. They both operate and maintain machinery. They do the heavy lifting and oversee the livestock. They balance the finances and ensure the farm remains sustainable for the generations to come. They ensure on-farm technology is always in working order, and so much more. Their ability to run the farm, making decisions, solving problem, and often leading a team of employees, is certainly no small task. What's more, these incredibly hard working women are often raising families as well. Most work alongside their partners or families.

More women are also stepping up to take on leadership positions on commodity boards, associations and in senior management roles in non-traditional roles of agribusiness. With these increasing numbers in female role models, women working their way up look to these fearless leaders for advice and mentorship.

The Chicken Farmers of Ontario (CFO) has noted this trend of women in agriculture and are committed to ensuring women feel confident to overcome any challenges they may be faced with. To help women get more involved, CFO has launched an initiative to help women take on roles within commodity boards and associations.



The CFO Women in Leadership program sponsors the Advancing Women in Agriculture Conference, a Canadian initiative committed to the movement of advancing women in agriculture. Also through the program, the CFO board of directors encourages its farmer-members to plan and participate in community activities. Funding is made available to eligible farmer-members to execute these community programs, to help farm women become more involved.

Despite outdated stereotypes, females across the country are blowing these barriers out of the water and making their dreams a reality. Women are thriving in agriculture, both on and off the farm.

You'll find them everywhere

For many family farms across the country, the strong and fearless women who run them are often the backbone of the family farm business. In the past, these women were typically known for preparing meals for the men, caring for the children, and ensuring the farm remains financially viable. While all important roles, today many women are recognized for their work directly on the farm. These women oversee daily operations and make decisions, roles that were typically associated with men. Other women work in non-traditional roles off-farm, making business decisions and voicing their concerns on commodity boards that they sit on. Even still, some do it all.

Jeannie van Dyk (Class of '78) owns and operates a dairy farm with 280 Holsteins (120 milking) in Noel Shore, NS. Alongside her are her husband and two sons. In addition to their herd, Jeannie and her family crop approximately 600 acres with alfalfa, corn, and pasture. Jeannie's role on farm is certainly significant.

"Over the years I have worked in all aspects of farming including cropping, livestock care and running the business," Jeannie explains humbly. "With my two son's home now, I do

very little of the field work preferring to work with the livestock. I do the night milking and every other weekend. I cover maternity cows and calf care and assist with the responsibilities of herd management and milk quality. I also oversee the business and do the books."

Not only does she hold an important role on her family farm, Jeannie holds strong leadership positions on a number of industry boards. She is director and vice-chair on the board of Agropur Dairy Cooperative, a large dairy processing cooperative owned solely by 3,400 dairy producers across five provinces. She also represents Agropur on Co-operatives and Mutuals of Canada board and attends other dairy industry meetings on the Cooperative's behalf.

With her direct involvement on the farm, Jeannie has noticed that the image surrounding women in agriculture has improved tremendously over the past number of years.

"For me, the hardest part of being a woman in agriculture has probably been the failure of some people to recognize us as farmers, owners, and business people rather than as someone who simply helps out on the farm," Jeannie explains. "Fortunately now, it is much more common for women to be recognized as a business person on farms or in agribusiness."

Echoing Jeannie's sentiments, Tracy Kittilsen (Class of '96) also feels as though perspectives of women in agriculture are changing for the better. As manager of Extended Learning at Dal AC, Tracy leads a team whose role it is to encourage innovation in the delivery of high-quality, flexible work based learning solutions for adult learners in agriculture and aquaculture. Working alongside and assisting powerful and inspiring women in agriculture, Tracy has noticed an increase in women in leadership positions within the agriculture industry.

"I think traditionally agriculture was seen as a male dominated industry, but in reality that is not the side of agriculture I saw much of," Tracy explains. "I grew up on a small mixed farm where everyone pulled their own weight and the motto was, 'if you want something done you better do it yourself!' Today as I go about the region and run into classmates from the AC and scan the crowds at meetings there are lots of women there – and in leadership roles. I think this is a sign of the times, where women are valued as equals."

Tracy has also noticed this trend among youth in agriculture. For 10 years, Tracy was the general leader of her local 4-H club. When her kids were young, she took a break from the role and has now returned to the program as a project leader. She's noticed the increase in female participants in the club in the return from her hiatus.

"On my return to the program I have noticed that there seems to be a lot more girls than boys involved," Tracy says. "They're involved in everything from leadership roles and projects such as beef and welding- projects that have, in the past, perhaps been more associated with boys.."

Like Tracy, Amanda Greaves (Class of '10) has not had to overcome any barriers as a woman in a non-traditional role in

agriculture. Amanda doesn't own her own farm, but that doesn't diminish her impact on the agriculture industry in Nova Scotia. Amanda currently works for LBJ Farm Equipment providing technical support for milking equipment on dairy farms. Growing up with horses and then studying poultry during her time at Dal AC, Amanda had her work cut out for her when accepted her first job with Shur-Gain.

"I was hired to do my first job working for Shur-Gain in dairy when I knew NOTHING about cows," Amanda admits. "These farmers were trusting me as their nutrition consultant, to feed their animals. I wouldn't have trusted myself! Farmers were so accepting of the fact that I was learning."

Despite her role, Amanda has never felt any true barriers as a female working in a non-traditional agriculture position- a testament to the shifting perspectives in current society.

"Female or male, it doesn't mean a thing to me," Amanda states. "I don't even look at gender roles- it's the way I was raised. We need people to nurture the land, provide food and increase sustainability. We need willing capable human beings in general."

While there are a fair share of women involved in the physical on-farm labour, women in agriculture extend far beyond everyday life on the farm. From non-traditional roles, to administrative support, to women in research, ladies are involved in many aspects of the agricultural supply chain. And while the perceptions certainly changing, many women in the industry are working hard to continue to improve these views.

Paving the way

The perceptions of women in agriculture have improved significantly over the past number of years. While there is still certainly room for improvement, the same can't always be said for women in agriculture in developing countries. Women in many developing countries often don't hold the same rank as men and it is often rare to find a women in a position of leadership. Despite the many challenges, one Agricultural Campus alumnus is working hard to change that.

Lana Bos (Class of '02 and '14), who is currently completing her MSc, works in Extended Learning, at the Agricultural Campus, as an Education and Training Developer. She currently leads the development of national occupational standards and competency based curriculum for jobs in agriculture. She works in developing countries, currently Ethiopia and Uganda, facilitating workshops and training with partner colleges.

"As part of the development of occupational standards and curriculum we always include a gender focus in everything we do, from the participants in a training, down to using gender focalized examples in the teaching material," Lana explains. "We must ensure that there are equal opportunities for male and female students and graduates working in agriculture and we seek to do this by integrating women into the curriculum. We try to empower female instructors and students at the college





and also as leaders in the industry. We encourage women to become entrepreneurs and start their own businesses as well as take on more predominantly 'male' roles, such as production of livestock."

In these countries, women are often very dependent on men. Women typically don't have the ability to purchase land or have access to banks or loans and resources, including money. Traditionally, they stay at home, manage the household, collect water and firewood, look after the children, and grow food, among other duties. It is very realistic for women to be able to start their own source of income and be more independent and empowered within agriculture.

"Economic development and food sustainability is only possible if more women get more involved in leadership roles in agriculture," Lana says. "Through our work, we are encouraging women to take on leadership roles in agriculture and we make sure the occupational standards and curriculum speak to equal opportunity."

While Lana and her team work to bring women in agriculture to the forefront in these countries, Lana explains she has met her own challenges when visiting these countries to help educate.

"Women in these countries do not hold the same status as men," she explains. "This has been challenging as often I am leading discussions and facilitating work with rooms full of men,

that don't necessarily see you as equal. This is often overcome when they realize we do know what we are doing and can help them achieve their overall goals."

While Lana and her team are working to empower women in agriculture in developing countries, a number of initiatives are on the rise across Canada to engage and empower women in agriculture.

Within Atlantic Canada, the Atlantic Farm Women's conference is hosted every 18 months to encourage collaboration and engagement among women in agriculture to help progress the industry. A relatively new initiative, the conference is entering its seventh year in 2019 and has been gaining momentum across Atlantic Canada ever since its inception in 2012.

The idea for the Atlantic Farm Women Conference stemmed from a conversation between Rayanne Frizzell (Class of '03) and Amy Bysterveldt (Class of '03). The women got to chatting about a dairy conference that Rayanne didn't attend with her husband. Rayanne admits she didn't attend the conference because she's not as connected to the family dairy farm and none of the topics interested her. After some brainstorming and a bit of research, they found that farm women's conferences exist in Western Canada and the United States, but not necessarily in Eastern Canada. Their idea was born and Rayanne and Amy currently co-chair the initiative.

The conference typically hosts inspiring speakers, giveaways, farm tours, serious discussion and fun activities for women in agriculture. The conference isn't limited to women who are involved directly with a farm- it's open to all women interested or involved in the industry in a variety of ways.

Also encouraging collaboration among women in agriculture is the Ag Women's Network (AWN), an online platform for women in agriculture that encourages women to share their experiences and learn from one another. As a volunteer-led network, AWN members are encouraged to engage in social media conversations, online discussions, and attend virtual events. The goal of AWN is to help women in agriculture around the globe to be better equipped and understand how to serve as more inclusive leaders.

It's initiatives similar to these taking place across the country that allow women in agriculture to join together to share their knowledge and experience. In an industry that has been often viewed as male dominated, it's reassuring for these women to know that they are definitely not alone in their struggles and triumphs.

The power of women

Women in agriculture have had to overcome some challenges. Their outstanding accomplishments in agriculture continue to grow and receive the recognition they deserve. Crashing through the glass ceiling that was said to be holding them back, women are dominating in the agricultural industry now more than ever. From coast to coast and overseas, women play an important role of putting food on the table for consumers all over the world. From their roles on the farm, in agribusiness, in non-traditional positions, research, and everything in between, the women are plowing through. Support and empowerment from their peers and mentors ensures these incredible, hard working women have the support system they need to thrive.

And thrive they are.

While their roles may have been underestimated in the past, it's clear that the power of women in agriculture should not be misjudged.



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Shining stars in agriculture

We chatted with several women, working in a variety of roles in agriculture. We asked these women the same questions, learning about their experiences and opinions as they contribute to the industry.

MEREDITH (LEIER) VAIR – CLASS OF '07 Heartland Veterinary Services, ON

THE IMPORTANCE: Agriculture is a huge industry, and is closely connected to so many aspects of everyday life. Women are becoming involved with more and more industries that were traditionally male dominated (and men are equally filling more jobs more traditionally associated as a female occupation), and agriculture should be no exception. It is an ever-growing and exciting industry, that has many opportunities worldwide, so women should be, and are, seizing these opportunities.

INSPIRATION: I have had many role models in the veterinary field- both male and female- since making the decision that I wanted to be a veterinarian when I was little. They inspired me to attend NSAC, and pursue veterinary medicine. A female veterinarian at my clinic I currently work at is very involved with the dairy industry, and became a huge inspiration for me after visiting the clinic for a few weeks of my final year of veterinary college. Now that I am a mom, my daughter is a huge inspiration, as I want to instill a love of learning in her, and the knowledge that she can accomplish anything if she works hard for it.

MISCONCEPTIONS: I think the biggest misconception may be that women are not involved much in agriculture. Traditionally, I think agriculture has been seen as more of a male dominated field, but over the last several years, more and more women are becoming involved in all aspects, and are just as capable and passionate about it as men. I have several female dairy producers, who either own the farm, and are the main manager, or run the farm alongside their partner, and have a very successful business. I work in a veterinary practice that has 13 large animal vets – seven of which are female. I also work alongside females in a leading role in other areas of agriculture, such as animal nutrition, cropping, farm equipment, food science and research, and agricultural money lending. I think there still are still some misconceptions about abilities- But there are many different ways of completing the same tasks, so if a woman- or a man- isn't strong enough to do something, there is another technique they can use to accomplish it and achieve the same outcome.

ADVICE: Go for it! Agriculture is such a hugely diverse industry, there really is a job to suit any interest, and is continually improving and expanding across many different fields. I love working in the agriculture industry- despite it being so large, it truly is like a big family, with the amount of connections you are able to make.





**TEMPLE GRANDIN – HONOURARY DEGREE
RECIPIENT 2015**
Professor of Animal Science,
Colorado State University

THE IMPORTANCE: It is really important for women to get involved in agriculture. They can provide a valuable perspective.

INSPIRATION: There were some good mentors in agriculture who encouraged me because they recognized my abilities. One of my mentors was a building contractor who had seen my drawings. He sought me out to design projects for his company.

MISCONCEPTION: Get out there and prove to the guys that you can do it.

ADVICE: When you are in college, get lots of experiences in different kinds of agriculture. It is important to “try on” careers. Find out what you love and find out what you hate. I came from a non-agriculture background. I became interested in it because I was exposed to beef cattle on my aunt's ranch.



JACKIE (GELDART) SWEETLAND – CLASS OF '96
Trouw Nutrition Canada
(Shur-Gain NB)

THE IMPORTANCE: There are so many rewarding career opportunities in agriculture and more and more women are taking on leadership roles within the industry. Many employers are seeking talented, diverse and educated women to complement an inclusive workplace. Women can offer new ideas and new perspectives to any business.

INSPIRATION: Advancements in agriculture are happening so fast. There are new technologies and innovations coming all the time so it never gets boring! Sustainable agriculture practices will help feed our future population and I am fortunate to play a role in that.

MISCONCEPTION: I have never considered gender an obstacle to doing something you love, including your job. When I first started my career, I began working with predominately all men and although I was a bit apprehensive at first I knew it was something I would enjoy doing. Over the years I have seen the industry evolve and today I work with many talented women working in non-traditional roles.

ADVICE: Be confident and follow your passion! Agriculture is a rewarding career and there are so many opportunities to pursue if it is something you truly enjoy doing.

YVONNE THYSSEN-POST – CLASS OF '80 President, Thyagrissen Consulting Limited & Part-time Academic, Dalhousie Agricultural Campus

THE IMPORTANCE: Why not? Women play a significant role in the industry and we need other women to acknowledge that, and work with them. Agriculture, at the grass roots level, is still a family business, where women are involved as owners and significant contributors. Mothers/women, for the most part, are still the center of the family unit, and they still tend to have the greatest influence on food purchases and food consumption in the household. Women also bring a different perspective and different skill set; often stronger in the soft skills - communications, understanding the family dynamics, often the family peace maker; and they tend to have a strong business sense. Women are also extremely creative, often providing a unique perspective to an industry with narrow margins.

INSPIRATION: I love the industry and working with people who have devoted their lives to it. I had an early introduction to agriculture, growing up on a dairy and poultry farm. My parents immigrated to this country shortly after they were married because they wanted to have the opportunity to farm and Canada had lots of land, opportunity for farmers. They worked hard and that probably has led to the respect I have for those who work in this industry.

MISCONCEPTION: Women are just as capable as men of running a farm business, but they are often behind the scenes. Women are not necessarily part of the ownership, but that doesn't reflect on their actual contribution. The owner is often the one that is interviewed, seen at meetings, the face of the business. The saying 'behind every successful man there is a successful woman' – still applies to a lot of farm family businesses.

ADVICE: In my opinion, there is no other career that is more important than food production. Now I may be a bit biased but food is still essential for human life, we need to eat and if we have quality healthy food we can reduce the impact on our health care system and we have the ability to be educated and live productive lives. There is no field that is more important, and it is a vibrant and exciting profession.





PAULINE DUIVENVOORDEN – CLASS OF '81
Veterinarian & Co-owner of Headline Holsteins Ltd.
and Barn Fine Eggs Inc.

THE IMPORTANCE: Women bring a different skillset to the agricultural table as we do in all aspects of our life experiences. There is some truth in “women are from Venus and men are from Mars”. This somewhat nebulous distinction provides a different perspective through thoughts, words and deeds, bringing valuable balance to the agricultural universe.

INSPIRATION: I am inspired by teamwork, respect, vision over status quo, passion, work ethic, my mother and my husband, both who embrace all these commendable traits. I am also inspired by the patience of farmers, who work tirelessly amidst challenges beyond their control, including the negativity expressed by those who are unfamiliar with agriculture and primary production in particular.

MISCONCEPTION: I think the biggest misconception is that women do not play a significant role in agribusiness, but work alongside partners to achieve success. The reality is that women bring incredible knowledge and influence to the sector, often working inconspicuously within their “fields” to impact outcomes.

ADVICE: Within agriculture, the range of opportunity is very diverse. Investigate a broad array of practical agricultural experiences to determine the best fit. Include conversations with like-minded people who inspire with their passion and knowledge. Recognize that agriculture is a unique industry, and the production of food and related products carries an important responsibility in our fragile world. And ultimately, know that the network of peers you develop over time is great incentive in itself.



LORRAINE (MACLENNAN) MACKINNON –
CLASS OF '01
PEI Department of Agriculture & Fisheries

THE IMPORTANCE: In this regard, I am completely gender neutral - the more people closely connected to agriculture the better! However, I do think that in any industry or workplace, a balanced and diverse set of perspectives will lead to greater success.

INSPIRATION: I've always been inspired by the past women in agriculture who have gone before me; including my mother and both grandmothers. Agriculture may be somewhat unique in how women have always played an active role on farms. This was certainly the case with my mother and grandmothers. Also, I want to acknowledge my father's open mindset and encouragement. He was always an advocate for women in agriculture. He and my mother were true partners in business and in life. He supported her decision to take leadership roles in the industry; he respected the female agricultural professionals he did business with; and he encouraged me to pursue a career in agriculture. I really never gave any thought to challenges my gender might bring, and I still don't. I'm lucky to have had such revolutionary role models!

MISCONCEPTION: Not all women in agriculture are actually on the farm! There are so many opportunities beyond primary production that include highly skilled, professional, entrepreneurial and very exciting roles! If you have the opportunity to produce food; that's incredible - but it's not the only way to get involved in a fulfilling career in agriculture.

ADVICE: Please do so - the industry needs you!



LIZ (MACDONALD) MAYNARD – CLASS OF '76 Farm Credit Canada, PEI (retired)

THE IMPORTANCE: The involvement of women is important to agriculture because of the skill sets, communication abilities and knowledge that women bring to the industry. Women continue to be involved in the so called “traditional roles”, however the industry is recognizing and placing more value on these roles and the evolving roles of women in the industry. Perhaps another way to state this is that the “traditional roles” in agriculture that were once somewhat gender specific are less so now. Who changed; men or women? I suggest it doesn't matter because agriculture is stronger and better equipped to face future challenges with women involved everywhere.

INSPIRATION: Agriculture is an exciting industry due to constant change, the passion of those involved in it plus the players are very interesting, knowledgeable and generally optimistic. My career allowed me to play an important role in the building and delivery of the varied and exciting facets of farming. I continue to find it personally rewarding to be a part of this industry.

MISCONCEPTION: The biggest misconception about women in agriculture is held by women; namely that we do not have the necessary skills and knowledge to take on leadership roles in farm organizations. Women have tended to under estimate their capacity for leadership roles.

ADVICE: I would simply say “go for it”. Be aware of and don't undersell your talents and value. Build a network both inside and outside the industry of people who will be your champions.

MARYELLA MAYNARD – CLASS OF '09 PEI Agromart

THE IMPORTANCE: Agriculture has so many opportunities for women. It is an industry that is looking to young people to become leaders and there is a major place for women.

INSPIRATION: Farmers. In the face of hardship, stress, tough markets, tough conditions they still manage to be optimists. They are some of the most resilient people you will meet. Despite the challenges they face, they continually try to learn and do better.

MISCONCEPTION: Women have made great strides in taking on and being accepted in professional roles within agriculture. From vets to bankers, women are on farms and respected. I do feel that among some, there is still the misconception that the job of farmer, is for a man.

ADVICE: 100 per cent do it. There are so many opportunities in agriculture for young, smart, ambitious people. It is constantly evolving, you never stop learning and you get to work with some wonderful people.



SABRINA (HOUSE) ELLSWORTH - CLASS OF '02 & '05 Government of Newfoundland and Labrador

THE IMPORTANCE: The world's population is projected to rise to 9 billion by 2050 and half of them will be women. It is imperative that we recruit passionate, enthusiastic women who can help feed this growing population. It's been proven in many jurisdictions, that when you educate, empower and invest in women, significant advancements in productivity and livelihoods are made. Women bring a different perspective to farming and agriculture. With an intuitive sense of community and nurturing, they sometimes see situations differently and can offer a different outlook.

INSPIRATION: My inspiration comes from like-minded people with similar vision and goals for the industry. For me, knowing that I have a part to play in feeding, educating and building a food system that can improve livelihoods and increase the prosperity of my province is what keeps me motivated to move forward.

MISCONCEPTION: I think there is a misconception in this industry that women can't be successful leaders. Women working in the agriculture industry here in Newfoundland and Labrador are proving otherwise. I'm surrounded by educated, intelligent, trailblazing women who spend their days strategizing to make this industry prosper and grow. I see more and more women every day in the forefront, not only at this level of the industry but on the farm business side as well. However, while we are well represented on numbers of women in the workplace, I do still feel that educated, qualified women have to prove themselves more to obtain respect and acknowledgement in the industry.

ADVICE: I would tell a young woman who is considering a career in agriculture to follow her dreams and don't take no for an answer. Don't be afraid to make mistakes, there is no better way to learn. I would also say never stop learning. Like many other industries, this field is always changing – new practices, methods and technologies are being developed daily that makes food production/agriculture even more sustainable and profitable. I would also tell her to surround herself with like-minded people and collaborate where-ever she can and build a network of supporters. You will never know at which point in your life you will have to call upon someone for advice or assistance.



CAROL BUBAR - CLASS OF '77 Instructor at Olds College, Alberta (retired)

THE IMPORTANCE: It is important for women to be involved because safe and sustainable food production is everybody's business!

INSPIRATION: When I was teaching I was often inspired by my students. I had many that came to Olds College later in life to train for a second career in agriculture or the environment. Those students were so motivated to succeed and make a difference. They were a joy to teach.

MISCONCEPTION: Almost 40 years after I began my career in agriculture, I hope that there are no longer any misconceptions! Women can and do contribute to agriculture in so many ways and I hope that continues. My sense is that there is no longer a glass ceiling for women in agriculturally based business. I know that when I first started going to weed meetings in the early 1980s there were almost no women working for herbicide companies. The last meeting I attended in the late 2000s, there were more women present than men. I hope that trend continues.

ADVICE: I would echo what I was told when I was in high school trying to decide on a career path. I thought I wanted to be an environmental biologist. It was a romantic notion and there were very few jobs at that time for women or men. A good friend said to consider agriculture as a form of applied environmental biology, one that is focused on food production. When you get right down to it, is there anything more important than food? I can say now that I am very happy I took his advice as it led to a long and satisfying career.

In memory

The Agricultural Campus and the Alumni Association acknowledge the passing of the following alumni. We extend our deepest sympathy to family and friends.

G. Fuller	1936
George Porter	1941
Allister MacKay	1947
Edward McCarthy	1949
Arthur Johnston	1950
Edmund Haines	1953
Vernon McCully	1954
Augustine D'Eon	1955
James Ripley	1955
Douglas Miller	1956
William LeBlanc	1957
Clifford Ellis	1961
Marlene MacMillan	1963
Heendrikus Heukshorst	1964
Henry Barkhouse	1967
David Aiton	1972
Cathy Woodroffe	1974
Arnold Laureijs	1982
Lorraine Tedford	1984
Stuart Gibb	1984

Make a memorial gift

Honour a classmate or a friend with a memorial gift to the AC. Your thoughtful gift will be used to support student scholarships or bursaries, to improve campus, or to support an area that is of importance to you or your honouree. An acknowledgement of your gift will be sent to the family of the deceased. For additional information on memorial gifts, please contact Donor Relations at 902.893.6721. Make a gift online at dal.ca/giving.

Healthy, happy chickens

Dr. Deborah Adewole always knew she wanted to work in agricultural research and academia. Moving all the way from Southwestern Nigeria, Deborah is not only fulfilling this dream, she's committed to improving the health of chickens in Atlantic Canada's poultry industry through more holistic nutrition.

"Relocation to Canada presented some challenges, especially the weather!" Deborah smiles.

Growing up in Nigeria, Deborah earned a bachelor's degree in agriculture. While in the third year of her undergraduate studies, Deborah realized her passion for academia in agriculture.

"I volunteered to assist a senior colleague in her honours thesis project and since then, I started developing an interest in agricultural research," Deborah says.

Following this passion, in 2009 Deborah moved to Winnipeg to complete a Masters and PhD degree in Animal Science at the University of Manitoba, specializing in poultry and swine nutrition. Her work during her Master's degree on monogastric nutrition, the nutrition of animals with a single chambered stomach, paved the way for her PhD research in poultry nutrition.

In late 2018, Deborah made the move to Nova Scotia and was appointed Assistant Professor and Industry Research Chair, Poultry in the Department of Animal Science and Aquaculture at Dalhousie University Faculty of Agriculture. As Industry Research Chair, Deborah works in collaboration with industry associations and Dal AC to conduct applied and industry-related research. Deborah works with the Chicken Farmers of Canada and the Government of Canada through the Atlantic Poultry Research Institute.

"My interest in nutritional research was propelled by my passion to enhance production of protein sources to boost food security for families in various parts of the world," Deborah explains.

Currently, Deborah's research is focused on alternatives to the use antibiotics in poultry with the goal of sustainable chicken production and responsible use of antibiotics in Atlantic Canada. A major aspect of her research will focus on exploring dietary fibre ingredients such as wheat, flax, oats, canola, and other natural growth promoting products to be used as alternatives



to antibiotics in chicken production. Her research looks at the nutritional components in feed of both broiler chickens and laying hens.

"Fibre ingredients are major sources of non-starch polysaccharides, carbohydrates whose molecules consist of a number of sugar molecules bonded together, that can be fermented by bacteria in the lower gut of chickens to produce short chain fatty acids that promote gut health," Deborah explains.

Deborah is exploring how fibre modification strategies in chicken feed improve the production of short chain fatty acids, produces beneficial bacteria, and reduces the concentration of pathogens. These improved characteristics in chicken nutrition have the potential to enhance growth performance and promote gut health of chickens.

"Phytogenic products are natural growth promoting products," Deborah explains. "These products are major sources of phenolic compounds that have roles in health improvement through anti-inflammatory, antimicrobial, and anti-oxidant properties."

Through Deborah's research, farmers are likely to see improvements to the health of their chickens, both laying hens and broilers, without the use of antibiotics. It's possible that farmer's pocketbooks could also benefit from this research, as chickens with better intestinal health would require fewer visits from a veterinarian.

"The composition of gut microbiome plays an important role in gut health," Deborah explains. "Intestinal health is crucial to the general health and well-being of poultry. My research approach promises to reduce bacterial infections in chicken production, promote gut functionality by reducing inflammation and enhance growth performance, thus reducing financial losses due to bacterial infections and gut inflammation."

RBC provides opportunities of a lifetime for Agricultural Campus students

Born and raised in St. John's, NL, Faculty of Agriculture student Christine Ellsworth had no plans to move away from the place she has always called home.

With no background in farming whatsoever, Christine always had her eye on studying physiotherapy. It wasn't until she realized her heart wasn't in it that she began to look elsewhere, stumbling upon Dalhousie University's Faculty of Agriculture.

"I knew nothing about farming or agriculture in general really when I came here, I had never heard of 4-H and I was pretty new to almost every experience. I milked and did barn chores for the very first time here in my first year," Christine laughs.

Last spring, Christine was one of 51 students to participate in the foundational year of the RBC Agricultural Internship Program. RBC announced an investment of \$250,000 as part of RBC's Future Launch Program which aims to empower Canadian youth with the job experience, networking opportunities and skills development to enhance their chance of career success after graduation. Combined with classroom study, the 12-week internships enable students to gain the skills necessary to become knowledgeable professionals in the agricultural field.

"The internship program really allows students a chance to dip their toes into the working world," Christine says. "It provides opportunities we wouldn't have otherwise. The growth and experience that the internship program provides students can't be matched by simply sitting in a classroom."

Through RBC's Agricultural Internship Program, Christine completed an internship in Newfoundland at Country Ribbon Inc., a company that supplies Newfoundland and Labrador with high-quality, fresh and individually fresh frozen chicken products.

"In this time of unprecedented economic and technological change in the agriculture sector, Canada's future prosperity will depend on our young people and their ability to lead us forward,"



"THE GROWTH AND EXPERIENCE THAT THE INTERNSHIP PROGRAM PROVIDES STUDENTS CAN'T BE MATCHED BY SIMPLY SITTING IN A CLASSROOM."

said Bruce Young, RBC Vice President, Commercial Financial Services, Cape Breton and Eastern Nova Scotia, who graduated from Nova Scotia Agricultural College in 2002. "Through this great partnership with the Dalhousie Faculty of Agriculture, more than 300 youth will have the opportunity to develop the skills, knowledge and experiences necessary to drive agriculture innovation and productivity."

As one of two interns from Dal AC, Christine was hired as a research student tasked with two projects that investigated areas in which the company could improve their practices.

"This internship experience allowed me to improve, both academically and professionally," Christine explains. "I learned how to work hard and to work towards what I want. I gained knowledge as well as experience. It allowed me to be introduced into a community I didn't have access to previously."

As Christine looks forward to graduate in 2020, she is forever grateful for the opportunities the Agricultural Campus have presented her.

"The AC campus is phenomenal," Christine smiles. "You are a face and a person to the professors and not just a number like at many other campuses. If you have a farming or agricultural background then great, but if you don't there's no reason to be intimidated. I was completely clueless when I got here and now it's certainly a place I call home."

A sticky success

Wood 'n' Hive

Alex (Class of '82) & Heather Crouse





In 2003, the Crouse family woodlot in Stewiacke, NS was devastated by the infamous Hurricane Juan. For Alex Crouse (Class of '82), the silver lining among the devastation were the wild blueberries that began to grow in place of the trees. Pollination is critical to cultivating of wild blueberries so Alex and his brother Matthew (Class of '96 and '06) invested in 12 honeybee hives.

For Alex and his wife, Heather, that's where it all began.

For nearly 10 years, Alex and his brother sold honey in very limited quantities, to friends and family, using honey produced by the bees that pollinated their wild blueberry fields. Recently retired from his lifelong career in agricultural sales and marketing, Alex decided to turn this hobby and passion into something more.

"Bee keeping and honey production have always been of interest to me," Alex explains. "Both my grandfather and father were beekeepers years ago."

Alex's first step was to enroll in the Modern Bee Keeping course through Dalhousie University Faculty of Agriculture's Extended Learning department. Then, in 2016, Alex and Heather started Wood 'n' Hive with just 15 bee colonies. Together, the couple nurtured Wood 'n' Hive into the thriving honey bee farm that it has become.

Located in Port Williams, NS, Wood 'n' Hive is now home to 240 bee colonies. In 2018, Wood 'n' Hive saw the first sales of nuclear colonies being sold to other beekeepers in the Maritimes. In addition

to the honey that the 9.6 million bees produce, Wood 'n' Hive also has a wide variety of value-added honey products such as lip balms, candles, food wraps and lotion bars. Nearly 20 per cent of Wood 'n' Hives business comes from these value-added products which are hand-made by Heather and sold through the retail store, selected farm markets and more recently, craft fairs.

"I'd say we spend 50 per cent of our time on marketing, and the other 50 per cent on production," Alex says. "We have hundreds of customers come through our doors each year. Many are repeat customers and also lots of new folks, who stumble upon us."

Although Wood 'n' Hive is known for their outstanding honey and beeswax products, the educational component of the farm is what makes it so unique. As a part-time school teacher, the educational piece is a natural fit for Heather.

"One of our primary goals is education," says Alex with a smile. "It is one of the things that makes a visit to our farm unique. If we sell products while educating consumers, that's just a bonus!"

Their retail shop is home to an observation hive as well as the extraction equipment. During harvest, customers can visit the bees and see first-hand how honey is handled, all the way from the comb to the consumer. Wood 'n' Hive also offers two types of tours to their customers. Walk-through tours of the extraction, production and retail site, (which conveniently sits in front of their

home), are great tours for larger groups or anyone passing by. Smaller groups can book a very experiential tour, "Into the Bee Yard", which involves suiting up, much like the bee keeper himself, and venturing out to the bee yard.

Alex and Heather work as a team, ensuring business operations are seamless. Alex oversees the maintenance and construction of the equipment, while also tending to the bees. As a beekeeper, also known as an apiculturist, Alex works to maintain the bee colonies in a series of manmade boxes called supers and brood chambers. A super or brood chamber is a large box with typically 9-10 frames hanging inside. Honeybees collect nectar and store the processed nectar, the honey, in beeswax honeycombs which they build on the frames within the super. The brood chambers are where queen lays her eggs and are tended to by the young worker bees.

"Each hive needs approximately 70 pounds of honey to get through the winter," Alex explains. "The surplus that the bees produce is what we harvest. Our goal is to harvest 100 lbs per hive with good management and ideal bee yard location."

Unlike some other honey producers, Alex only harvests the honey once per year. In the late summer or early fall when the supers are filled with honey, Alex spends roughly six weeks extracting the honey from the honeycomb. The honey is stored in large pails which they bottle and turn into consumer packaged product as needed.

While honey production is important to Alex, one of his top priorities is the health of their bees. Like any farmer, the animals, and in Alex's case the insects, are important to him. Alex is currently working with fellow Agricultural Campus alumni Dr. Robyn McCallum, (BSc '13, PhD '17), and Sawyer Olmstead, (BSc '16, and MSc Candidate) of the Atlantic Tech Transfer Team for Apiculture (ATTTA) conducting honey bee research.



In 2017, ATTTA initiated a scientific experiment with Alex to examine seasonal trends and management of Nosema, a micro-parasites that can compromise bee health. Together, they tracked two Nosema species throughout the year, and investigated techniques to effectively manage this disease. By better understanding and managing this disease, hives could be stronger and healthier.

Alex also works with Dr. Nancy McLean of the Department of Plant, Food, and Environmental Sciences at the Agricultural Campus to better understand from which plant species the bees collect their pollen. The field in front of their home was planted with a seed mix developed by Nancy to provide high quality food to pollinators. The research team is looking at which bee species are on which flowering species. The project helps to provide high quality food to wild, native bees but also benefits honeybees. Funding for the research that led to the seed mix came from Nova Scotia Department of Agriculture and Syngenta Canada. Testing of the seed mix for providing food to pollinators was funded by the Atlantic Ecosystems Initiative, Environment and Climate Change Canada.

In addition to his enthusiastic cooperation with apiary research, Alex also sits on the board of directors of the Nova Scotia Bee Keepers Association as vice president and secretary.

"I think it's important to give back," Alex says. "I know others who are always pitching in so I wanted to as well."

With a new year ahead of them, Alex and Heather are focusing on expanding their production and retail space and improving efficiencies at Wood 'n' Hive. Despite how far they've come in such a short time, they want to take a step back and see what can be adjusted to ease their manual labour. As a beekeeper, the work is hard and the days are long but Alex wouldn't have it any other way.

"I am so passionate about what we are doing," Alex exclaims. "It's certainly not for everyone- it's hot, sticky work and it's physical and repetitive. But there's something therapeutic and peaceful about working with the hives and being in the bee yards. The bees do their thing and I do mine."

The Crouse family is proud to have had three generations graduate from the Agricultural Campus. Alex's father, Harry (Class of '56), Alex and more recently, his son, Ben (Class of '10).



Magic Winery Bus



TOP LEFT: Allison & Dave Bowlby enjoying a stop on the wine tour. BOTTOM LEFT: Dr. David Gray with Mr. Pete Lockett, owner of Lockett's Vineyard, on the Aggies Vineyard Tour in September. ABOVE: A group of alumni and friends preparing to hop on the Magic Winery Bus in Wolfville for a day of visiting local vineyards.

Dalhousie University Coast to Coast

In celebration of Dalhousie's 200th anniversary, in 2018, we were pleased to participate in Dalhousie's Coast to Coast tour – celebrating alumni at events, in every province. We were particularly proud of our Agricultural Campus alumni who took to the stage at the events in St. John, NB, Charlottetown, PE and Truro, NS as the evenings guest speakers.



Sally & Mark Bernard (both Class of '06), just after Mark spoke of his experiences at NSAC, in Charlottetown.



Mascots Coast to Coast: Dalhousie's Tiger and Rocky the Ram, having fun in Charlottetown.



Mr. Carl Duivenvoorden (Class of '86), with Dr. David Gray, after taking the stage in Saint John, in September.



Colette Wyllie (Class of '10) shared her passion for the Agricultural Campus, at the Truro reception.



A number of NSAC alumni helped celebrate Dalhousie's 200th, in St. John.

The Atlantic Agricultural Hall of Fame

The Atlantic Agricultural Hall of Fame celebrates the contributions of four individuals to the agriculture industry in Atlantic Canada. Honoured at a ceremony in October, two of the inductees were NSAC alumni:

Robert Bourgeois (Class of '81)– New Brunswick

Robert Bourgeois is well-known within the agricultural community for his dedication to the apple industry and his on-farm innovations.

Robert has been at the forefront of agricultural innovation in New Brunswick, investing in new apple cultivars and orchard systems that are constantly evolving towards higher-density plantings. He recognized the value-added potential of making sweet cider with non-graded apples, and he also led a group of growers and wine-making enthusiasts to lobby the province to adopt what would eventually become the Cottage Winery Policy. This enabled farms to add further value to their crops by making wines.

David Coombes (Class of '63), 1941-2018 – Nova Scotia

David Coombes dedicated his career to the successful development of exhibitions and agricultural fairs across Nova Scotia. His consummate support of producers and tireless promotion of agriculture is well known and respected.

During his 53-year career with the Hants County Exhibition, he also managed the Atlantic Winter Fair for 34 years and the Nova Scotia Provincial Exhibition for 22 years. Well regarded as a keen financial manager, David introduced Nova Scotia's first casino and major lottery, Ex Hi Lotto, to ensure the



Left to right: Melvin Ling, representing the late David (Allan) Ling; Dr. Ron Taylor; Robert Bourgeois; Lisa Hines, representing the late David Coombes.

financial health of the Atlantic Winter Fair. His knowledge and work ethic were welcome additions to many agricultural associations, and he served as President of the Livestock Council of Nova Scotia, President of the Nova Scotia Hereford Breeders, and Director and President of the local Chamber of Commerce. David's passion for agriculture made him a leader within the industry.

Also honoured were:

David (Allan) Ling, 1946-2018 – Prince Edward Island
Ron Taylor – Newfoundland and Labrador



FAFU alumni gathering

This past fall, a group of FAFU alumni and guests, reunited in Guelph, ON with Dr. Claude Caldwell.

Back, left to right: Xizhong Cui, Xi Yu, Xuewei Huang and Jili Li (Class of '08 & '10). Middle, left to right: Yu Zhang (Class of '16), Mingyue Chen (Class of '12), Zhangbin Cai (Class of '15), Zhenyi Li (Class of '11 & '13), Jing Yang (Class of '12), Phoebe, Qin Xu (Class of '10), Wenfeng Zhu (Class of '18) and Qin Luo (Class of '13). Front, left to right: Yi Wang (Class of '17), Yuxi Li (Class of '12), Chen Chen (Class of '12 & '15), Xinyu Chen (Class of '12), Songliang Wang, Dalhousie Agricultural Campus, Professor Emeritus, Dr. Claude Caldwell, Xiaoling Huang (Class of '13), Huilin Hong (Dr. Wang's friend's daughter) and Yunfei Jiang (Class of '13).

Dr. Caldwell, along with Dr. David Gray, look forward to hosting a reunion, for FAFU alumni, in Toronto, ON, April 13: Contact alisha.johnson@dal.ca for details.

Blue & Gold Awards

Three deserving alumni were recognized for their exceptional achievements in the areas of volunteerism and contribution to the agricultural industry, during the annual Blue & Gold Awards in November.

Young Alumni Achievement Award – Mr. Christopher Oram

Despite growing up on a farm, Chris Oram (Class of '11) never wanted to be a farmer. Yet, ever since graduating from NSAC, he has been the manager of Mark's Market, working alongside his parents with the hopes of eventually taking over their family operation. It's not all blue skies and rich, luscious soil either, as Mark's Market produces a wide variety of vegetables in rocky soil, in Wooddale, Newfoundland. And Chris is thriving at it!

Alumni Volunteer of the Year – Ms. Rayanne Frizzell

Ms. Rayanne (Nelson) Frizzell (Class of '03) was raised to understand giving back to your community is simply what you do. While her passion for agriculture drives her volunteer initiatives, she doesn't spend her hours and minutes volunteering just to see her impact. Rayanne believes the rewards that come back to you, from volunteering, is tenfold to what you give.

Distinguished Alumnus – Mr. John Tait

Throughout his career, Mr. John Tait (Class of '66) inspired students at NSAC for over 35 years. His compassion, ability to motivate and enthusiasm for his students and the agricultural industry as a whole cultivated two generations of farm leaders and businesspeople in Atlantic Canada and beyond.



Aggies at the Blue & Gold Awards enjoyed a photo op at The Barn, following the awards dinner.



Chair, Agricultural Campus Alumni Association, Colette Wyllie (Class of '10), Mr. John Tait, Mr. Christopher Oram, Ms. Rayanne Frizzell and Campus Principal, Dr. David Gray.

McCallum wedding

We love an Aggie wedding! With more than 30 Aggies in attendance (not including future Aggies), you could easily say Dr. Robyn McCallum's (Class of '13 & '17) September 2018 wedding to Mr. Ryan Taylor doubled as an Aggie reunion. Here's proof!



Missing your Barley Ring?

A lonely Barley Ring has been found and turned in to the Alumni office. Contact 902.893.6022 / alisha.johnson@dal.ca with the style of your missing ring, approximate size, engraving and your best guess of the area in which it was lost. We would love to have it returned to its proud owner!

Student Learning Commons Opening + Truro Coast to Coast



The Truro stop of Dalhousie's Coast to Coast tour was held in conjunction with the official opening of the new Student Learning Commons, in late September. The Student Learning Commons is campus' newest space - located above the MacRae Library. The beautiful space boasts plenty of room for students to study and collaborate. It is home to two large program rooms, as well as two board rooms, the Barley Café, the CIBC Multicultural Centre, the MacRae Library Services Desk, DASA offices and more.

Alumni, donors, guests, students, staff, faculty and even those involved in the construction of the space gathered for the very exciting opening.



Class of '53 reunion

Members and guests of the Class of '53 celebrated their annual reunion with a visit to the Farm Equipment Museum in Bible Hill, in September.



Class of '56 reunion

The Class of '56 selected Sussex, NB, as the location for their annual reunion in September. They enjoyed their two-day gathering with family members and special guests.



NSAC's Class of '58 celebrated their 60th reunion during Homecoming. Below, class members gathered during the Dean's Breakfast. Far right, Tom Dunphy and Eric Jennings.



Homecoming

Keeping with tradition, Homecoming was celebrated on campus, although a bit earlier than usual. Several events were held for alumni and guests, including the annual Dean's Breakfast in the Library.

A special celebration took place, during Homecoming, with the Class of '56. Classmates generously donated a granite bench to campus, which was officially unveiled and celebrated with class members, family and special guests.

Mark your calendar for Homecoming 2019: October 17 - 19.

Interested in initiating a reunion for your class? Contact the Alumni office: agalumni@dal.ca / 902.893.6022

Class of '60 reunion

Members of the Class of '60 and guests visited campus, in late August, enjoying tea with Dr. David Gray before touring the Springhill area.



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