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July 2021



Alliance Innovations

A collaboration between OMAFRA and the University of Guelph

Stories of the Alliance people, places and programs generating impact in the agri-food sector in Ontario and around the world.

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What's New?



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Improving Productivity in Ontario's Vegetable Farming Sector:
Governments fund expanded work at the Ontario Crops

Research Centre – Bradford

On June 29, Caroline Mulroney, MPP for York-Simcoe and Ontario's Minister of Transportation and of Francophone Affairs, visited the Ontario Crops Research Centre – Bradford, formerly known as the Muck Research Station, to announce that the federal and provincial governments will invest \$150,000 to support agri-food innovation in the vegetable farming sector.

The funding will modernize existing infrastructure in the greenhouse such as venting, climate control systems and lighting systems. These important upgrades will support centre researchers in projects to help farmers grow crops more effectively and combat pests that might affect vegetable yield.

This investment from both levels of government will benefit local Holland Marsh farmers who produce \$50 million worth of crops annually, accounting for 15 per cent of Ontario's total vegetable production.

[Read the full news release from OMAFRA >](#)

Alliance funding recipient wins U of G's 2021 3-Minute thesis competition with feather-pecking presentation

Congratulations to PhD candidate Claire Mindus who placed first and won the Community Choice Award at the 2021 [University of Guelph 3-Minute Thesis competition](#). Additionally, she also recently won the 13th Campbell Centre for the Study of Animal Welfare symposium with her 3MT video.

Claire's research received Alliance funding through Dr. Alexandra Harlander's research project on how specific gut microbes affect feather pecking development. Feather pecking can hamper the bird's thermoregulation, communication and movement, resulting in economic loss for producers. The behaviour has also been linked to stress, which can alter egg production and reduce revenue for producers.

"Feather pecking is a major animal welfare issue and is being displayed in all types of housing systems and all over the world. I am extremely thankful for Alliance funding and the use of the Ontario Poultry Research Centre for my project. Our meaningful results represent real progress in the field and could improve the welfare of billions of chickens." ~ *Claire Mindus, PhD candidate*

Claire Mindus, PhD Candidate in Animal Biosciences



The Three Minute Thesis (3MT®) is an academic research communication competition developed by the University of Queensland, Australia. Graduate students from all seven University of Guelph colleges earned a chance to compete in this 2021 3MT® U of G campus final. The winner of the University of Guelph 3MT® competition will represent U of G at the provincial competition.

Highly Qualified Personnel program scholarship recipients

The Ontario Agri-Food Innovation Alliance's Highly Qualified Personnel (HQP) scholarship program, jointly funded by [Food from Thought](#) and the [Alliance](#), supports the development of highly skilled graduates to become future researchers, policy-makers, business leaders and innovators who can meet the changing demands of the agri-food industry.

The program includes an Innovation and Entrepreneurship course, in which students become partners with external organizations to solve real-world challenges. HQP scholarship recipients also conduct graduate research projects that address Ontario Ministry of Agriculture, Food and Rural Affairs priorities and support the mission and vision of the Food from Thought program.

Meet the scholars

Each month we will introduce several forward-thinking HQP scholarship recipients and their research projects. Each link will take you to a biography where you can learn more about scholars' research and collaborations, their motivations and the potential impacts of their research.



Maleeka Singh, Department of Food Science

Maleeka is currently pursuing a M.Sc. in Food Science. Her research is a collaborative project between the Food Science and Integrative Biology departments focusing on food forensics to detect seafood fraud. Food fraud impacts the economy, health and the environment, so this



research has numerous applications to the industry.

[Learn more about Maleeka's research >](#)



Sudhanshu Sudan, Department of Animal Biosciences

Earlier, Sudhanshu focused on translational research in disease pathogenesis, drug development and bacteriotherapy. Now in Dr. Julang Li's lab, he is characterizing and developing novel biotherapies to stabilize gut microbiome involving next-generation probiotics as well as antimicrobial peptides to improve gut health and completely replace the use of antibiotics in livestock.

[Learn more about Sudhanshu's research >](#)

Focus ON: Q&A with graduate student researcher



Graduate student researcher Rebecca Lawson is excited to begin her project at the Ontario Aquaculture Research Centre, a state-of-the-art facility owned by the Government of Ontario and managed by U of G through the Alliance. The centre supports innovative research for Ontario's aquaculture sector and is a key space to train the next generation of agri-food innovators.

Growing up, Rebecca always had a passion for the aquatic environment. She moved to Halifax to complete her B.Sc. in marine biology at Dalhousie University and graduated in May 2020 with a certificate in aquaculture. In January 2021, she began her M.Sc. thesis with Dr. David Huyben, Department of Animal Biosciences, on an Alliance-funded project she hopes will advance her career in the aquaculture industry.

We caught up with Rebecca to learn more about her research goals.

What challenge were you setting out to address when you started your research?

My research plans are to address the nutritional requirements of lake whitefish. My project will aim to assess the effects dietary lipids, proteins and insect meal have on the growth and microbiome of lake whitefish (*Coregonus clupeaformis*). My project will consist of a four-month growth trial where lake whitefish will be fed various diets differing in lipid and protein levels as well as a diet that will include insect meal as a feed additive. I will also be conducting a meta-analysis to rank the factors that affect the gut bacteria in salmonids. I hypothesize that the growth of lake whitefish will increase when fed a lower lipid-to-protein ratio diet because it will better fulfill their nutritional requirements. In addition, I hypothesize that growth will also increase when their diet includes insect meal, due to the beneficial compounds it provides, which may diversify the gut microbiome.

What impact do you anticipate your work will have on the agri-food sector and whom will it benefit?

I think the results of my research project will help optimize a commercial aquaculture feed for lake whitefish. This will allow for the successful rearing of lake whitefish for aquaculture purposes and could also help diversify the salmonid aquaculture industry in Ontario. Aquaculture feed producers and finfish farmers would benefit the most from the results of my research.

Why do you think it is important to share the results of research like yours?

The results could be used to formulate feeds and provide producers with a better understanding of the nutritional requirements and welfare of their fish.

What would your research program look like without Alliance funding/research centre access?

My research project would not be possible without the help of the Ontario Aquaculture Research Centre. In addition to providing laboratory space to conduct my trials, the staff at the research centre will play a vital role in caring for the fish and assisting with sampling. I am looking forward to working with the staff at the Ontario Aquaculture Research Centre and learning from them!

What inspired your interest in this challenge/issue?

Throughout my undergraduate studies, my passion for aquaculture continued to grow, and I knew I wanted to pursue a career in the aquaculture industry. I developed an interest in research that aims to improve the aquaculture industry in Canada. I have always been interested in the ability aquaculture has to relieve pressures from wild-caught fisheries. After learning about lake whitefish and its potential as an aquaculture species, I quickly became interested in helping establish it as an aquaculture species here in Ontario and the rest of Canada.

What kind of response have you received regarding your research?

My adviser and advisory committee members are all very excited about the project, and this excitement is echoed in discussions with my peers about the project.

Where do you see yourself after your MSc is complete?

I hope to continue conducting research for the aquaculture industry. I would love to continue to work with whitefish to increase their success as an aquaculture species. I

could imagine myself working in this capacity in an academic environment or with a nutrition company.

Do you know a graduate student researcher who is working at one of Ontario's agricultural research centres or receives Alliance funding and would like to share their journey?

Contact us at kttadmin@uoguelph.ca to help us tell their story.

Agri-Food Yearbook edition of *Research* magazine packaged with *Ontario Farmer*



Watch for your July issue of *Ontario Farmer* for the 2020-21 Agri-Food Yearbook edition of *Research* magazine. This year's edition features research during the pandemic, celebrating 65 years of long-term crop rotation and more.

For the past 10 years, the Ontario Agri-Food Innovation Alliance has mailed this special issue of *Research* magazine with your subscription to *Ontario Farmer* and through our network of partners and colleagues.

Stay tuned for our August newsletter for the digital edition of the Yearbook as well as an opportunity to voice your opinion on future Yearbook editions.

Media

A selection of Alliance people, places and programs cited in popular and trade media.

[Asparagus crop developed by U of G researchers decades ago continues to be a game changer for the industry](#) (June 10, CTV Kitchener-Waterloo)

The Guelph Millennium variety, developed by Dr. David Wolyn and his team, makes up most of the asparagus acreage in Ontario today. Long-term Alliance investment brought Wolyn's asparagus variety to market, allowing the \$25-million Ontario asparagus sector to bring homegrown goodness to consumers in the province and around the world.

[Social media prove a reliable predictor of COVID-19 waves: U of G study](#) (June 9, U of G News)

Alliance-funded research led by Dr. Rozita Dara originally focused on tracking global

outbreaks of avian influenza. This research has recently expanded to use social media to predict waves of COVID-19.

Events

SAVE THE DATE: Beef at Guelph Research Day – Saturday, August 14, 2021

Beef Farmers of Ontario, the University of Guelph and OMAFRA are excited to host a free producer Research Day in August, highlighting research at the University of Guelph. This virtual meeting will allow producers across the province to learn more about research on campus, "tour" the barns and pastures and ask questions.

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