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Dec. 2020



A collaboration between OMAFRA and the University of Guelph

## Alliance Innovations

*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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In this issue:

- Ontario Dairy Research Centre plays a key role in \$12-million dairy genome project;
- Ontario's agri-food research centres get new names;
- U of G prof. named one of Canada's most powerful women for 2020;
- Focus on Ontario Crops Research Centre – Elora;
- News, publications, events and more.

## What's New?



### U of G holiday hours for December 2020 to January 2021

The University will be closed starting on Dec. 23, 2020 and will re-open on Jan. 4, 2021.

All of us at the Office of



### USEL program open for applications through Recruit Guelph

The Undergraduate Student Experiential Learning (USEL) program gives senior U of G undergraduate students the opportunity to gain work experience and



### U of G free online policy fellowship program

The Research Innovation Office at U of G is recruiting decision-makers in government, industry and NGOs for its online policy fellowship in agriculture,

Research, Agri-Food Partnership wish you a safe and happy holiday and a happy new year. We look forward to connecting with you again in January.

hone their KTT skills through a summer work placement. The program is currently recruiting for summer 2021.

food and biodiversity. The deadline to apply for the winter 2021 session is Jan. 15.

[See available positions here >](#)

[Learn more or nominate someone here >](#)

## Research and Program Highlights

### Ontario Dairy Research Centre to play key role in new \$12-million genomics research project



The University of Guelph will lead a global dairy farming genomics project expected to revolutionize breeding in Canada's multibillion-dollar dairy farming industry.

Dr. Christine Baes, a professor in the Department of Animal Biosciences, will head the [four-year, international and multi-disciplinary initiative](#) that aims to identify novel genetic traits for a new selection index for dairy cattle resilience.

Baes said the group will develop traits that help animals adapt to changing environmental conditions while maintaining milk productivity, dairy herd health and cow fertility – all in a way that feeds people and protects the environment.

The Ontario Dairy Research Centre, located 15 minutes' drive north of Guelph, has been an integral part of this research since 2016.

"There are currently only two dairy research facilities in Canada that have the capability for this type of data collection, and Elora is one of them," says Baes.

Read more about [data to be collected at the Ontario Dairy Research Centre >](#)

### Ontario's agri-food research stations to be renamed

Research sites that are part of the province-wide network of research stations will be referred to as "centres" and will be distinguished by the commodity (e.g., beef, crops) and location.

The change emphasizes the provincial investment through the Agricultural Research Institute of Ontario (ARIO) as well as the primary function of each site. The centres are managed by the University of Guelph through the Ontario Agri-Food Innovation Alliance.

Examples of the new naming convention:

- *The Ontario Crops Research Centre has 10 sites, including the Ontario Crops*

*Research Centre – Bradford.*

- *The study was completed at the Ontario Dairy Research Centre.*
- *Research is underway at the Ontario Aquaculture Research Centre in Alma.*



The term “station” will continue to be used to describe locations that house multiple research centres. For example: *The Elora Research Station is home to the Ontario Beef Research Centre – Elora, the Ontario Dairy Research Centre and the Ontario Crops Research Centre – Elora.*

The terms “facility” and “building” will be reserved for infrastructure that supports the research centres. For example: *The Ponsonby General Animal Facility supports several research centres.*



The new names are already in use on the [Alliance website](#).

Over the next few months other materials, such as videos and brochures, will be updated. New signage at the stations may take more time. Thank you for your patience as the new naming convention is put into place.

If you have any questions or concerns, please contact [Jill Davies](#), communications and marketing manager at the University of Guelph in the Office of Research, Agri-Food Partnership.

Visit the [Research Centres page on the Alliance website](#) >

## Manju Misra named one of Canada's most powerful women for 2020

The University of Guelph's Dr. Manju Misra has been named one of the Women's Executive Networks (WXN) Most Powerful Women - Top 100, for 2020. The award recognizes outstanding women across Canada who advocate for workforce diversity and inspire tomorrow's leaders. Misra was selected in the Manulife Science and Technology Award category.



On Dec. 16 the University also announced that Misra has been appointed as Canada Research Chair in Sustainable Biocomposites. Tier 1 chairs are considered world leaders in their field and receive \$200,000 a year for seven years.

Misra is a lead scientist at the U of G Bioproducts Discovery and Development Centre (BDDC) working with Dr. Amar Mohanty, the Director of BDDC; both are cross-appointed as professors in the School of Engineering and Department of Plant Agriculture. Materials developed at the BDDC are designed to be sustainable substitutes for conventional plastics in a variety of products.

Misra and the multidisciplinary team at the BDDC are conducting several projects that are supported by funding from the Ontario Agri-Food Innovation Alliance and that stand to benefit Ontario by using natural materials to provide “greener” alternatives to petroleum-based (plastic) products. They are developing biodegradable and compostable bale wraps to replace non-biodegradable plastic films, and they are investigating the development of single-use biodegradable straws made from bioplastics.

Read about [how Alliance funding has contributed to Misra's research >](#)

## Focus ON: Ontario's Agricultural Research Centres

*A world-class network of research centres across the province, owned by the Agricultural Research Institute of Ontario (ARIO) and operated and managed by the University of Guelph, enables multidisciplinary research that powers innovation in Ontario.*

### Ontario Crops Research Centre - Elora

About a fifteen-minute drive north of Guelph sits one of the largest agricultural research farms in Canada, covering 2,310 acres. The Elora Research Station—in existence since 1966—is now home to the Ontario Beef Research Centre, the Ontario Dairy Research Centre, the Ontario Crops Research Centre – Elora and will also become the home of the Ontario Swine Research Centre.

This month's focus is on the crops research centre, which covers nearly 400 acres. More than 82 research fields are used for research into breeding, production methods, environmental programs and soil health in cereals (wheat, barley, oats), corn, edible beans, soybeans, canola and forages.



The Ontario Crops Research Centre – Elora provides for all aspects of pre- and post-harvest cropping operations, including seed treatment, processing, storage and security. Three large buildings are used for threshing, sample storage, sample freezing, sample drying, seed cleaning, machinery storage and repair. The facilities also include a shop, indoor and outdoor crop dryers, temperature-controlled seed storage, equipment storage, and crop and plot planting and harvesting equipment.

There are two soil types at this location: London loam and Guelph loam. Loam is predominantly sand and silt with a smaller amount of clay. It contains more nutrients, moisture and humus (organic material) than sandy soils and has better drainage than clay soils.

The research fields at the centre are tile-drained. This type of drainage system removes excess water from below the soil surface, increasing the amount of air in the soil's pores that is necessary for crops to grow.

In addition to the crops listed above, research at this site includes herbicide evaluation and development trials; forage and pasture management; potato, native flower and cole crop (cruciferous vegetable) development; and evaluation of crop rotations on soil structure, crop performance and manure management.





The Elora site is also home to 18 lysimeters that are the first of their kind in North America. These large steel cylinders surround undisturbed soil cores and are equipped with sensors at various depths. Researchers use them to study the impacts of various crop rotations on soil health.

Learn more about how lysimeters are used for soil health research from Prof. Claudia Wagner-Riddle, School of Environmental Sciences, in the recording from the Dec. 1 webinar *Exploring Research at the Ontario Crops Research Centre – Elora* (her part starts just before 10:00).



## Active research at the Ontario Crops Research Centre in Elora

Here is a sample of active projects. You can explore other ongoing [research projects at the Ontario Crops Research Centre – Elora](#) on the Alliance website.

### Producing a year-round supply of high-quality potatoes for Ontario

- This project will help the Ontario potato sector remain competitive by extending the growing season for Ontario chipping potatoes.

### Optimizing quinoa production systems for Ontario - A physiology-based approach to improved

## Celebrating 40 years of long-term rotation plot trials



## agronomics

- This project will help to improve best management practices for quinoa production in Ontario with respect to seeding rates and stand establishment; fertility management; frost tolerance; and responses to soil water deficits.

### Determination of the efficacy of new herbicides and new herbicide combinations for development of integrated weed management programs

- Unbiased, individual evaluations of new products and techniques will enable growers to respond effectively to emerging weed challenges, maximize crop production and be more judicious with herbicide use.



Questions about the studies listed or about ongoing research projects at the research centres?

Contact [researchstation.info@uoguelph.ca](mailto:researchstation.info@uoguelph.ca).



### Did you know...?

The Ontario Crops Research Centre – Elora hosts an official Environment and Climate Change Canada weather station (a license agreement between Environment and Climate Change Canada and the ARIO). Measurements include air and soil temperature, rainfall, snow level, water table, wind and wind direction.

At Elora (and the Ontario Crops Research Centre – Ridgetown), long-term rotation plot research trials have occurred for decades – 2020 marks the 40th anniversary of the Elora plots. Findings have generated evidence for farmers to use in making decisions about crop rotation, tillage systems and nitrogen management. The results benefit the agri-food sector in Ontario and around the world.

The Alliance partnered with [SOILS AT GUELPH](#) to produce a series of infographics on the importance of crop rotation and how it affects on-farm outcomes including crop yield, resilience during dry years, nitrogen use efficiency and soil health. The series helps crop advisers and farmers make on-farm decisions to remain competitive and sustainable.

To see or download the *Crop Rotation Counts* series of infographics, visit [Crop Rotation Counts: Key Findings from Long-Term Rotation Plot Research](#).

## Media and Publications

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

1. [University of Guelph Researcher Earns Award for Waterless, N95 Mask Sanitization Unit](#) (*Guelph Mercury Tribune*, Nov. 28)
2. [U of Guelph Researcher Earns Award for Invention that Quickly Disinfects Everyday Items from Coronavirus](#) (KWNOW Local News, Nov. 25)
3. [Home Disinfection Tool for COVID-19](#) (*Food in Canada*, Nov. 25)

4. [U of G Prof Named One of Canada's Most Powerful Women for 2020](#) (U of G News Service, Dec. 1)
5. [World Soil Day: U of G and OMAFRA Host Online Soil Forum](#) (U of G News Service, Dec. 4)
6. [U of G Leading Global Dairy Farming Genomics Project](#) (U of G News Service, Dec. 10)
7. [Developing an Ontario Soil Information System | Asim Biswas](#) (SOILS AT GUELPH [YouTube], Dec. 4)

## Events



### **Skills for Research Impact re-starts with Planning for Research Impact workshop**

This workshop series is for faculty, research staff and graduate students interested in enhancing the impact of their research. Through five core sessions facilitated by impact experts, participants will learn how to successfully plan, execute and evaluate knowledge mobilization activities.

[Learn more \(registration open in January\) >](#)



### **Registration is open for the Midwest Cover Crops Council (MCCC) Conference Feb. 23-25**

The conference allows farmers, researchers and others interested in cover cropping and soil health to exchange innovations and share expertise. This year's conference is organized by SOILS AT GUELPH, OMAFRA and the Ridgeway Business Development Centre.

[Preview the agenda and register >](#)



### **Soil Health Research Forum recording and supplementary materials available**

Did you miss part of the *Promoting Behaviour Change for Soil Health: Insights From Recent Social Science Research* event on Dec. 7? View additional soil health resources and bookmark this link—session recordings will be posted soon.

[See the soil health resources >](#)

## Make an Alliance Connection



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