Ontario Agri-Food Innovation Alliance

GROWING ONTARIO SOLUTIONS

SUSTAINABILITY

Supporting the triple P bottom line: for the planet, people and profit

UNIVERSITY of GUELPH

IMPROVE LIFE.

OMAFRA–UNIVERSITY OF GUELPH AGREEMENT

ANNUAL REPORT 2021/22

Ontario

Growing Ontario solutions

Lisa Thompson

Minister of Agriculture, Food and Rural Affairs

I am pleased to present the 2021/22 *Growing Ontario Solutions* report in partnership with the University of Guelph.

The Ontario Agri-Food Innovation Alliance is a unique collaboration that has existed since 1997 between the Ministry of Agriculture, Food and Rural Affairs and the University of Guelph. The Alliance is a significant economic driver for the province, returning approximately $1.4 billion annually to Ontario's economy, advancing research and innovation and contributing to the success and competitiveness of Ontario's agri-food sector.

The effects of a global pandemic were still strongly felt in 2021/22 by Ontario's agri-food sector. But as you can read in this year's *Growing Ontario Solutions*, world-class research funded by the Alliance continued to yield incredible results that helped support rural communities, advance farm management practices, improve production efficiency and drive economic growth. This research, supported by the Ontario government, benefits the people of Ontario by furthering the development of new food products and agricultural advancements, and driving economic growth in the sector.

Through the Ontario government's partnership with the University of Guelph, we are helping Ontario's agri-food sector grow and innovate so that farmers can remain competitive on a global scale and Ontario can continue to be a leader in agri-food.

Dr. Charlotte Yates

President and Vice-Chancellor

University of Guelph

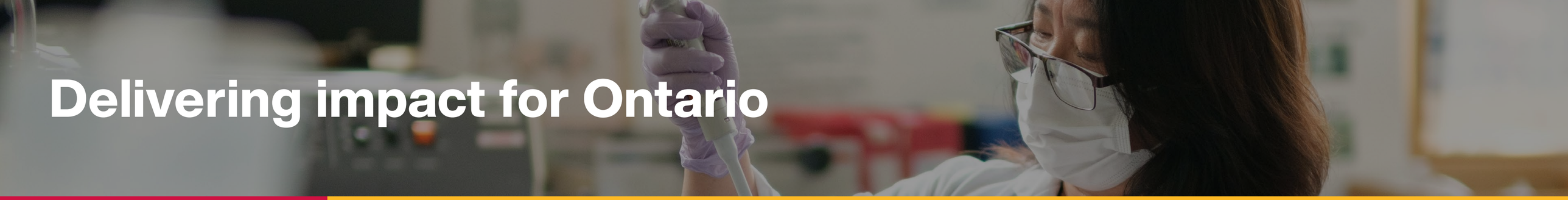
The University of Guelph is proud to partner with the province of Ontario through the Ontario Agri-Food Innovation Alliance to support a sustainable agri-food sector.

Through research and technological advancement, we ensure that Ontarians have access to healthy, safe food and that our farmers and businesses have the data and information they need to thrive.

Over the past year, the Alliance has built on our commitment to the long-term success of our farmers and processors and the entire agri-food sector. As you will see in these pages, we have managed to build on our success, while helping consumers and industry partners continue to navigate the challenges the pandemic has created for the sector.

A sustainable agri-food sector is one that supports environmental, social and financial success. The Alliance is proof that we can leverage cutting-edge research and innovation to meet the goals and ensure the longevity of all Ontario communities and industries.

As you read about the global impact of the Alliance, I encourage you to think of how your work as a researcher, farmer, consumer or industry or community partner may benefit from getting involved with us. We always welcome opportunities for collaboration that will grow Ontario's position as a global leader in agri-food research and innovation.



Delivering impact for Ontario

The Ontario Agri-Food Innovation Alliance is a collaboration among the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Agricultural Research Institute of Ontario (ARIO) and the University of Guelph (U of G).

We work together to create Ontario solutions with global impact by directing the efforts of our people, places and programs toward six key outcomes that support competitive and sustainable agri-food and rural sectors—at home and around the world.

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Supporting the triple P bottom line

As an engine for research, collaboration and innovation, the Ontario Agri-Food Innovation Alliance delivers sustainable agri-food solutions that support the planet, people and profit.

A sustainable agri-food sector is one that supports economic growth while respecting society's needs and our planet's future. At U of G, we call this the triple P bottom line for sustainability: for the planet, for people and for profit. And the way to get there is to continue to invest in research, technology and innovation, all of which are central commitments of the Ontario Agri-Food Innovation Alliance.

Two key events of 2021/22 underscored the need to renew our focus on the strategic research investment required to deliver innovation for the agri-food and rural sectors and to meet the sustainability challenge.

First, at their meeting held in Guelph in November 2021, federal, provincial and territorial agriculture ministers reiterated Canada's commitment to tackle environmental protection through targeted investment in science, research and innovation, guided by collaboration and collective outcomes and focused on sustainability.

Second, the 2022 Ontario provincial budget, called Ontario's Plan to Build, reminds us that embracing innovation is key to the success and growth of the agri-food sector.

Growing Ontario Solutions demonstrates how the people, places and programs of the Alliance contribute to the success and sustainability of Ontario's agri-food sector and promote rural economic development. This longstanding collaboration between U of G and the Government of Ontario is the perfect example of how strategic investments in research, training and laboratory services can contribute to robust and meaningful sustainability across the agri-food and rural sectors.

Dr. Malcolm Campbell
Vice-President,
Research
University of Guelph

Dr. Beverley Hale
Associate Vice-President,
Research
(Agri-Food Partnership)
University of Guelph

Leveraging U of G's agri-food leadership

The University of Guelph is a global leader in agri-food and rural research. The Government of Ontario's investment through the Alliance leverages U of G's world-class expertise in agriculture, food and veterinary sciences to meet the research and innovation needs of today's agri-food sector while supporting a sustainable and competitive tomorrow.

#1
#5

Leader in veterinary science

#1 in Canada
#5 in the world[1]

[1] 2022 ranking of veterinary science programs by Quacquarelli Symonds

#1
#21

Leader in agricultural sciences

#1 in Canada
#21 in the world[2]

[2] 2021 ranking of best universities for agricultural sciences by *U.S. News & World Report*

#1
#20

Leader in food science and technology

#1 in Canada
#20 in the world[3]

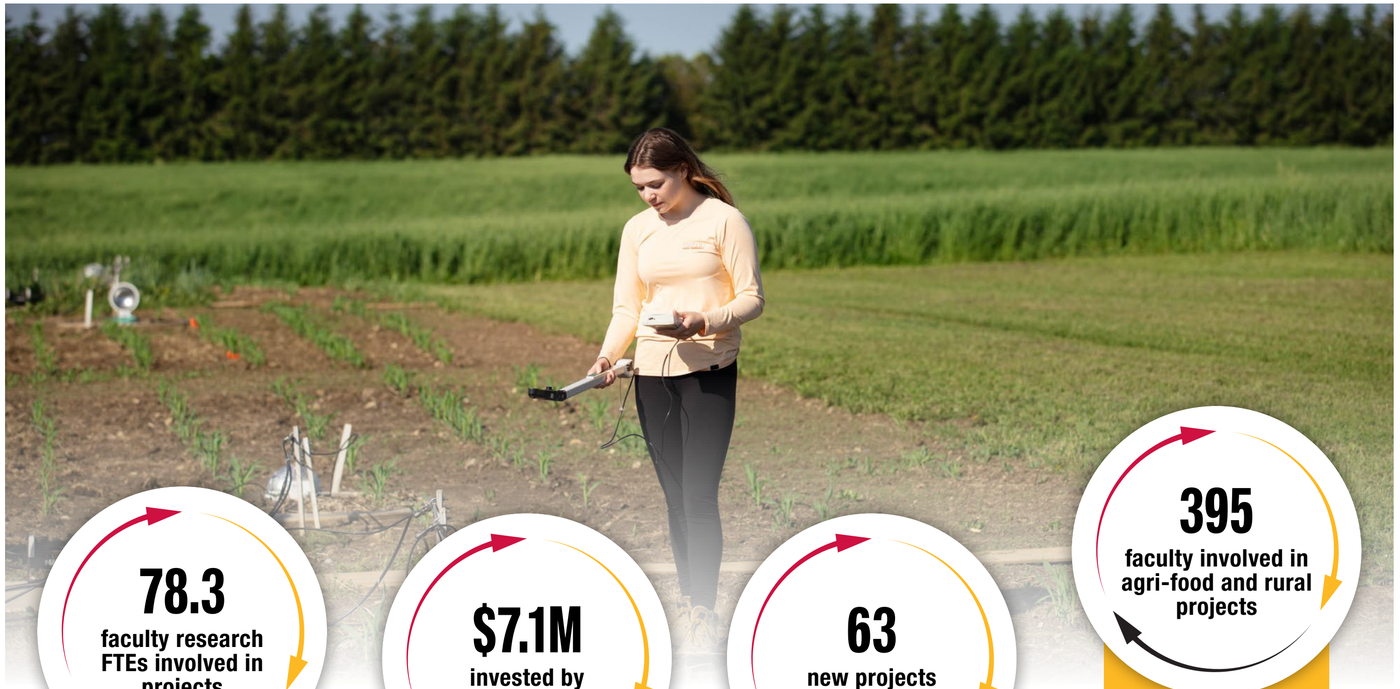
[3] 2021 ranking of best global universities for food science and technology by *U.S. News & World Report*

OUTCOME 1

A world-class research and innovation system

Innovation increases competitiveness, improves adaptability and strengthens sustainability in the agri-food sector.

The Ontario Agri-Food Innovation Alliance makes targeted investments in research, technical personnel and a cross-province network of research centres to deliver sustainable agri-food innovations that make a difference for Ontario's producers, businesses and environment.



78.3
faculty research FTEs involved in projects

Faculty full-time equivalents (FTEs) directly involved in Alliance-funded research projects

$7.1M
invested by research partners

Direct third-party investment in Alliance-funded research projects

63
new projects awarded

Operating funding for projects that drive innovation in the agri-food sector

395
faculty involved in agri-food and rural projects

In addition to Alliance-funded projects, U of G faculty receive external funding to conduct research that supports OMAFRA priorities

The metrics presented on this page are from 2021/22.

Infrastructure investment lets innovators dig in

U of G researchers leverage the Agricultural Research Institute of Ontario's long-term investment in the province-wide network of research centres to attract additional funding for state-of-the-art technology to advance research.

The Canada Foundation for Innovation and the Ontario Ministry of Economic Development, Job Creation and Trade granted $2 million for the installation of 18 soil lysimeters—the first of their kind in North America—at the Ontario Crops Research Centre – Elora.

The state-of-the-art soil health monitoring station generates 1.8 million data points per day, allowing researchers to analyze soil characteristics, drainage and greenhouse gas production under different cropping systems. The results will inform practices to improve productivity and soil health, helping producers stay profitable and sustainable.

Photo: Karen Whylie / University of Guelph Grad Studies

OUTCOME 1

Leveraging OMAFRA support to expand agri-food research

#1 RESEARCH PROGRAM

$61.9M
external research dollars awarded

Funding granted to the University of Guelph in 2021/22 that supports OMAFRA research priorities

As internationally recognized experts, U of G researchers attract funding from a variety of provincial, national and private-sector partners to advance their agri-food and rural research projects. These projects support OMAFRA research priorities and contribute to the health and sustainability of Ontario's agri-food sector and rural communities.

Thanks to the success of U of G researchers in funding competitions outside of the Alliance, U of G leverages OMAFRA's investment to deliver more world-class agri-food and rural research for Ontario to help make the triple P bottom line of sustainability a reality.

OUTCOME 1

Leveraging OMAFRA support to expand agri-food research

RESEARCH PROGRAM

Between 2020 and 2022, 12 U of G researchers leveraged OMAFRA investments to attract more than $4 million in new funding from the Natural Sciences and Engineering Research Council of Canada's (NSERC) Alliance grants program, expanding their research projects and generating new knowledge and innovations that benefit the agri-food sector in Ontario and across Canada.

NSERC Alliance grants support collaborative research projects between researchers and partner organizations from the private, public and not-for-profit sectors.

6.3:1
ratio of leveraged funding

For every $1 of OMAFRA funding, U of G researchers leveraged $4.90 from NSERC plus $1.40 from industry partners, for a total of $6.30

$4.0M
in NSERC Alliance grants

Value of grants awarded to U of G researchers with OMAFRA support since 2020

12
U of G researchers

Number of U of G researchers who leveraged OMAFRA support to attract NSERC Alliance grants

33
partners

Organizations contributing to U of G-led NSERC Alliance grants

$1.2M
in cash contributions

Funding from partner organizations to NSERC Alliance grant projects

Data from NSERC Alliance grants awarded between 2020 and 2022

OUTCOME 1

Research that is farm tested

Ontario's agri-food sector is highly productive, partly due to its advanced use of technology. To support this tech-savvy sector, researchers need access to cutting-edge research spaces to identify and pilot new, innovative on-farm practices that drive productivity and sustainability.

Fourteen research sites across the province support research that is future-focused and farm-tested.

These sites are places where researchers and third-parties can collaboratively work together to test new technologies for the benefit of the sector.

Ontario's agri-food research centres are owned by the Agricultural Research Institute of Ontario and managed by the University of Guelph through the Ontario Agri-Food Innovation Alliance.

$4.9M
in revenue generated

Revenue from the sale of agricultural products, including milk, eggs and crops

1.5M
animal research days

Number of research days that support animal welfare and enhance livestock production and sustainability

202.6
hectares used in research

Land used to support crop research by identifying practices to reduce disease, manage pests, support soil health and enhance plant breeding

Research Focus

- Aquaculture
- Beef
- Dairy
- Equine
- Field crops
- General animal facility
- Horticulture crops
- Vegetables
- Poultry
- Sheep
- Swine

Location

1. Alma
2. Arkell
3. Bradford
4. Cedar Springs
5. Elora
6. Emo
7. Huron
8. New Liskeard
9. Ponsonby
10. Ridgetown
11. Simcoe
12. Vineland*
13. Winchester
14. Woodstock

*Vineland Research and Innovation Centre is operated with support from the Ontario Agri-Food Innovation Alliance.

OUTCOME 1

Infrastructure fuels innovation and sustainability

Ontario's network of agri-food research centres provide world-class research infrastructure that fuels innovation, sustainability and profitability in the agri-food sector.

The University of Guelph works with government and industry partners to deliver on the ARIO's infrastructure strategy by continually enhancing Ontario's agri-food research centres with state-of-the-art technology that supports a competitive and sustainable agri-food sector.

Ontario's network of agri-food research centres is owned by ARIO and managed by the University of Guelph through the Ontario Agri-Food Innovation Alliance.

Key 2021/22 infrastructure updates

	FUNDING COMMITTED	CONSTRUCTION UNDER WAY	FACILITY OPEN
Precision Feed Facility Elora Research Station	✓	✓	✓ JAN 2021
Feedlot Facility Ontario Beef Research Centre—Elora	✓	✓	✓ NOV 2021
Agronomy Services Building Ontario Crops Research Centre—New Liskeard	✓	✓	✓ APR 2022
Ontario Swine Research Centre Elora Research Station	✓	JULY 2021	OPENING SUMMER 2023

Look inside the new Precision Feed Facility

"Having a consistent diet fed to dairy cows day-in, day-out will pay dividends in terms of greater intake, greater milk production and greater efficiency."

—Dr. Trevor DeVries, Department of Animal Biosciences, University of Guelph

"Certainly, this is unique within Canada, and probably even in the world, to have such high-quality facilities for research."

—Dr. Katharine Wood, Department of Animal Biosciences, University of Guelph

OUTCOME 1

Delivering innovative and sustainable on-farm practices

RESEARCH CENTRES

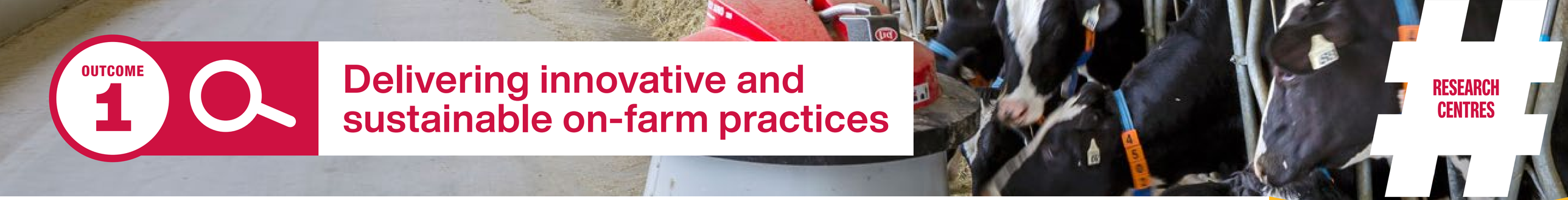
121
research projects using research centres

More than 100 projects active in 2021/22 will use a research centre, promising more new on-farm innovations

Research projects use Ontario's agri-food research centres to help identify innovative on-farm practices to support the agri-food sector.

As research farms that are commercial scale but not dependent on a commercial revenue, these spaces allow researchers and partners from across the agri-food sector to identify practices and technology that are sustainable for people and the planet without compromising profit.

Ontario's agri-food research centres are owned by the Agricultural Research Institute of Ontario, an agency of the Government of Ontario, and managed by the University of Guelph through the Ontario Agri-Food Innovation Alliance.



OUTCOME 1

Delivering innovative and sustainable on-farm practices

RESEARCH CENTRES

Through the Ontario Agri-Food Innovation Alliance, OMAFRA's investment in research centres and environmental stewardship research has helped dairy producers lower their carbon footprint while supporting the farmer's bottom line, based in part on the work of Dr. Claudia Wagner-Riddle at U of G.

Wagner-Riddle, a professor in the School of Environmental Sciences, has been driving continuous improvement in best management practices for dairy producers for decades. Over the past 10 years, her research has helped Canadian dairy farms reduce their greenhouse gas emissions by seven per cent.

Read the full article on the Alliance website.

Dr. Wagner-Riddle's research and knowledge translation and transfer work helps producers understand how feed quality, including forage quality and feed additives, can impact methane emissions. Fact sheets summarizing these research-based best practices are available via the Dairy Farmers of Canada website.

The next generation of sustainable innovation

U of G continues to lead the development of sustainable on-farm practices with a four-year, $12-million international dairy genomics project that leverages Alliance-funded infrastructure. The groundbreaking initiative, led by Dr. Christine Baes in the Department of Animal Biosciences, will enhance the competitiveness and sustainability of the Canadian dairy industry by breeding healthier, more resilient cows.

The Ontario Dairy Research Centre will be one of the locations of the research project, which includes partners in government, industry and academia. See updates at resilientdairy.ca.

OUTCOME 2

The next generation of agri-food innovators

To address the challenge of sustainability—now and in the future—we need a talented pool of thought leaders and problem solvers.

The Ontario Agri-Food Innovation Alliance is helping meet the sustainability challenge by training the next generation of agri-food innovators.

Three Alliance initiatives are dedicated to the development of skilled, forward-thinking agri-food leaders for Ontario:

- Highly Qualified Personnel (HQP) scholarship program
- Veterinary Capacity Program (VCP)
- Undergraduate Student Experiential Learning (USEL) program

The metrics presented in this report are from the 2021/22 fiscal year.

15
D.V.Sc. students trained

VCP supports veterinary capacity in areas related to OMAFRA priorities

294
HQP engaged in research

191 graduate and post-doctoral researchers and 103 diploma and undergraduate students engaged in research projects supporting OMAFRA priorities

45
HQP scholars funded

HQP scholarships support the next generation of agri-food researchers, policy makers and innovators

HQP scholars work with industry, government to enhance skills

Explore the links below to learn about these scholars' work experience.

Increasing the Uptake of Research Innovations on Ontario Livestock Farms

De La Mer Fresh Fish Market: Three Lessons We Will Take with Us into the Workforce

OUTCOME 2

Experiential learning attracts undergraduates to agri-food

UNDERGRADUATE STUDENT EXPERIENTIAL LEARNING

10
students

The USEL program welcomed 10 students in 2021/22. Since its inception, 70+ students have participated in the program.

The Undergraduate Student Experiential Learning (USEL) program exposes U of G students to opportunities outside of their lecture halls, providing hands-on learning of additional skills for a professional career in the agri-food sector.

After more than a decade, the USEL program continues to attract applications from as many as 60 undergraduates a year eager for experience in careers in the agri-food sector.

OUTCOME 2

Experiential learning attracts undergraduates to agri-food

#UNDERGRADUATE STUDENT EXPERIENTIAL LEARNING

In 2021, U of G undergrads Riley McConachie and Hannah Michaels were accepted to the USEL summer program, where they collaborated on industry issues with OMAFRA specialists and U of G faculty who provided mentoring, coaching and advising.

"The premise is that students gain experience working on an existing research project in the agriculture industry and learn to develop and present materials that communicate results to farmers," says Carmela Cupelli, business development specialist with OMAFRA, who has administered the program since its inception in 2010.

Read the full article on the Alliance website.

96%
of participants still engaged in agri-food

USEL participants from 2012 to 2020 currently involved in the agri-food sector in careers in research, teaching, government, private sector, processing and veterinary medicine

11
years of a targeted program focused on mentoring and training

USEL gives students hands-on agri-food research experience

Riley McConachie returns to the Ontario Crops Research Centre in Elora in the summer of 2022 to continue his USEL research investigating whether specific wheat genotypes can resist *Fusarium graminearum* infection, which causes Fusarium head blight.

In this image, Riley harvests wheat from test plots and separates them into numbered bags before taking them back to the lab to be analyzed. Inspired by his USEL position, Riley plans to apply to a master's degree in plant agriculture.

"It is a pleasure to have dynamic and talented students join us in the field. Training the next generation of agri-food leaders who are able to take innovation and research to the next level will provide us with a robust agri-food sector for generations to come."

—Dr. Helen Booker, associate professor in the Department of Plant Agriculture at U of G and USEL mentor

OUTCOME 2

Training the next generation of Ontario's veterinarians

VETERINARY CAPACITY PROGRAM

118
student participants in the externship course in 2021/22

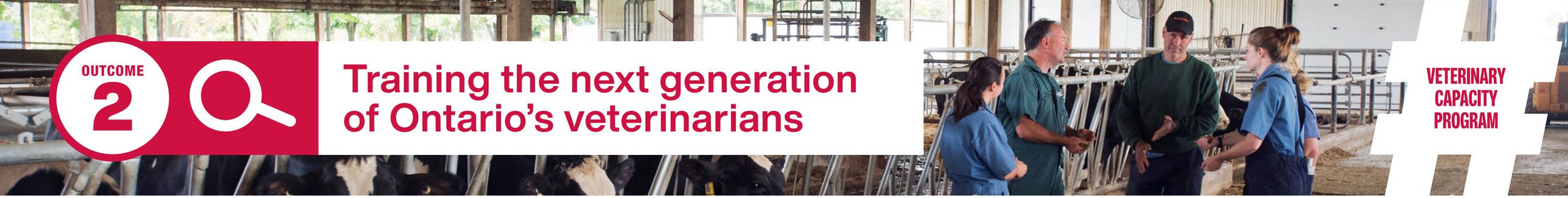
The eight-week externship course enables doctor of veterinary medicine (DVM) students to gain work experience and make connections throughout the province. More than 4,500 DVM students have participated in the externship course since it started.

The Ontario Agri-Food Innovation Alliance invests in the Ontario Veterinary College (OVC) to help develop the next generation of veterinarians who will support the province's livestock sector and rural communities.

A growing Ontario population and a high demand for veterinary services have contributed to a veterinary capacity shortage in the province, particularly in northern and rural communicates. This shortage creates barriers to livestock agriculture in regions that otherwise have potential for growth.

The Veterinary Capacity Program (VCP) leverages the reputation and expertise of OVC to help support a continuous stream of veterinarians who are trained to care for livestock, monitor the health of animals in the food chain and support farming communities and rural Ontario.

Learn more by reading the Alliance's Program Impact Case Study for VCP.



OUTCOME 2

Training the next generation of Ontario's veterinarians

VETERINARY CAPACITY PROGRAM

Supported by OMAFRA through the Ontario Agri-Food Innovation Alliance, VCP investment enables DVM students to participate in an eight-week externship course during their fourth year of study.

The externship course allows students to work at a veterinary practice focused on food animals, companion animals and/or horses. Students are supervised and mentored by practising veterinarians throughout their externship, establishing strong connections with the practice and community.

This investment yields highly qualified veterinarians trained to support the needs of the province and its domestic food supply.

"Over the course of my externship, I was able to work with six talented mixed-animal vets at varying stages in their careers, who taught me so much about not only mixed-animal medicine but also about the lifestyle and mentality and how to succeed in the role."

—Dr. Morganna Turner, OVC DVM 2022, completed her externship in summer 2021 at the Paris Veterinary Clinic in Paris, Ont. Read more about her externship experience in her article Living the James Herriot Lifestyle.

"[Students] introduce new ideas and come up with tough questions which keep us on our toes. We enjoy working as a team with the students, and it is rewarding to see how their surgery skills and diagnostics improve during the externship."

—Dr. Connie Dancho, Temiskaming Veterinary Services

"OVC is able to provide a variety of learning environments and exposure to 'real-life' herds. Inclusion of the eight-week externship course allows students to experience life in [a veterinary] practice as part of a team and allows those practices to engage with the up-and-coming graduates who may be looking for employment."

—Dr. Kelly Barratt, veterinarian/owner, Heartland Vet Services

OUTCOME 3

A unique platform for collaboration and innovation

Realizing the triple P bottom line of sustainability (planet, people and profit) means working with partners across the agri-food and rural sectors to develop innovative solutions to contemporary challenges.

The Ontario Agri-Food Innovation Alliance fosters collaboration among academia, government and industry to create solutions that enhance the sustainability and competitiveness of the Ontario agri-food and rural sectors. The resulting innovations are fundamental to the ongoing success of farmers and agri-businesses and to the economic and social well-being of communities.

330
research collaborators

Academic, industry and government collaborators working together to foster investment and engagement in projects

54
intellectual property disclosures

Alliance projects lead to innovations worth protecting

26
patents filed

The U of G Research Innovation Office specializes in commercializing Alliance-funded research

1,638
KTT activities in research projects

Through collaboration, knowledge translation and transfer ensures scientific information reaches end users in the agri-food community

The annual bean breeding and genetics program open house at the Ontario Crops Research Centre – Elora brings together U of G faculty, students and partners from government and industry—including the Ontario Bean Growers—to share new practices and research findings.

The metrics presented on this page are from 2021/22.

OUTCOME 3

Intellectual property helps bring better beans to market

#BREEDING AND INTELLECTUAL PROPERTY

$1.6M
commercialization revenue

Revenue generated from licences associated with Alliance-funded research in 2021/22

Alliance-funded researchers work with partners from across the agri-food sector to develop innovations that support industry and make a difference to Ontario farmers.

Behind the scenes, expert intellectual property guidance from U of G's Research Innovation Office helps turn novel ideas into marketable products.

Some of the best U of G innovations brought to market are new higher-yielding, disease-resistant crops tailored to Ontario growing conditions, including three new varieties of dry beans licensed in 2021/22.

OUTCOME 3

Intellectual property helps bring better beans to market

BREEDING AND INTELLECTUAL PROPERTY

Two University of Guelph plant breeders received national recognition for their decades of dedication to genetic improvements in soybeans and dry edible beans, thanks partly to long-term support through the Ontario Agri-Food Innovation Alliance and established collaborations with industry partners.

Dr. Istvan Rajcan received the 2022 Plant Breeding and Genetics Award, an annual award sponsored by Seeds Canada and Germination and presented to a public- or private-sector researcher for significant contributions to Canadian plant agriculture. Dr. Peter Pauls's Dynasty dark red kidney bean was chosen as the 2022 Seed of the Year by the Ontario Bean Growers under a nationwide initiative to recognize publicly developed varieties of any commodity.

Read the full article on the Alliance website.

Breeding research takes time. Publicly funded breeding programs like those supported by the Ontario Agri-Food Innovation Alliance give researchers and partners the time and resources needed to produce new, high-value plant varieties.

In this image, Dr. Peter Pauls performs some of the detailed work required to develop new bean varieties—working on a new cross for an azuki bean.

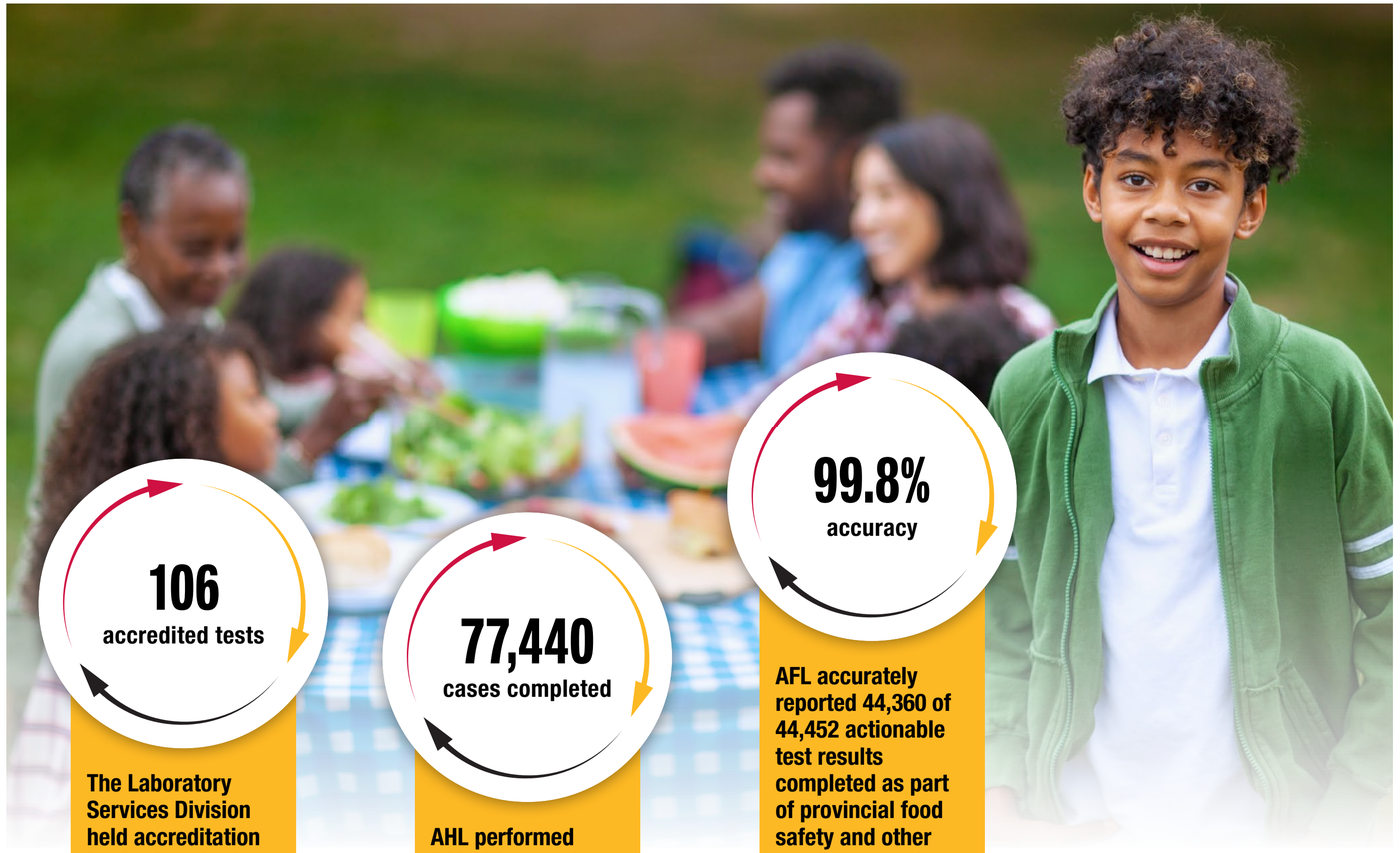
The metrics presented on this page are from 2021/22.

OUTCOME 4

A transparent agri-food sector you can trust

A competitive and sustainable agri-food system needs world-class laboratory capacity to monitor food safety, support export markets and foster a transparent agri-food sector Ontarians can count on.

The Ontario Agri-Food Innovation Alliance supports U of G's Laboratory Services Division—the Agriculture and Food Laboratory (AFL) and the Animal Health Laboratory (AHL)—to ensure industry and government partners have access to reliable, accredited testing services to help build transparency and public confidence in the agri-food sector.



Ontarians count on a consistent supply of safe and nutritious food. The Laboratory Services Division at U of G works with partners across the agri-food sector to help keep Ontario's food system safe—so you and your family can feel confident sharing and enjoying a meal.

The metrics presented on this page are from 2021/22.

OUTCOME 4

Partner of choice for Ontario's dairy sector

AGRICULTURE AND FOOD LABORATORY

800,000+
dairy samples

Total dairy samples processed annually by the AFL

The AFL is a partner of choice for industry and government thanks to its in-house expertise and commitment to critical thinking and problem solving. The AFL offers clients a wide variety of laboratory tests and timely, reliable results, making it the place to go when clients need a lab partner that will go the extra mile.

For more than 50 years, the AFL has supported Ontario's raw milk testing program, providing trusted laboratory testing services to the Dairy Farmers of Ontario and OMAFRA.

Learn more by reading the Alliance's Program Impact Case Study for AFL.

OUTCOME 4

Partner of choice for Ontario's dairy sector

AGRICULTURE AND FOOD LABORATORY

The AFL is Ontario's premier dairy testing lab, working tirelessly to ensure that Ontario's milk supply is high quality and safe for people to consume.

Ontario's dairy industry generated $2.5 billion (farm gate value) in milk sales in 2020/21, covering 3,343 dairy farms across Ontario. Testing of raw milk is critical to the success of the industry, and same-day results mean farmers can monitor herd health and milk quality.

As a dependable testing service, the AFL has consistently gone above and beyond to help ensure the safety of Ontario's milk supply. The AFL's commitment to excellence not only supports Ontario's dairy sector but also contributes to the overall public good.

Pioneer of dairy composition testing in Ontario

AFL developed, validated and refined milk testing methods that are now used across North America.

Quick turnaround time

Same-day results for dairy farmers help monitor herd health and milk quality.

Ontario's dairy testing lab

As part of OMAFRA's regulatory program, AFL tests more than 42,000 samples a year for total bacteria in raw milk from all dairy farms in the province.

OUTCOME 5

A safe and secure agri-food system

Ontario's agri-food sector must be safe and secure to meet the needs of people and the planet while acknowledging producers and other business owners need to make a profit and create jobs.

The Ontario Agri-Food Innovation Alliance supports the Veterinary Capacity Program, the Animal Health Laboratory (AHL) and the Agriculture and Food Laboratory (AFL) to help protect Ontario's food system by supplying all the necessary tools to foster a One Health approach—monitoring the health of animals, the environment and people. The laboratories use in-house scientific expertise to develop new tests and leverage cutting-edge technologies to respond to new threats in the agri-food system and help secure the supply chain.

43,170
web page views for the OAHN

The website for the Ontario Animal Health Network—a program administered by AHL—has resources for producers, veterinarians and government officials to support animal disease surveillance across Ontario

$8.5M
AHL revenue

Third-party revenue is reinvested into the lab's various sections, enhancing testing services for clients from multiple sectors

16
new tests

Laboratory tests developed or improved by AHL scientists

$8.9M
AFL revenue

Third-party revenue, demonstrating AFL is the lab of choice for growers, researchers, food processors and more

If an AHL client does not know what type of test they need to solve their problem, AHL diagnosticians use their expertise to determine the appropriate test(s). All verified results are sent immediately to the client electronically.

The metrics presented on this page are from 2021/22.

OUTCOME 5

AHL playing a key role in avian influenza response in Ontario

ANIMAL HEALTH LABORATORY

500
avian influenza tests per day

Thanks to investment in leading-edge technology, the AHL can complete 500 tests per day for avian influenza, providing surge capacity to ensure Ontario can effectively monitor for the virus.

The highly pathogenic H5N1 strain of avian influenza was initially found in 2021 in Europe and has been detected in wild and domestic birds in North America.

As a national leader in disease monitoring and surveillance, the AHL works closely with the Canadian Food Inspection Agency (CFIA) and OMAFRA on the detection of avian influenza in Ontario.

Learn more by reading the Alliance's Program Impact Case Study for the AHL.

OUTCOME 5

AHL playing a key role in avian influenza response in Ontario

ANIMAL HEALTH LABORATORY

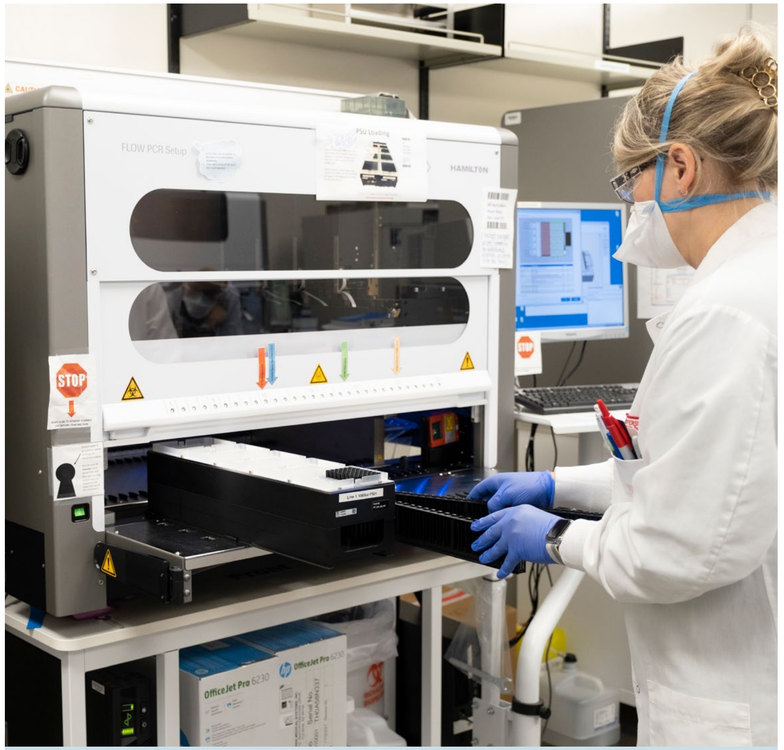
“The AHL has been working with CFIA on the detection and surveillance of avian influenza since January of 2022, when the new strain of avian influenza first appeared in Nova Scotia, by providing support for testing,” said Dr. Maria Spinato, AHL director.

“The AHL is also working closely with OMAFRA to increase surveillance capacity and capabilities in Ontario and limit further spread in the province.”

To support Ontario’s increase in monitoring and surveillance, AHL ramped up testing and diagnosis of birds in the lab and also provided complimentary testing to poultry industry clients.

“This tremendous early warning system underscores the incredible, sometimes intangible, value of the simply outstanding work done at U of G in general, and our Animal Health Lab in particular, to benefit and protect our province,” said Dr. Malcolm Campbell, vice-president (research).

Read the full April 2022 article about how U of G supports Ontario’s avian influenza response on the U of G News website.



Monitoring avian influenza

The AHL supported the poultry industry by providing producers with testing services for avian influenza as part of Ontario’s enhanced surveillance strategy.

H5N2 avian influenza defence

In 2015, the AHL was instrumental in helping contain an outbreak of H5N2 avian influenza in Ontario, with minimal disruption to the province’s poultry industry, demonstrating how disease monitoring and surveillance play a critical role in protecting Ontario’s agri-food sector.

Cutting-edge technology

Up-to-date technology that optimizes efficiency and surge capacity means the AHL is ready to process high quantities of samples within established turnaround times, providing partners with critical information to respond to and contain emerging disease outbreaks.

OUTCOME 6

An enhanced system for research data access and storage

Achieving the triple P bottom line of sustainability demands harnessing the power of digitization to drive innovation and efficiency across the agri-food sector.

The Ontario Agri-Food Innovation Alliance works with Agri-Food Data Canada at U of G to make agri-food data FAIR—findable, accessible, interoperable and reusable—and help ensure these new digital technologies support innovative research and evidence-based decision-making.

We direct our efforts toward providing high-quality data training, programming, services and infrastructure to improve the management, sharing and reuse of research data.

AGRI-FOOD DATA CANADA

AT THE UNIVERSITY *of* GUELPH

100%

DMP compliance across Alliance programs

All projects that started in 2021/22 have a library-endorsed data management plan (DMP) in place

144

DMPs reviewed by U of G librarians in 2021/22

Library review helps researchers enhance data management and long-term data storage practices, taking an important step toward FAIR data principles

100

researchers and staff deposited agri-food data

Data sets comprising 1,241 files have been uploaded by U of G agri-food faculty and staff to the Agri-Environmental Data Repository on Borealis since 2012

New U of G director brings University-wide strategy for agri-food research data management

Dr. Michelle Edwards was appointed the inaugural director of agri-food data strategy in April 2022. This new role expands on the former position of director, data strategy, for the Food from Thought program, and is part of the University's long-term commitment to foster agri-food data excellence.

Read the full article profiling Michelle's appointment on the Alliance news page.

OUTCOME 6

OAC Historical Research Data and Reproducibility Project

#DATA

266
data files available for reuse

Organizations working toward FAIR—findable, accessible, interoperable and reusable—data must make an iterative, long-term commitment focused on everything from enhanced data infrastructure to researcher training. Along the way, small-scale initiatives focused on making research data available for reuse bring us one step closer to FAIR data and support a key pillar of scientific investigation: replication of research findings.

Data sets for 15 historical research papers written by Ontario Agricultural College (OAC) researchers, constituting 266 data files, are now available via the Agri-Environmental Data Repository.

OUTCOME 6

OAC Historical Research Data and Reproducibility Project

DATA

Dr. Michelle Edwards has worked to improve data access and storage for historical research projects completed by researchers at the Ontario Agricultural College.

Using papers published 10 to 20 years ago—before introduction of widespread requirements to deposit data supporting research findings in a recognized repository—Edwards worked with and trained highly qualified personnel to clean and upload project data into the Agri-Environmental Data Repository for long-term preservation and access.

Since the project was launched in 2020/21, Edwards and her team have uploaded data sets for 15 historical research papers, resulting in 266 files being added to the Agri-Environmental Data Repository, making the data findable, accessible and reusable.

Files can be accessed by visiting the OAC Historical Research Data and Reproducibility Project page of the Agri-Environmental Data Repository on the Borealis website. FAIR data allows the research community to avoid duplicating costly data collection, and allows for existing data to be incorporated into larger research studies, expanding the impact of publicly funded research.

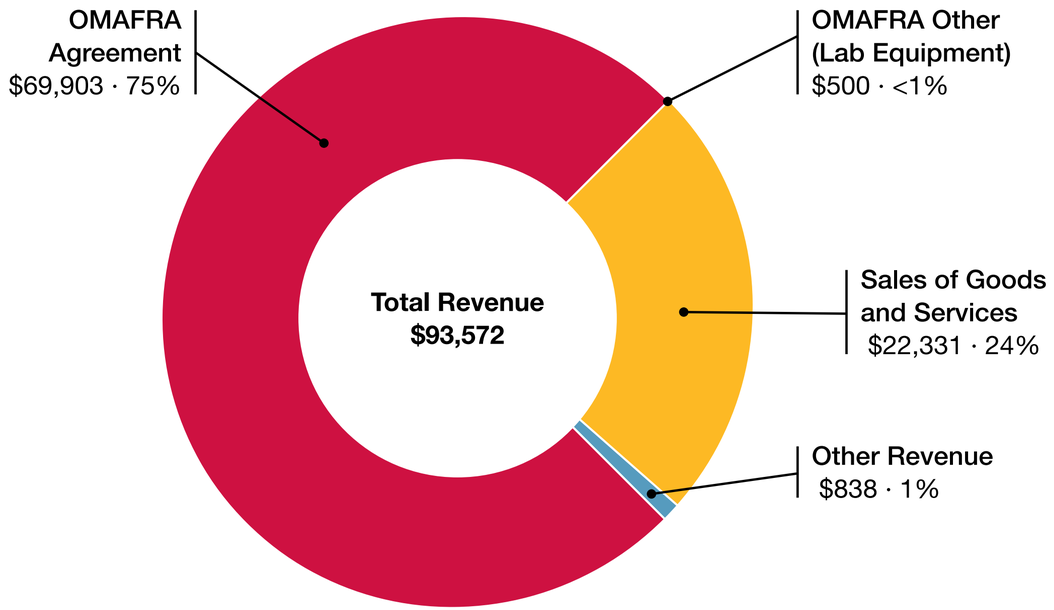
Historical projects with data now available on the Agri-Environmental Data Repository cover a variety of topics, ranging from the effect of fish oil on milk production in dairy cattle to weed management strategies.

Research data is now available for the paper "Effect of reduced herbicide rates on weed control, environmental impact and profitability of corn," published in 2009 in the *Canadian Journal of Plant Science*.

2021/22 Financial Overview

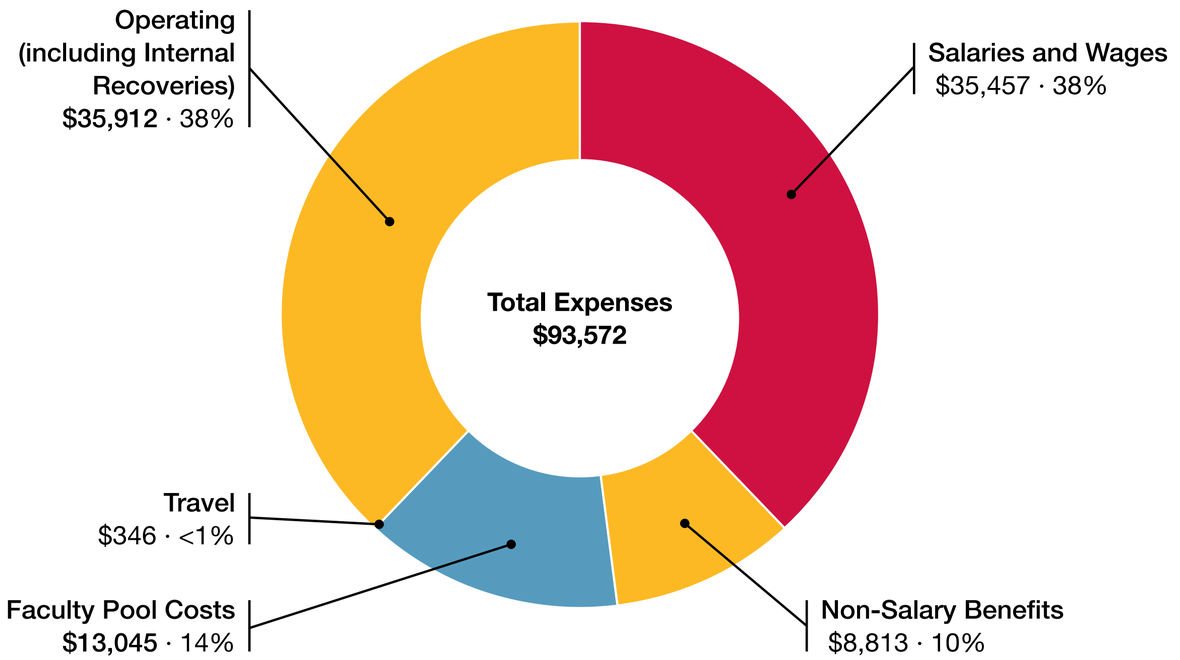
Agreement Revenues

(in thousands of dollars)



Agreement Expenses

(in thousands of dollars)



2021/22 Financial Overview

Agreement Financial Summary by Program

(in thousands of dollars)

Standard Accounts	Research Program	Veterinary Capacity Program	Animal Health Laboratory	Agriculture and Food Laboratory	Property Management	Total
Revenue						
OMAFRA Agreement	37,385	5,352	7,905	5,423	13,837	69,903
OMAFRA Other (Lab Equipment)				500		500
Sales of Goods and Services	29		8,482	8,915	4,905	22,331
Other Revenue	71		43	53	672	**838**
Revenue Total	**37,485**	**5,352**	**16,430**	**14,891**	**19,414**	**93,572**
Expenses						
Salaries and Wages	10,693	175	8,271	8,116	8,201	35,457
Non-Salary Benefits	2,002	29	2,269	2,341	2,173	8,813
Faculty Pool Costs	11,145	1,900				13,045
Travel	126	195	6	8	11	346
Operating	14,405	3,054	7,845	5,199	10,506	41,009
Internal Recoveries	(886)	0	(1,961)	(773)	(1,478)	(5,097)
Expenses Total	**37,485**	**5,352**	**16,430**	**14,891**	**19,414**	**93,572**
Net Revenue Over Expenses	**0**	**0**	**0**	**0**	**0**	**0**

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This publication is a summary of the Consolidated Annual Report of the Ontario Agri-Food Innovation Alliance, a collaboration between the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the University of Guelph.

Growing Ontario Solutions and the Consolidated Annual Report are produced by the University of Guelph's Office of Research in accordance with the OMAFRA-University of Guelph Agreement. These annual reporting documents are reviewed and approved by the Ontario Agri-Food Innovation Alliance's joint governance structure.

More information on the Ontario Agri-Food Innovation Alliance, including the complete Consolidated Annual Report, is available on the Alliance website.

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