

ANNUAL REPORT

SEPTEMBER 2022 – AUGUST 2023

UNIVERSITY
of GUELPH

IMPROVE LIFE.



ARRELL
FOOD INSTITUTE



AT THE UNIVERSITY of GUELPH

SHARED VISION

A sustainable, reliable, and just food system.

COLLECTIVE GOAL

Informing resilient and sustainable global food systems based on a rigorous and comprehensive understanding of the latest evidence.

Land Acknowledgments

The University of Guelph is on the territory of the Mississaugas of the Credit and is part of the Land Between the Lakes Purchase (Treaty number 3). The Dish with One Spoon Covenant made between the Anishinaabe, Haudenosaunee and Mississaugas, is an agreement to share territory and protect these lands, now known as parts of Ontario, Quebec and New York State. The Covenant reminds us of our common connection to the land and to each other. Recognizing the contributions and importance of First Nations, Métis and Inuit peoples is an important part of our collective commitment to make the promise of Truth and Reconciliation real in our communities.

Words of Gratitude

We are extremely fortunate to be surrounded by a huge range of wonderful and supportive colleagues at the University of Guelph, Canada’s Food University. Without their support it would be impossible to drive the mission of Arrell Food Institute – to improve global food systems. Special thanks to the Arrell Family Foundation for the ongoing support of Arrell Food Institute.

Statement of Inclusion

A world where all communities have access to safe and healthful food is a world where the voices of all communities are uplifted. AFI is an equal opportunity employer and does not tolerate, ignore, or condone any form of discrimination. We work to support people from communities historically and structurally excluded, including BIPOC communities, people with disabilities, LGBTQ2IA+ and those with caring responsibilities. AFI strives to be inclusive in its events and projects so that diverse perspectives are presented, and a full range of individuals have equal opportunity to participate in discussions and conversations. AFI ensures that its resources recognize both non-traditional and traditional excellence. We welcome further feedback and dialogue.



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Read AFI's Strategic Plan 2023–2028

arrellfoodinstitute.ca/strategic-plan

LETTER FROM THE DIRECTOR

From new ways of producing protein to regenerative agricultural practices that build up the soil's organic matter, innovation in food and farming systems can help solve many problems. But technology, of course, won't solve all our problems and innovations need to be applied in the real world that is full of intricate politics, complex economics, and social relations. This is why we need collaboration and dialogue to ensure innovations are grounded and useful.

For example, in the second half of the 20th century, too often development agencies assumed technologies that worked on North American farms to boost productivity and help address labour gaps would also work in different geographies with different contexts like Southeast Asia. As a result, there are countless examples of well-meaning agricultural projects that failed to deliver useful results for local communities.

Driving forward dialogues and pushing for collaboration has been at the core of Arrell Food Institute's activities over the past year.

New collaborations have been built with the Arrell Family Chair in Behavioural and Experimental Economics, Dr. Tongzhe Li. Dr. Li's projects range from farmer incentive programs to agri-food employee retention to vertical farming, bringing together economics and human behaviour.

Work led by Arrell Chair in Food, Policy and Society, Dr. Philip Loring, has resulted in new collaborations with the World Wildlife Fund and has involved developing creative outputs to engage the public and policy makers on the importance of sustainable food systems.

Once again, Canada's Food Price Report has been a vitally important resource for consumers and businesses. The experts across the country who produce this publication, including outgoing Arrell Chair in the Business of Food, Dr. Simon Somogyi, worked for months to analyze data and create an accurate and informative forecast for people in Canada. AFI sends best wishes to Dr. Somogyi, who will be departing his role as Arrell Chair in the Business of Food to take up a new role as Director of the Weston Agri-food Sales Program and Dr. Kerry Litzenberg Chair in Sales and Economics at Texas A&M University.



The AFI team has also developed new partnerships and deepened existing ones. We recently hosted Professor Sir David Nabarro, a World Food Prize winner, during his visit to receive an honorary degree from the University of Guelph. The dialogues we had during this visit deepened our collaboration on how to drive food systems transformation nationally and internationally.

Additionally, there is great work happening in food science to ensure the health, safety, and quality of the food in the food system. Arrell Chair in Food Quality, Dr. Maria Corradini, spent time this year using Canada's particle accelerator at the Canadian Light Source facility in Saskatoon doing cutting-edge science to explore issues around food safety and spoilage. Similarly, our scholars have had a banner year and you can read more about these achievements throughout this report.

All the work that has happened at AFI this past year is possible because of the team and the people we get to work with. One of the lessons from this past year is that innovations are an extremely important aspect of change, but it is the people and the connections who drive them forward.

Dr. Evan Fraser
Director, Arrell Food Institute



FOOD AND BUSINESSES

Creating and delivering more food with less waste is imperative to the profitability and economic viability for all contributors across the food chain. Arrell Food Institute is examining these issues and bringing them to the forefront, within Canada and globally.

FOOD AND BUSINESSES

Building Connections Across Industries

Working with businesses and understanding economic implications is important when addressing food system changes. Over the past year, Arrell Food Institute sought new opportunities and leveraged existing ones with the industry to open the dialogue further and build connections.

The Net-Zero Food Systems Challenge is a new, innovative, educational program that AFI and the Ontario Agricultural College at the University of Guelph launched this year. It is supported financially by Loblaw Companies Limited. The program brings graduate students from across Canada together to develop solutions for a food system that doesn't contribute greenhouse gases. The kick-off week consisted of facilitated workshops, discussions with experts, and visits to food production facilities to help prepare students to tackle their complex challenges. Students are working on their projects remotely and will present their findings in November 2023. This experience is providing the participants

with real-world sector insight and coaching from a cross section of food industry experts throughout the program.

The inaugural Top 30-Under-30 Leadership Summit, hosted by Kostuch Media Ltd., was attended by AFI's Culinary Projects Lead, Rebecca Gordon, who was also selected as an adjudicator for the 2023 Canadian Hospitality and Tourism Top 30-Under-30 Award. At the event, Gordon spoke on a panel titled Re-Writing the Rules of Recruitment & Retention where she shared insights from her research on the steps leaders can take to improve restaurant work conditions to attract and retain workers to the restaurant industry.

Part of what makes AFI unique is its ability to convene diverse perspectives across the continuum of food. AFI continues to work on activities like these, acknowledging the convergence of business, economics, and food.



Pictured here are Dr. Fraser with Shalini Unnikrishnan, Managing Director & Partner, BCG and John Stackhouse, Senior Vice-President, Office of the CEO, RBC.

COP27 was hosted in Sharm el-Sheikh, Egypt in November 2022. Dr. Evan Fraser attended as part of the Canadian delegation and participated on a panel on the circular food economy. The conference was an opportunity to engage with others on climate change, including Ontario's Minister of Environment, global crises and the impact on food systems and feeding a growing population.



FOOD AND BUSINESSES

Research Highlights

The landscape is rapidly changing for food businesses. The last few years have seen supply chain disruptions, a sharp increase in input prices that impact businesses from processors to retail and food service, and the emergence of new technologies and innovations, both digital and physical. AFI researchers have been helping businesses get a handle on these changes and future opportunities across Canada and worldwide.

Canada’s Food Price Report, co-authored by Arrell Chair in the Business of Food, Dr. Simon Somogyi, predicted that food prices would rise by five to seven percent this year – an increase of over \$1,000, on average, for a family of four. Restaurant prices, too, were predicted to rise, due largely to rising geopolitical tensions, high transportation costs, the depreciation of the Canadian dollar and rising interest rates, and the increasing costs of crop inputs. The cutting-edge machine learning techniques used to drive the report’s forecasting models were also featured in an event hosted by the Centre for Advancing Responsible and Ethical Artificial Intelligence in June 2023. Looking back on Canada’s Food Price Report 2022, authors predicted that prices would rise by up to seven

percent – which turned out to be an underestimation, as we have seen in the last year.

Another emerging trend in the business world is smart retailing – the use of technologies such as sensors, digital labelling, and mobile applications to create an interactive experience for customers while enhancing food quality, safety, labelling and reducing labour needs. These technologies also raise questions of equity and fairness, for instance how will restaurants adapt to these new practices? Dr. Somogyi and Arrell Chair in Food Quality, Dr. Maria Corradini, hosted a virtual forum to discuss emerging research and practice in smart retailing – bringing together actors across the food system to provide insights into the

future of smart retailing for restaurants, food producers, retailers, and consumers.

Arrell Scholars, too, are working on innovations that will benefit food businesses, now and in the future. Evan Tollenaar is developing a robotic tomato harvester, which he had the opportunity to present to Members of Parliament in March 2023. Maria Margarita Fontecha completed a scoping review of gender-based violence amongst temporary foreign workers in agriculture, while Tiwalola Alabi is working with the Ontario Federation of Agriculture to investigate broadband and mobilize connectivity in Ontario – an issue which impacts many farm operators and rural businesses.





FOOD AND COMMUNITY

Food is central to the health of people, communities, and our planet. By exploring the links to sustainability, culture, and society, Arrell Food Institute is working to create the foundation of better nourished communities now, and in the future.

FOOD AND COMMUNITY

Creating Sustainable Food Systems for All

Food and the conversations we have surrounding it reflect global perspectives about social belonging, individual and cultural values, public health, and the environment. This past year, Arrell Food Institute explored the intersection of food and communities to understand existing linkages and discover new ways to improve one with respect for the other.

AFI sponsored the Local Catch Network's 4th Local Seafood Summit in Girdwood, Alaska in October 2022. The event is designed to promote new relationships, encourage information sharing, and provide a forum for strategic discussion between practitioners and stakeholders working towards resilient and thriving coastal communities. Arrell Chair in Food, Policy and Society, Dr. Philip Loring and Arrell Scholar Rosemary Brockett attended the event. Brockett reflected on how the experience provided her an enriched understanding of community-based food systems by exploring pressing themes of the seafood industry like adaptability of marine policy, sustainability and climate change, and agri-tech adoption.

As the co-chair of the Canadian Food Policy Council, AFI Director Dr. Evan Fraser moderated a roundtable discussion focused on the development of a National School Food Policy. A group of 18 stakeholders spanning academia, school boards, school food and community food groups met with the Honourable Karina Gould, Minister of Families, Children and Social Development at the University of Guelph for the discussion. A report was written after that roundtable detailing key findings from the discussion on how to design a transparent and accountable national school nutrition system, one that reduces stigma, includes

culturally appropriate programming, and supports local and sustainable food economies.

A group from AFI also gained a new perspective on food systems during a trip to Bogotá, Colombia to engage with agri-food experts. The group met with representatives from Fondo Accóin, LaSalle University's Uptopia Project, Andes University, Climate Focus, and Agrosavia to forge new connections and gain insights on food and sustainability initiatives in the region. The meetings provided a space for refreshing give-and-take of research findings, ideas, and concerns on complex food system challenges, while allowing participants to take a closer look at similarities and differences between agri-food networks in Canada and Colombia.

Though food is a necessity of life, it is also a key part of our identities and affects how we relate to one another in society. Initiatives such as these allow us to come together to share perspectives and participate in collaborative dialogue about complex challenges and the way forward, a worthy step towards more resilient and more sustainable food systems for all.



Pictured here from left are Cherry, Gordon, Chef Bashir Munye who led one of the workshops, Saghafi and O'Doherty.

In March, Arrell Scholars Dakota Cherry and Zahra Saghafi alongside AFI staff members Muriel O'Doherty, Events Manager, and Rebecca Gordon, Culinary Projects Lead, participated in Unblock, an unconference style event that focuses on diversity, equity, and inclusion in the food, drink, and hospitality industry. With emphasis on education, advocacy, and networking, the event aims to empower underrepresented voices by bringing people from different parts of the industry together to learn from experiences and inspire change.

"I witnessed meaningful conversations about intersectionality, power dynamics, and actionable steps toward a more inclusive society."
—Arrell Scholar Zahra Saghafi.

AFI works closely with 4SD Foundation to gain insights into how collaborations can create change in the food system. Pictured here is Director of Operations Alice Raine with Professor Sir David Nabarro, 4SD Foundation's Strategic Director. Raine joined the 4SD Foundation team and other network members for an immersive workshop and planning session on living systems change.



Amplifying Research Impact

In 2022 the following projects, which help mobilize food research into action, were selected as recipients of the Amplifying Research Impact Fund (ARIF):

- Digital agriculture in Canada: opportunities and constraints in a climate change era
- Beef@Guelph Research Roundup Field Day and other KTT (knowledge translation and transfer) activities
- Heritage and feral apple identification: leveraging a genetic tool for community engagement
- Impact of ALUS land restoration activities on ecosystem services
- Forecasting seafood fraud occurrence in the supply chain within major Canadian cities using Bayesian hierarchical binary logistic time-series regression modeling

ARIF includes funding support from AFI.



FOOD AND COMMUNITY

Research Highlights

Food is inextricably linked to our health, our relationships, and the communities that we live in and rely on. AFI researchers are working to explore the intersection of sustainability, communities, and people to drive impactful change in our local and global food systems.

Dr. Phil Loring worked with the World Wildlife Fund on a new report, *Solving The Great Food Puzzle: Right Innovation, Right Impact, Right Place*. This foundational report outlines a framework for food systems innovation; it provides insights to help decision-makers choose innovations that will work in their local context at the right scale to maximize their impact, as well as examples of innovations that are working around the world.

Dr. Loring's latest work, published in the journal *FACETS*, examines the concept

of regeneration applied to fisheries. Although there are differences between terrestrial and aquatic ecosystem dynamics, both systems can be regenerative – that is, can promote the health of the ecosystems they reside within. This shift will require a diversified approach that adapts to changing local conditions through shifting harvests and diets; this will be a change from our current approach but can and must be done for the health of our ecosystems.

Dr. Loring spoke about his research at several impactful panels and events this year, including a discussion about how we can leverage the power of the consumer to reduce food waste and adopt nature-positive farming practices at The Food Day at COP15 (the 15th Conference of the Parties for the UN Convention on Biological Diversity). At the Reuters Impact panel on the Future of Food, Dr. Loring spoke about shifting

drivers of change in consumer diets, and the importance of recognizing not just the economic realities that impact individual consumers, but the need for structural change and place-based solutions in our food systems.

Food sovereignty, food security, and health of communities are issues of focus for several Arrell Scholars as well. Dakota Cherry visited Nawash First Nation to learn about local food sovereignty initiatives, summarizing current initiatives, and developing an outline to inform future funding activities, while Emily Kaliei examined the historical development of uneven public health care for Indigenous communities, winning the Segall prize for her work by the Canadian Society for the History of Medicine.



One way AFI engages in Food Day Canada is by highlighting research and food stories from across the University of Guelph. The webpage that features these stories was the second most visited page on the AFI website in summer 2023.





FOOD AND CONSUMERS

Canada produces and exports large amounts of food to feed people locally, nationally, and around the world. Working to identify pressure points in the food system that can be resolved by policy, markets, or awareness will improve the way global food networks offer safe, healthy, nutritious, and affordable food for all consumers.

FOOD AND CONSUMERS

Ensuring Safe and High-Quality Food

Ensuring people have access to the food they need is critical to the food system. Among Arrell Food Institute’s topic areas and priorities is finding ways and supporting initiatives that help ensure people can access quality food in their community.

AFI continues to work with University of Guelph partners on the Campus Fresh Food Market. It provides resources to this initiative including people and financial, to help ensure the program’s continuation and success. The weekly on-campus market uses a sliding-scale model in an effort to make fresh produce more accessible for people in the U of G community. Feeding 9 Billion Peer Helpers assist with the market when it runs weekly during the fall to spring semesters. The market aims to provide a comfortable and stigma-free environment where the community is engaged, and food security can be an open conversation.

The Canadian Light Source is based at the University of Saskatchewan and is the country’s first and only synchrotron facility. Arrell Chair

in Food Quality, Dr. Maria Corradini, along with U of G PhD candidates Louis (Luigi) Colaruotolo and Angie Homez-Jara visited the facility to study the role of food microstructure in food quality, deterioration, and shelf-life using its very unique and powerful light technology. They used their time to study the role of structure of two types of food samples:

- Looked at 3D printed wafers produced with plant-based proteins and oils to identify layouts that promote or prevent spoilage over time.
- Used mushrooms to explore how cell and intercellular space affects deterioration.

Consumers depend on a resilient food system that provides them with healthy and safe food that meets their needs. Work is happening in places from science labs to community settings to help ensure this remains a central priority for all.



“A synchrotron allows you to look at samples at a very high level of detail and resolution,” explains Dr. Corradini. “In most of our research, we hypothesize about the underlying mechanisms that cause a phenomenon. Here, you can see the progression of this phenomenon and get the information to accept or reject the hypotheses.”



Congratulations to Dr. Corradini, who was awarded the title of Honorary Professor by Universidad Argentina del la Empresa in Argentina and received the OAC Alumni Association Distinguished Extension Award

FOOD AND CONSUMERS

Research Highlights

The Canadian agri-food system excels at providing safe, high-quality food to consumers, with new innovations in technologies and research offering exciting potential in reducing food waste, developing healthy, novel products, and understanding consumer needs and decisions. AFI researchers are hard at work on innovative projects that will help us to deliver the products that consumers need.

Maple syrup is among the 10 most adulterated foods globally. Food adulteration can be a major issue for consumers, who pay more but receive a lower value product, and poses health risks for consumers with allergies or sensitivities. Dr. Maria Corradini, along with Dr. Robert Hanner and Arrell Scholars Maleeka Singh and Sujani Rathnayake, used a technique based on fluorescence fingerprinting, to detect maple syrup adulteration quickly, accurately, and affordably by analyzing the intensity of fluorescent compounds naturally present in syrup under UV light. This technique will be refined and validated using machine learning techniques to support its application across the supply chain; Singh won the Three Minute Thesis competition, as well as the People’s Choice

Award, with her presentation on this approach at the Canadian Institute of Food Science and Technology (CIFST) Summit in 2023.

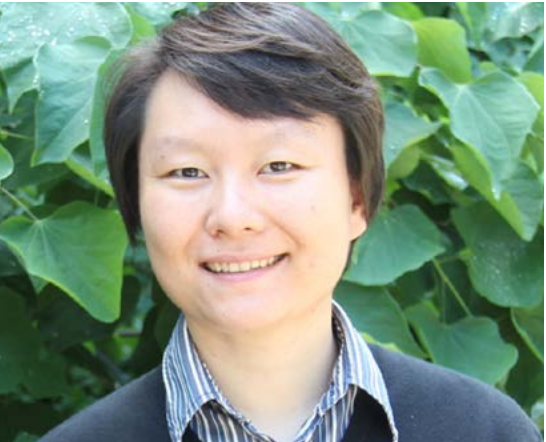
Using new funding from the Canada Foundation for Innovation and the Ontario Research Fund/Small Infrastructure Fund, Dr. Corradini and collaborators Drs. Iris Joye and Michael Rogers will continue to explore the use of fluorescence through a fluorescence lifetime imaging microscope to investigate food structure and ultimately develop novel foods for consumers.

Consumers will also benefit from innovative new work from Dr. Corradini that harnesses digital methodologies, including building digital representations of food commodities and products that allow scholars to simulate and study various elements of food virtually while reducing food spoilage, as well as a project that looked at 3D food printing for prototyping safer and more stable food matrices. A new book chapter from Dr. Corradini and Singh discussed the role of big data in reducing food waste across the supply chain.

Other Arrell Scholars are also hard at work on projects that impact consumers. Katherine Eckert is working on

Supperheroes – a family-based online intervention that will help consumers make more meals at home and reduce food waste, while Dakota Cherry is working with the Campus Fresh Food Market, which is supported in part by AFI, to understand their impact on students.

AFI also welcomed Dr. Tongzhe Li as the Arrell Family Chair in Behavioural and Experimental Economics this year. A faculty member in the Department of Food, Agricultural and Resource Economics, Dr. Li focuses on understanding consumer behaviour and adoption of innovations in agri-food. An exciting new grant from the Social Sciences and Humanities Research Council will support Dr. Li to use virtual reality to further explore consumer behaviour and emotional reactions to risk. This innovative new technology will allow the research team to create an immersive virtual environment, increasing the level of risk and reality for participants.



Announced in spring 2023: Dr. Tongzhe Li appointed as Arrell Family Chair in Behavioural and Experimental Economics



AFI expertise, people and projects were covered this year in **The Globe and Mail, Toronto Star, Financial Post, CBC, CNN, CTV, CityNews** and more.

\$4.5M

in new grants received with Arrell Chairs in principal or co-investigator roles

29

graduate students were funded by earned research grants

36

peer-reviewed publications



FOOD AND PRODUCERS

Meeting the needs of the human population in more sustainable ways, that are safe and uphold the quality of the food, is critical for the future of food systems. Arrell Food Institute is exploring new ways to protect the planet, while providing safer food that retains its nutritional value, all while paying attention to new technologies and approaches to farming and food production.

FOOD AND PRODUCERS

Supporting Future Food Production

Sharing insights and knowledge can build collaborations and help foster change and improvements in the food system.

Over the past year, Arrell Food Institute has dug deeper into topics that are relevant to producers in Canada, and globally, to leverage research and information that can help with the pressures that we are faced with today.

AFI partnered with Royal Bank of Canada and Boston Consulting Group's Centre for Canada's Future to find ways of helping Canadian farmers produce more food with fewer emissions. Working closely with a team of contributors and experts including a number of Arrell Scholars, four reports have been published that recommend solutions based on data and evidence. These reports received significant nationwide media coverage and a final report will be published later in 2023.

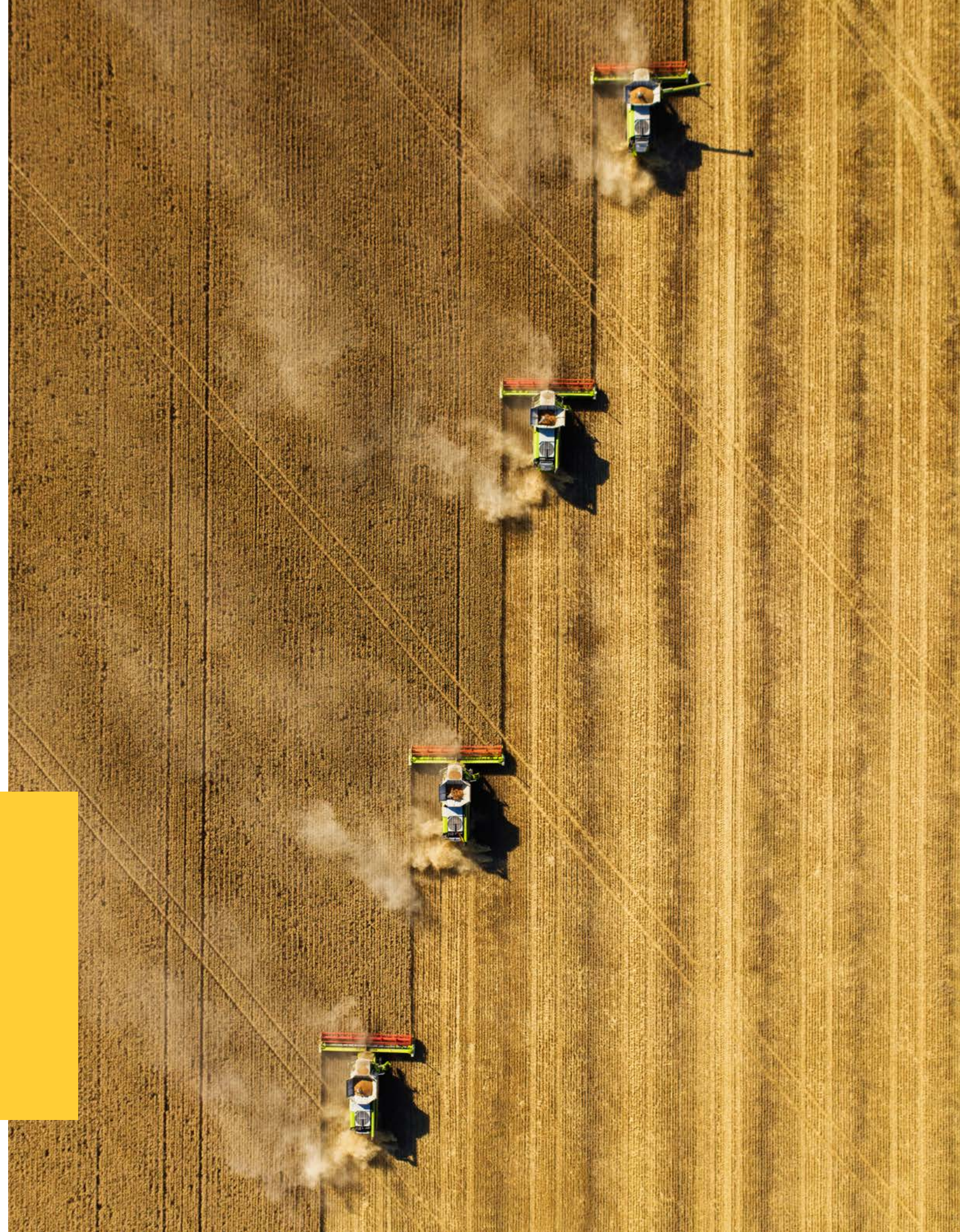
These reports also led to the creation of the Canadian Alliance for Net-Zero Agri-food (CANZA). This is a new national, industry-led, multi-stakeholder alliance aimed at establishing programs to reduce the greenhouse gas emissions from Canada's food system by 150 Mt by 2050. With an aim to help Canada create a circular, net-zero agri-food system, CANZA brings stakeholders together from across the agri-food system and "will mobilize investment, stand up and scale up innovative projects, advance bold policies, and create the right market incentives to remove 150 Mt of emissions from Canada's agri-food sector by 2050." AFI Director, Dr. Evan Fraser, is on CANZA's steering committee and AFI has played a leadership role in convening national workshops to better understand different perspectives on the best strategies to allow Canada to produce more food with fewer emissions.

The development of an agri-food technology strategy for Canada is underway. This year, AFI played an instrumental role establishing a 13-member advisory board, developing a transdisciplinary research team, and designing a dialogue process with stakeholders to understand barriers and opportunities that disruptive agri-food technologies may play in shaping the future of the industry. This dialogue process kicked off in June 2023 with a roundtable discussion led by Professor Sir David Nabarro. More of these roundtables, along with expert interviews by the research team, will happen throughout 2023.

These projects are examples of the initiatives that AFI worked on this year that are focused on a sustainable food systems future. By highlighting research, data and best practices and talking to people and partners who are most affected, transformations in the food system can be better supported.

In the media

The first report in the collaborative project with the Royal Bank and the Boston Consulting Group's Centre for Canada's Future received 37.9M media impressions hitting top-tier outlets across the country including **The Globe and Mail, National/Financial Post, Toronto Star, Hamilton Spectator, Calgary Herald, BNN Bloomberg, CTV News, MSN Canada, La Presse** and **Le Devoir**.





FOOD AND PRODUCERS

Research Highlights

Canada is an agricultural production powerhouse – contributing significantly to Canada’s economy, sequestering carbon and promoting biodiversity, and feeding Canada and the world. Emerging research is advancing sustainable production and exploring novel technologies and innovations to strengthen and build the sector into the future.

Dr. Fraser presented to the House of Commons Standing Committee on Agriculture and Agri-Food – advocating for investment in transportation infrastructure, incentives for farmers who adopt greenhouse gas mitigating practices, programs to address the labour shortage, and investment in innovative technologies to ensure Canada is a safe, trusted supplier of food for the world.

Novel methods of food production offer significant potential for transformational change; this year Dr. Fraser co-authored a new book, “Dinner on Mars,” which explores emerging technologies that could feed humans on Mars – and produce food sustainably here on Earth as well. Meanwhile Arrell Scholar Rosemary Brockett is one step closer to deep space food production, with her team being one of four selected to advance to the final stage of Canadian Space Agency’s Deep Space Food Challenge with their plant-growth chamber, which can grow food in a controlled environment without soil, sunlight or water. Additionally, Dr. Fraser finished work on the manuscript for the world’s first major textbook on cellular agriculture that will be published by top academic publisher Elsevier in late 2023. Dr. Fraser is the lead editor on this project with AFI food hero from 2019 Dr. Lenore Newman, AFI External Advisory Committee member Dr. Rickey Yada, and Dr. David Kaplan from Tufts University.

AFI released a new report, Monitoring and Measuring Food Loss and Waste in Canada: A Snapshot. Through discussions with stakeholders,

author Chloe Alexander concludes that variations in definition and measurement of food loss and waste are common; governments and businesses will need to set targets, establish guidelines, and develop systems of collaboration and sharing to support monitoring and measurement and reduce food loss and waste.

Projects by Arrell Scholars across the food system are working to ensure that agricultural production is sustainable, productive, and efficient. In the livestock sector, Tunmise Ehigbor has been appointed Secretary of the Animal Welfare Foundation of Canada while continuing research on poultry welfare, and Guilherme Madureira has spent the summer as the communications coordinator of the Dairy@Guelph network, while researching how to optimize reproduction in dairy cattle. Jessica Castellanos Labarcena is using molecular tools to study the diversity of endangered species, winning the Best Student Poster awards at the PISCes conference; while Roshan Pudasaini’s research has found that crushing nodules from legume roots onto new seeds can transfer beneficial microbes to the plant, improving nitrogen fixing and increasing plant yield.



Following the premiere of U of G’s *The Future of Food* video at the Royal Agricultural Winter Fair, Dr. Fraser hosted a panel with Arrell Scholars Evan Tollenaar and Maria Margarita Fontecha and Dr. Alejandro Marangoni.

— **EDUCATION**
AWARDS
EVENTS &
OUTREACH



EDUCATION

Scholars

Six new Arrell Scholars began their graduate programs at the University of Guelph in September 2022:

2022 Scholars



Erik Dasso
Department of Human Health and Nutritional Sciences



Tiwalola Alabi
School of Environmental Design and Rural Development



Nicholas Bannon
Department of Food, Agricultural and Resource Economics



Chinaza Arinzechukwu
Department of Food Science



Tunmise Faith Ehigbor
Department of Animal Biosciences



Dakota Cherry
Department of Family Relations and Applied Nutrition



Arrell Food Institute announced the four recipients of the 2023 scholarship:

2023 Scholars



Anna Ngwenyi Mafor
School of Engineering



M Manjurul Islam
Department of Geography, Environment and Geomatics



Kamshajini Raveenthiran
School of Environmental Design and Rural Development



Olivia Willoughby
Department of Population Medicine

Five Arrell Scholars completed their graduate programs and joined the Arrell Scholar alumni network:

Newest Scholar Alumni



Fatemeh Fazel
(MSc, Pathobiology)

has secured two prestigious scholarships to support her PhD studies, the HQP (highly qualified personnel) scholarship and the Aviagen graduate scholarship. Over the past year she has contributed to three research publications and provides ongoing mentorship to Afghan students seeking admission to high ranked universities.



Sugandha Raj
(PhD, Department of Pathobiology)

is now working as a postdoctoral research fellow at Ontario Veterinary College focusing on influenza virus disease modeling and developing novel therapies to minimize transmission of the virus in poultry flocks.



Sujani Rathnayake
(MSc, Integrated Biology)

was awarded the Brock Doctoral Scholarship to support her PhD studies with the department of Molecular and Cellular Biology with a collaborative specialization in One Health at U of G.



Sabrina Rondeau
(PhD, School of Environmental Sciences)

is now working as an NSERC Postdoctoral Fellow in the Department of Biology at the University of Ottawa, focusing on the impact of agricultural practices on wild ground-nesting bee communities in field crops.



Rosemary Brockett
(MSc, School of Environmental Sciences)

has two research publications in progress and is a member of the U of G team selected as a finalist in the Canadian Space Agency's Deep Space Food Challenge. The team was presented with \$100,000 and a 12-month timeline to scale up their unique plant-growth chamber prototype, a project currently underway.



Students enrolled in the AFI-led UNIV*6050 course: Innovation and Entrepreneurship in Agri-Food Systems participated in a field trip to learn about food security organizations and the work that is currently happening to promote a circular economy in Guelph. The group visited The SEED, 10C Shared Space and Noki Farms, who was also a current community partner for this year's cohort. The experience included dinner provided by Community FEWD (Food Equity with Dignity).



Arrell Scholars, along with AFI staff, visited Lynn River Farm in Stratford and Mountain Oak Cheese in New Hamburg in October 2022 to learn more about their practices and build the conversation with the future leaders about interdisciplinary collaborations in the food system.

EDUCATION

Partner Projects

It was another successful year for the student projects in the UNIV*6050 course: Innovation and Entrepreneurship in Agri-Food Systems. The community partners represented different parts of the agrifood sector and students worked to solve real-world challenges they are experiencing.



Grain Farmers of Ontario

Grain Farmers of Ontario is the province's largest commodity organization, representing Ontario's 28,000 barley, corn, oat, soybean, and wheat farmers. Students partnered with Grain Farmers of Ontario to take a closer look at the important and influential market trends and shifts relevant to Ontario-grown grains. The goal was to better understand how grain farmers can adapt to these shifts improving their competitiveness and position themselves to be both sustainable and economically successful.



Food Day Canada

Food Day Canada was founded in 2003 by the late Anita Stewart and has grown to include over 150 partner restaurants, farmers and chefs. The students were tasked to find ways to grow and expand the celebration both locally and across Canada.



Noki Farms

Noki Farms is a hybrid indoor farm retail space in Guelph that offers mushrooms, microgreens, and fresh herbs. The students on this project looked at how the company can expand its customer network in a sustainable manner by identifying potential customers, developing marketing materials, and understanding the value created by having these hyper-local and specialty items or products available in the community.



10C Shared Space

10C Shared Space and Our Food Future are working together in the City of Guelph to create a regional food policy and programming working group called The Food System Resiliency Table. The students provided recommendations to the group to update the existing Food Charter, keeping in line with best practices and frameworks for food policy development, lessons learned from COVID-19, and supporting the transition to a circular economy.



City of Charlottetown

The City of Charlottetown is home to 40,500 residents and recently composed the Charlottetown Food Council in response to its plans and goals related to food security and a more sustainable food system. For this project, students took a closer look at this municipality, the issues it currently faces, and where it can focus its efforts to improve food security and enrich food networks to help inform the creation of a food strategy.

EDUCATION

AWARDS

**EVENTS &
OUTREACH**



AWARDS

2023 Arrell Global Food Innovation Awards



Winner of the 2023 Arrell Global Food Innovation Award for research impact

Sara Bonham

Sara Bonham is a scientist who has made breakthroughs in food research throughout her career. She advanced the sensory and functionality of “milk from plants” (non-dairy milk) for consumers, and in her more recent work over the past five years, developed a novel, plant-based beverage which helped to improve the health of older adults particularly during the COVID-19 pandemic. As a food technology innovator, Bonham uses her unique understanding of food science, agricultural chemistry, and biological engineering to research ingredients and develop scalable food solutions. Most recently she founded the food technology company Sweet Health, where she consults, innovates novel food ingredients, and develops brands for human and planetary health.



Winner of the 2023 Arrell Global Food Innovation Award for research impact

NASA Harvest

NASA Harvest scientists use satellite data to monitor the impact of the war in Ukraine on its agricultural land and food production. Analyses are conducted rapidly and resulting information covers areas not accessible by ground. The team works with Ukraine’s Ministry of Agriculture to analyze crop planting, harvest, and yields. As Ukraine is a significant contributor to global food production, the information NASA Harvest gathers is significantly useful as it helps evaluate the impact of the ongoing conflict on the country’s crops and farmland, and ultimately contributes to global market stability. In service to the consortium’s overarching mission, NASA Harvest regularly develops tools and products to make agriculture-relevant Earth observation information available all over the world.

46

high-quality nominations were received for the 2023 Arrell Global Food Innovation Awards



Winner of the 2023 Arrell Global Food Innovation Award for community engagement

Câm Dairy Foods Limited

Câm is a female-owned and led pastoralist-driven dairy social enterprise in Nigeria. Its aim is to establish a dairy industry to support Nigeria’s food sovereignty by transforming the country from a net importer to net producer of milk by 2050. It is centred on pastoralist communities, including a grazing reserve area with a sizable pastoralist and cattle population, and recently launched an entrepreneurship-led model to create employment opportunities for youth in rural communities, providing a viable career that respects traditional values, and culture. Câm’s work has had economic, nutritional, employment, and capacity-building impact.

AWARDS ADJUDICATORS



Jessica Fanzo

Dr. Jessica Fanzo is the Bloomberg Distinguished Professor of Global Food Policy and Ethics at Johns Hopkins University.



Jennifer Grenz

Dr. Jennifer Grenz is an Assistant Professor and Indigenous Scholar in the Department of Forest Resources Management jointly appointed between the Faculty of Forestry and Faculty of Land and Food Systems at the University of British Columbia.

EDUCATION AWARDS

EVENTS & OUTREACH

EVENTS AND OUTREACH



Arrell Food Institute has hosted and participated in several events and engagements this year. Topics covered a range of food system themes tailored for different audiences.

Food Day Canada

AFI hosted a University of Guelph Food Day Canada Showcase at the Arboretum Centre on July 11 in collaboration with the Ontario Agricultural College and the School of Hospitality, Food and Tourism Management at the Gordon S. Lang School of Business and Economics. It was a celebration of U of G's contributions to Canadian cuisine. The event included a local chef competition, research displays and a marketplace with U of G and alumni food products for sale. The event sold out and had approximately 175 people in attendance. The event helped to encourage collaboration across the university and demonstrate how U of G is Canada's Food University. The event also resulted in two media pieces and significant social media attention.

Deep Dish Dialogues

There have been eight Deep Dish Dialogues events this year. Deep Dish Dialogues are recurring events that are streamed live from the Anita Stewart Memorial Food Laboratory at U of G and are a way to bring different people in the food industry to participate in conversations with members of the U of G community in front of a live audience. Topics covered this year included: taste of place, butchery, frozen food, food prices, the beverage industry, Nigerian food, food waste, Indigenous, wild and farmed food, and food justice. There were a total of 375 online viewers and 212 in-person guests. All events can be viewed on YouTube which has amassed over 775 views.

Arrell Food Cinema Series

The idea to host a local community event that would showcase films and facilitate conversations was brought forward by a group of Arrell Scholars in 2022. Together, staff and scholars organized the two Arrell Food Cinema Series events which were attended by a total of 150 people.

SEED: The Untold Story at The Bookshelf in Guelph

With panelists from: U of G, Seeds of Diversity, White Owl Native Ancestry Association and SeedChange

First We Eat: Food Sovereignty North of 60

With panelists from: U of G and The Conscious Farm Kitchen

The sixth annual Arrell Food Summit: Pathways to Change is November 2023. This follows a very successful Summit that was hosted in June 2022.




Most popular webpages:

Arrell Global Food
Innovation Awards
Arrell Scholarships
Net-Zero Challenge

collectively reaching 23,000
page views

 **136**
media hits




Nearly 82k
website hits


**More than
514k since
2017**



More than
40k
followers

of AFI and team members
on social media

 **18**
op-eds by AFI people


@arrellfoodinstitute
launched its profile on the new social
media platform Threads

Arrell Food Institute has been fortunate to attract and retain many talented and experienced individuals in the staff team.

To focus on the priorities set out in the Strategic Plan 2023-2028, staff numbers have increased. The newly appointed staff boost communication for impact and allow AFI to lead and engage in larger and more complex projects.



AFI PEOPLE

Director

Evan Fraser

Chairs

Maria Corradini, Arrell Chair in Food Quality

Tongzhe Li, Arrell Family Chair in
Behavioural and Experimental Economics

Philip Loring, Arrell Chair in Food, Policy
and Society

Simon Somogyi, Arrell Chair in the Business
of Food

Staff

E'layna Baker, Communications Coordinator

Nina Berry, Financial Officer

Erin Doherty, Strategic Initiatives Lead

Rebecca Gordon, Culinary Projects Lead

Janice LeBoeuf, Strategic Initiatives
Coordinator

Muriel O'Doherty, Events Manager

Alice Raine, Director of Operations

Jeanna Rex, Education Coordinator

Sweni Sabaratnam, Administrative Officer

Monica Scott, Communications Manager

Elizabeth Shantz, Knowledge Mobilization
Manager

Arrell Scholars

Tiwalola Alabi

Chinaza Arinzechukwu

Nicholas Bannon

Dakota Cherry

Erik Dasso

Katherine Eckert

Tunmise Faith Ehigbor

Maria Margarita Fontecha

Emily Kalie

Jessica Castellanos Labarcena

Guilherme Madureira

Andrew Nixon

Roshan Pudasaini

Zahra Saghabi

Maleeka Singh

Evan Tollenaar

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Arrell Food and Business Technology Forum

The Arrell Food and Business Technology Forum returned in May 2023 with a panel of experts. The virtual event focused on smart retailing and what is driving the adoption of these technologies, and what factors are inhibiting their use including future trends. Fifty people tuned in to the live event.

Conversations about Sustainable Food Systems

To help bring together people from across the food system and facilitate conversations about sustainable food systems, AFI hosted a panel and networking event in Ottawa, "Conversations about Sustainable Food Systems." Approximately 75 people joined us to listen and engage in discussions about how we can work together to make our food future more sustainable.

Global Food Forum

AFI continues to be a media partner with the Wall Street Journal's Global Food Forum. The 2023 event, in Chicago, was attended by Strategic Initiatives Lead, Erin Doherty. The annual event brings leaders together from the system to explore trends, technologies, ideas, and opportunities shaping its future.



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