

Research & Innovation **Impact Report**

2023-2024



CONESTOGA
Connect Life and Learning

RESEARCH, INNOVATION
& ENTREPRENEURSHIP

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Land acknowledgement

At Conestoga, we recognize that our campuses in Kitchener, Waterloo, Cambridge, and Brantford are situated on the Haldimand Tract, land that was promised to the Haudenosaunee people of Six Nations and extends six miles on either side of the Grand River. This land is traditionally stewarded by the Anishnaabe, Haudenosaunee, and Neutral peoples.

As we engage in research and innovation, we acknowledge and honour the knowledge and

contributions of these Indigenous communities, who have been stewards of this land for thousands of years. Our commitment to advancing knowledge and innovation is enriched by respecting and learning from the wisdom of the Indigenous peoples on whose territory we live, work, and learn. This acknowledgment serves as a reminder of our responsibility to engage in our research with respect and a deep appreciation for the land and its traditional caretakers.

A message from Dr. Michelle Chrétien

Vice president,
Research
& Innovation

I am happy to share our Research & Innovation Impact Report for the 2023-2024 fiscal year and celebrate the success of our innovation community at Conestoga. This report showcases our dedication and commitment to making research accessible, diverse, and impactful for our students, faculty, and the communities we serve. Over the past fiscal year, we undertook 140 projects, engaged with 116 industry and community partners, and gave 211 students the critical experience they require to start their careers through paid student researcher positions. We also connected 70 faculty members with research opportunities, supporting them in lending their expertise to our partners and students.


While externally funded projects remain integral to our research efforts, our internally funded Conestoga New and Emerging Research Grant



(CNERG) is also proving to be a tremendous success. First offered in 2022, CNERG has now funded 25 projects at Conestoga across all areas of research and schools of study. This enthusiasm for the CNERG program has led to an additional investment from the college, allowing us to further expand the internal funding program to now support larger-scale projects.

As you read through this report, I hope you find excitement and inspiration in our sector-leading entrepreneurship activities and the high-quality research conducted by our students and faculty. It is their dedication that continues to build our reputation as a leading research college in Canada and enables us to navigate the everchanging economic, social, and environmental landscape with ingenuity and resilience.

Research objectives

 Provide students with meaningful experience solving real-world innovation challenges.

 Create a meaningful difference in the communities we serve by fostering social innovation and generating economic impact.

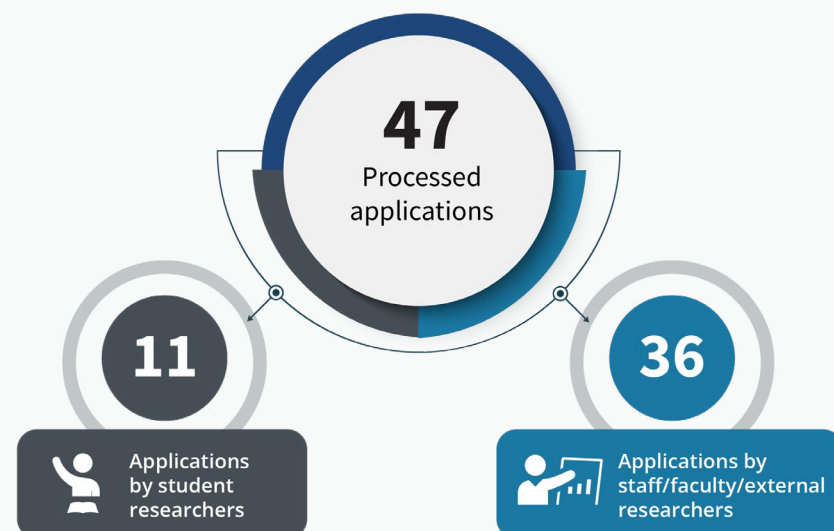
 Provide faculty with opportunities to engage with industry and the community, allowing them to enhance their skills.

Research Ethics Board

About the Board

The Research Ethics Board (REB) is a volunteer committee of experienced researchers and subject matter experts who review all research protocols involving human participants and apply the principles of the [Tri-Council Policy Statement \(TCPS 2\): Ethical Conduct for Research Involving Humans](#).

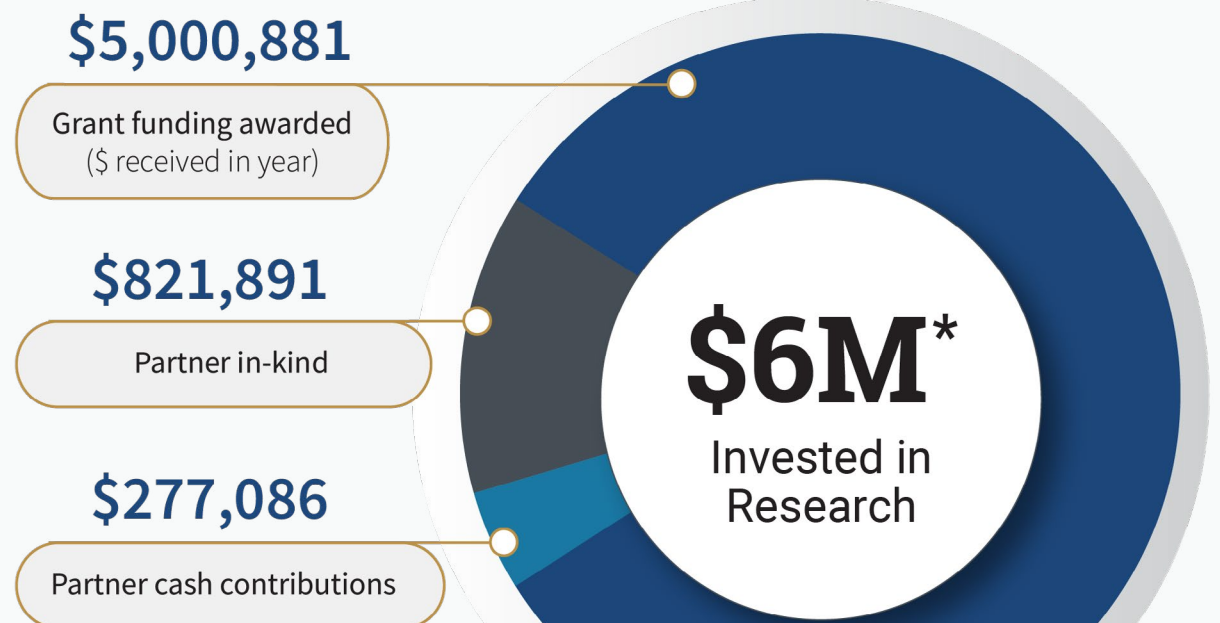
These principles -- respect for persons, concern for welfare and justice -- are essential pillars to research conducted under the auspices of Conestoga. The REB facilitates applied research activities and research activities within the classroom in accordance with these principles.



By the numbers

CANADA'S TOP
50
RESEARCH
COLLEGES

2022 [Research Infosource Inc.](#)
Ranking: **17th**



The people behind the projects:



* Approximate numbers

Notable awards

NSERC Mobilize

Conestoga was awarded approximately **\$3 million over five years** from the Natural Sciences and Engineering Research Council of Canada (NSERC) College and Community Innovation (CCI) program to bolster innovation in Waterloo Region.

Conestoga's Mobilize funding will support several key initiatives that support sustainable and inclusive communities:

- Foster interdisciplinary collaboration among faculty and students to expand research inclusivity
- Enhance capabilities in emerging research areas to boost research capacity
- Ensure robust collaborations by nurturing and reinforcing existing partnerships



Mobilize grants provide Canadian colleges with flexible funding to acquire necessary resources to address applied research priorities in industry, public, and not-for-profit organizations within their community and to provide applied research training opportunities for students.



Intellectual Property Ontario

Conestoga was awarded **\$300,000 from Intellectual Property Ontario (IPON)**, a provincial agency that provides IP support and services to enable Ontario businesses and researchers to innovate and grow. Through this funding, Conestoga launched the Centre for Commercialization to support regional businesses with commercialization and intellectual property support.



Awards and recognitions

2023 Minister's Award for Excellence in Agriculture and Excellence in Research and Innovation Award

Conestoga research centre honoured with awards of excellence

The Conestoga Food Research & Innovation Lab was honoured with the 2023 Excellence in Agriculture Minister's Award and the Excellence in Research and Innovation Award in November during a special presentation by Minister Lisa Thompson at the Royal Agricultural Winter Fair in Toronto.

The Excellence in Agriculture awards are presented across 11 categories and were established by the Ontario Ministry of Agriculture, Food and Rural Affairs to celebrate the outstanding work of individuals, businesses and organizations in the agriculture and food industry.



Colleges and Institutes Canada Award of Excellence in Applied Research and Innovation

Conestoga was presented a silver Award of Excellence in the Applied Research and Innovation category from Colleges and Institutes Canada (CICan). The award was announced in April at the World Congress -- a global event co-hosted by CICan and the World Federation of Colleges and Polytechnics to bring together post-secondary leaders worldwide.

The Awards of Excellence recognize best practices and individual achievements from colleges and institutes across the country and are presented annually to a group of CICan members who are honoured for their outstanding leadership and contributions to advancing Canada's social, cultural and economic development.



Later, Zandra Bear-Lowen and Dr. Stephen Svenson jointly presented their Indigenous research projects, Restoring Language, Culture and Land: Mobilizing a Community Around Indigenous Knowledge and Wijindamaan: An Indigenous Land-based Futurity. Followed by Bear-Lowen and Dr. Svenson was SMART Centre researcher and Engineering professor, Dr. So-Ra Chung, presenting her SMART Centre-focused applied research projects and the impacts they have on student learning.

Faculty holding a Conestoga New and Emerging Research Grant (CNERG) were also given the opportunity to participate in a 90-second lightning round to discuss their projects.

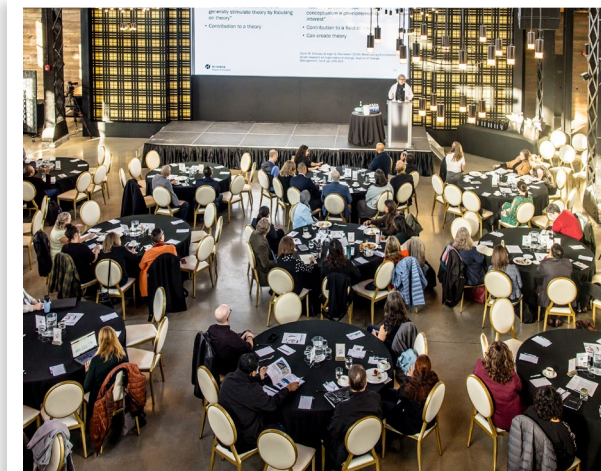


2023 Research & Scholarship Symposium

In October, over 200 faculty and staff from Conestoga's ten academic schools came together to learn more about research and scholarship activity at the college during the inaugural Research & Scholarship Symposium at Tapestry Hall in Cambridge.

Hosted by Research, Innovation & Entrepreneurship, in collaboration with Teaching & Learning and Degree Quality & Accreditation, the event featured over 30 speakers, including keynote speaker Dr. Ginger Grant, dean of Research & Innovation at Humber College.

The morning portion featured presentations from Conestoga's research centres, labs, and institutes, each one focusing on their research themes and how faculty can connect with them to get started on an applied research project.



During the afternoon's Scholarship Activities Showcase, Dr. Anna Czegledi, Cathy Egan, Dr. Sara Kafashan, and Dr. Lauren Spring presented their scholarship research projects.

To wrap up the day, seven college resources individually presented their services and how they work to support faculty conducting applied research and scholarship research.

CNERG & CNERG+ spotlights



Seventeen researchers have been awarded CNERG and CNERG+ funding for projects beginning winter 2024. Building on the success of the CNERG pilot program launched in 2022, nine new recipients will receive \$10,000 to fund small-scale projects, while eight recipients will receive up to \$100,000 for large-scale projects thanks to the launch of CNERG+.

CNERG+

Baseline Ourboro Impact Study

Dr. Anthony Piscitelli, Conestoga Social Innovation Lab, Dr. Ryan Deschamps, professor, School of Applied Computer Science & Information Technology, Dr. Domenica De Pasquale, professor, School of Interdisciplinary Studies

Digital Transformation in SMEs

Dr. Fatih Yegul, School of Business

Understanding the Experiences of International Health Care Provider Students

Linda Sheiban Taucar, M.Sc., Fateema Kassam, M.Sc., Meaghan Davey, M.Sc., Centre for Health Care Research & Innovation

Application of Culinary Techniques to Improve the Palatability of Meals for Individuals with Dysphasia

Nicole Detlor, M.Sc., P.Eng., Linda Sheiban Taucar, M.Sc., Cynthia Riddle, Emily Parkinson, RN, Fateema Kassam, M.Sc., Jennifer Shamblaw, Meaghan Davey, M.Sc., Sujit Abraham, Conestoga Food Research & Innovation Lab and the Centre for Health Care Research & Innovation

Optimizing Food Security and Sustainability Efforts

Stephen Thomson, MBA, and Nicole Detlor, M.Sc., P.Eng., School of Business and Conestoga Food Research & Innovation Lab

The Inequity Gap: The Reality of Women CFP Professionals in Canada

Tanya Staples, CFP, School of Business

Crafty Ramen Noodle Texture for Commercial Application

Tracy Butt, M.Sc., Conestoga Food Research & Innovation Lab

Enabling Sustainable Management Through Systemic Innovation

Dr. Vlad Toma, School of Hospitality & Culinary Arts



CNERG

Analysis of Video Discussion Posts in College Course Instructional Design

Joseph Scarfone, School of Workforce Development, Continuing Education & Online Learning,

A Playbook for Marketing Professionals to Implement a Multi-Stakeholder CRM Campaign in India

Iram Ahmed, MBA, School of Business

Exchange Rate Effects and the Canadian Food and Beverage Sector

Dr. Kenrick Jordan, School of Business

Evaluating the Efficacy of Assessment Strategies Across Course Delivery Modalities

Kyle Nickason, MBA, School of Business

Gently Nurturing Hardiness in Young Children: A Framework for Parents and Educators

Dr. Debashis Dutta, School of Community Services

Photovoice: Exploring the Mental Well-being of Racialized Immigrant Youth in Toronto

Dr. Mustahid Husain, School of Business

Study of Temperature in and around Septic Systems for Feasibility as Heat Pump Heat Source

Karen Kokkelink, P.Eng., School of Engineering & Technology

Undergraduate Tourism and Hospitality Students Attitude Towards a Career in the Industry

Andrew Middleton, M.Sc., School of Hospitality & Culinary Arts

Indigenous research activities

Growing Together: Inviting Indigenous Ways of Knowing and Being into the Early Years

Heather MacDonald (PI)

This project explores an innovative approach to early childhood education by integrating Indigenous knowledge into teaching gardens, aiming to create meaningful learning experiences rooted in play and nature.

The Growing Together project seeks to empower early years' educators to incorporate Indigenous perspectives by engaging Indigenous partners and Elders, educating staff about Indigenous plants, culture, and language, and creating safe learning spaces.



Additionally, the project aims to establish teaching gardens across early years' programs, involving children and families in planning, planting, and cultivating gardens with local Indigenous plants and cultural elements.

Aligned with provincial pedagogical principles, the project promotes relationship-based education and positions children as capable learners. It aims to raise awareness and respect for Indigenous history, culture, and language through gardening activities focused on land caretaking, nature connection, and learning Indigenous plant stories. The project also aims to enhance early childhood education programs by integrating garden project learnings into the curriculum and engaging faculty and students. Finally, it seeks to share learnings through various channels to advance understanding and support of Indigenous ways of knowing and being in the early years' community.

This project was supported in part by the Hallman Foundation and their financial contributions are gratefully acknowledged.



Wijindamaan: An Indigenous Land-based Futurity

Dr. Stephen Svenson (PI) and Zandra Bear-Lowen (PI), School of Interdisciplinary Studies

Wijindamaan: An Indigenous Land-based Futurity, is the innovative development and application of urban land co-management strategies rooted in traditional Indigenous land-based practices and knowledges. The COVID-19 pandemic has exacerbated many adverse social determinants of health within urban Indigenous communities across the country. Combined with the closure of many community food gardens and urban parks at the beginning of the pandemic, this further stressed many urban Indigenous Peoples' relationship with the land, especially at a time when Elders and Knowledge Keepers were asking for an increased collection and use of traditional medicines.

Building on the work already accomplished by local grassroots Indigenous community organizations, this project will allow for an enhanced coordinated effort among our community partners -- the City of Kitchener, White Owl Native Ancestry Association and the Wisahkotewinowak Urban Indigenous Garden Collective -- to create a 33-acre restoration project securing sustainable, traditional food and medicines, increasing local biodiversity through habitat restoration and reintroduction of native species, building community capacity, mobilizing knowledge, and exercising land co-management and relational agricultural practices on the land.

The Wijindamaan project is supported in part by the Social Sciences and Humanities Research Council (SSHRC) through the College and Community Social Innovation Fund (CCSIF).



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

Canada

Featured project

A Recipe for Success: Conestoga Accelerates Time to Market

Tracy Butt, M.Sc. (PI) CFRIL, Ivana Pleic, P.Eng. (PI) SMART Centre, Colleen McCann, PMP (PM) SMART Centre

Since 1963, Pusateri's Fine Foods has been serving the Greater Toronto Area (GTA) as an authentic butcher and provider of fine foods. Through their five stores located across the GTA, Pusateri's serves a collection of gourmet, artisanal, and imported products.

As Pusateri's has evolved since its establishment in 1963, the company has continually aimed to enhance its offerings and operational efficiency. In 2021, Pusateri's partnered with Conestoga's Smart Manufacturing & Advanced Recycling Technologies (SMART) Centre to explore automation solutions to grow and maintain their operations.



PUSATERI'S

With the help of the SMART Centre during the first project, Pusateri's was able to automate their processes, enabling them to make more, faster. While this provided enormous benefits to Pusateri's in their production process, it also meant they were storing more product.

That is where the Conestoga Food Research & Innovation Lab (CFRIL) came in. Since CFRIL's researchers share over 80 years of combined industry experience in food and packaging, CFRIL was the obvious choice for Pusateri's next research partnership.

"It was a natural extension to continue using the Conestoga team to look at extending the shelf-life of the soups," said Shannon Shorter, plant operations manager, Pusateri's.

Over the year-and-a-half project, CFRIL researcher Tracy Butt, with the help of research students, began the task of extending the shelf-life of Pusateri's soups and stews.

Because Pusateri's produces a diverse range of soups and stews, the research team had to identify different groups to separate them, ensuring a large enough sample size for testing that could accommodate all possible variations of the recipe.

Next, the research team had to pay special attention to any suggested modifications to ensure the taste, texture, appearance, and aroma would not be significantly altered. Knowing the products are clean-label and clean-flavour, any additives would be picked up in the flavor profile of the product.

"You don't want to change the product so drastically, unless the industry partner is okay with it," said Butt.

Although the focus of the project was to extend the shelf-life of Pusateri's soups and stews, the collaboration extended beyond that to include how the changes may affect the retail side of the business.

Shorter says this holistic approach allowed Pusateri's and CFRIL to openly collaborate and consider more than just the scientific perspective of the project.

"With Conestoga, we had the opportunity to collaborate and determine the changes needed. It was not just about the science but also the retail side of things. We could ask, 'is this product

something we want to sell to our customers?'"

With the help of CFRIL, Pusateri's was able to extend the shelf-life of their soups and stews, enabling them to scale up production and expand in the market.

Longer term, it also gives them a path forward to take these findings and use them for future recipe development, allowing them to accelerate their research and development time.

We acknowledge the support of the Natural Sciences and Engineering Research Council of Canada (NSERC).





Meet our research and innovation leaders

Dr. Amin Yazdani

Executive director, Canadian Institute for Safety, Wellness & Performance

Dr. Yazdani is the executive director of the Canadian Institute for Safety, Wellness & Performance. He is also an adjunct assistant professor at McMaster University, the University of Waterloo, and Pacific Coast University for Workplace Health Sciences.

Dr. Yazdani is a member of the Canadian Standard Association (CSA Group) Occupational Health and Safety Strategic Steering Committee, and a recipient of the 2018 Standards Council of Canada Young Leader Award.

Dr. Yazdani uses a multidisciplinary strategy to develop innovative approaches to prevent workplace injuries and work disability at the organizational level. Dr. Yazdani's research interest centres around standardization of human factors and



ergonomics in the design of products and work environments by developing best practices and technical standards. In addition, he has extensive experience in collaborating with small, medium and large organizations to implement organizational-wide approaches to prevent workplace injuries and improve productivity and performance.

Linda Sheiban Taucar, B.Sc. Nursing, M.Sc.

Director, Centre for Healthcare Research & Innovation

Linda Sheiban Taucar has been part of the Conestoga community for over nine years. She is a registered nurse and the former associate director, Health Sciences Research at the Canadian Institute for Seniors Care at Conestoga and is currently the director of the Centre for Health Care Research & Innovation. Linda also teaches in the enhanced practice for internationally educated nurses program at Conestoga. Linda received her B.Sc. and M.Sc. degree at the University of Waterloo in health studies and gerontology and later went on to pursue her B.Sc. Nursing at York University.

Linda uses her joint clinical and research knowledge to advocate for gerontological nursing best practices. She leads applied research activities, focusing on



evidence-based care and curriculum development in health care. In 2022, Linda co-authored the third edition of Ebersole and Hess' Gerontological Nursing & Healthy Aging in Canada textbook.

Rose Mastnak, MBA

Director, Conestoga Entrepreneurship Collective

Rose Mastnak, director of the Conestoga Entrepreneurship Collective since its inception in 2019, directs the organization's strategic vision and leads a growing team dedicated to fostering entrepreneurship among Conestoga students and alumni. With a background spanning various cities including New York City, Toronto, and Vancouver, Rose returned to Kitchener in 2010, where she has been actively involved in the community since joining Conestoga in 2014 as a full-time professor of marketing. Her professional journey, rooted in international advertising agencies since 1999, reflects her entrepreneurial drive and passion for bringing innovative ideas to market.



Rose holds a BA in communications and political science from York University, an MBA from Simon Fraser University, and a graduate certificate in entrepreneurship and innovation from Stanford University.

Nicole Detlor, M.Sc., P.Eng.

Director, Conestoga Food Research & Innovation Lab

As director of the Conestoga Food Research & Innovation Lab (CFRIL), Nicole leverages over 20 years of expertise in food industry innovation, product development, quality assurance, and regulatory affairs. Her role involves connecting industry partners with CFRIL's technical expertise, fostering collaborative relationships, and guiding strategic initiatives. Nicole holds a B.Sc. in engineering from the University of Guelph, specializing in food processing, and a M.Sc. in engineering focused on novel control systems, drying, and machine vision for the food industry.

Since becoming a registered P.Eng. in Ontario in 2006, she has driven impactful projects such as implementing product life cycle software at Dawn Foods, optimizing product development processes, and leading reformulation efforts at Maple Leaf Consumer Foods post-listeria recall. Nicole's career highlights also include advancing high-pressure processing for shelf-life extension and commercializing award-winning products like the Recipe to Riches Luscious Lemon Pudding for Loblaws, demonstrating her commitment to innovation in food processing.



Jeff Dukes, P.Eng.

Director, Smart Manufacturing & Advanced Recycling Technologies (SMART) Centre

Jeff Dukes serves as the director of Conestoga's Smart Manufacturing and Advanced Recycling Technologies (SMART) Centre in Cambridge, Ont. He earned his B.Sc. in mechanical engineering, specializing in product design, from Lake Superior State University in Sault Ste Marie, Michigan in 2003, and holds his P.Eng. license from Professional Engineers of Ontario. Jeff brings over 20 years of extensive experience across automotive, consumer products, and defense industries.

At DURA Automotive, Jeff excelled as a senior product engineer, overseeing the design and production of park brake cables, automatic and manual transmission shifters, and transfer case shifters. Later, as engineering manager at Dimplex North America, he led the redesign and successful launch of the Dimplex baseboard heater product line, alongside innovative controls for the Dimplex Connex heating system. His leadership continued to flourish at Colt Canada as senior director of engineering, where he played a pivotal role in developing and supporting small arms for the Canadian Military and NATO allies. Throughout his career, Jeff has been instrumental in the successful development, launch, and international production of products, earning multiple patents for innovations achieved during his tenure at Dimplex North America and Colt Canada.



Dr. Alla Darwish

Director, Centre for Commercialization

Dr. Darwish is the director of Conestoga's Centre for Commercialization. Dr. Darwish earned a PhD in chemistry from the University of Waterloo and an MBA from Lazaridis School of Business and Economics. He has successfully generated start-up companies, scaled operations, and transferred technology.

With 12 patents to his name, Dr. Darwish is passionate about driving the commercialization of innovative technologies and making a significant impact locally and nationally. Dr. Darwish has played a pivotal role in fundraising (series A&B), IPOs, licensing, and acquisitions for numerous successful start-ups, bringing expertise in IP strategy, due diligence, and market research. Recently, at Ontario Tech University, he led the development of processes for IP disclosure, assessment, and commercialization, enhancing IP capacity and streamlining operations.



Dr. Anthony Piscitelli

Director, Conestoga Social Innovation Lab

Dr. Piscitelli is the director of the Conestoga Social Innovation Lab and holds a PhD in geography and an MA in political science, both from Wilfrid Laurier University. He is certified as an Institute of Corporate Directors, director, an accredited Canadian Credit Union director, and a certified municipal manager level 3. Dr. Piscitelli is also currently serving as the chair of the board of Your Neighbourhood Credit Union and a director for the Directors' Forum Co-operative.

In addition to his role as a professor and coordinator in the School of Interdisciplinary Studies he is also leading a SSHRC-funded project supporting the launch of Union: Sustainable Development Co-operative, a community-owned affordable rental housing provider. His other research interests include board governance, public opinion, and social finance. Before becoming a professor, he spent fifteen years working in government and the non-profit sector.



Research centres and institutes

Canadian Institute for Safety, Wellness & Performance

Established in 2019, the Canadian Institute for Safety, Wellness, & Performance (CISWP) is an applied research institute that focuses on addressing complex real-life challenges faced by workers and businesses in Canada.

CISWP is the only institute of its kind in Canada and one of few institutes worldwide with the mandate and vision to conduct applied, industry-driven health and safety research (i.e., with real workers in real work environments).

The institute reaches businesses across different sectors and has a strong network of partners across the province, the country, and internationally. Alongside CISWP's large ecosystem of industry partners, CISWP is strategically established at Conestoga, which enables access to the next-generation workforce and the faculty teaching them. These strong and diverse relationships provide an unprecedented opportunity to influence change early and more broadly.



Skilled Trades Research, Innovation, and Education in Occupational Safety and Health (STRIVE OSH)

Dr. Amin Yazdani (PI) and Dr. Marcus Yung (PI)

Funded by the Ontario Ministry of Labour, Immigration, Training and Skills Development (MLITSD), this three-year project aims to improve the success and competitiveness of Ontario skilled-trades businesses by directly addressing workforce challenges and preventing workplace injuries and disabilities. Canada's skilled trades sector plays a vital role in our national and provincial economies. The construction industry alone accounts for 7.8 per cent of Canada's gross domestic product and employs approximately one out of every 13 working Canadians.

The skilled trades expect a significant shortage of over 170,000 skilled workers in the next ten years. Contributing to the shortfall are early exits from the labour market and a wave of retirements. In general, early exits from the labour market may be attributed to workplace injuries and disabilities; skilled trades workers are particularly at risk. Workplace injuries cost businesses billions of dollars due to worker absence, lost productivity, and other indirect costs. The skilled trades industry has three pressing needs: sustaining the rapidly aging workforce, reducing the risk of worker injury, and improving job accessibility for underrepresented groups such as women, people with disabilities, newcomers to Canada, and Indigenous peoples.

The STRIVE OSH project consists of nine research initiatives guided by three overarching themes:

1. Build capacity of the current and next generation of the skilled trades workforce
2. Develop and innovate tools, guidelines, and best practices through applied research
3. Knowledge and technology exchange and exploitation

The outcomes of this work will have direct economic and societal impacts on Ontario, train the next generation of skilled trade workers in the province, and help industries (particularly small and medium-sized enterprises) build capacity and assist in promoting innovation and commercialization.

Ontario 

**Ministry of Labour,
Training and Skills
Development**

By the numbers

 **6** Active projects

 **5** Publications

Funding
\$1,429,646

Centre for Health Care Research & Innovation



The Centre for Health Care Research & Innovation (CHCRI) partners with industry, researchers, faculty, and students with the overall goal of strengthening the healthcare system through collaborative, community-focused research.



Building Intergenerational Connections

In the last two years, the CHCRI received funding from the Public Health Agency of Canada, Supporting Inclusion through Intergenerational Partnerships, and Employment and Social Development Canada to develop and deliver age- and dementia-inclusive programs for high school and college students and young professionals to participate in regular activity groups with people living with dementia. To date, these programs

have included over 400 intergenerational activity sessions, 1,700 students, and 2,000 people living with dementia from across Canada.

These programs are designed to support students in developing new relationships with older adults and to promote inclusivity in students' future careers and communities. Experiential learning has been shown to be an effective tool for learning

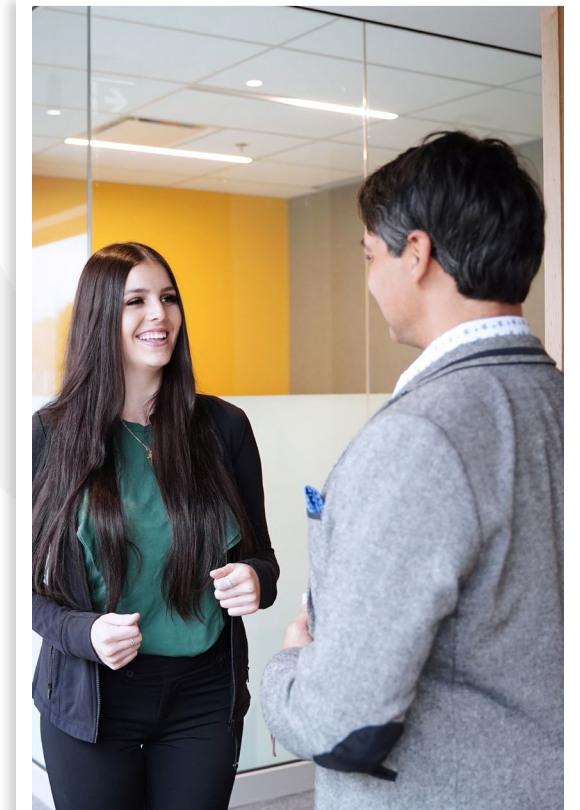
interpersonal skills and challenging misconceptions regarding aging. These projects have collectively made an impactful contribution to the knowledge base of effective strategies for engaging students and providing meaningful socialization opportunities in the community for all age groups.

Key findings for how students' perspectives on aging have changed after participating in the programs included recognizing older people with dementia as people like themselves, a greater understanding of what dementia is, willingness to show compassion and empathy, and greater respect for others.



Public Health Agency of Canada

Agence de la santé publique du Canada



By the numbers



Conestoga Entrepreneurship Collective



The Conestoga Entrepreneurship Collective (CEC) empowers members of the Conestoga community to pursue their entrepreneurship potential and participate in the innovation economy. Programming supports new venture founders, freelancers, and high-growth sales professionals. In May 2024, the CEC celebrated five years of impact in the college, the ecosystem, and the community.



Venture Lab

The Venture Lab is a universal business incubator that helps early-stage startups validate and develop their business idea. Businesses can be from any industry, use any business model and be at any scale.

Featured graduate: Dima Aldera

Venture Lab | Graduated April 2024

Founded findsuri.com, a new not-for-profit platform focused on enabling Syrian families to safely reconnect with missing loved ones. Secured core funding from municipal government.



Gig Lab

The Gig Lab is Canada's first business incubator for freelancers, designed to address the nuances and specific needs of self-directed professional service providers while developing the skills, mindsets and tools to thrive in the professional gig economy.

Featured graduate: Teresa Moscado

Gig Lab | Spring 2023 cohort | Graduated August 2023

Launched a freelance marketing company called T. Moscado in fall 2023.



Gig Marketplace

Graduates of the Gig Lab launch their freelance businesses on the Conestoga Gig Marketplace at www.conestogagigs.ca. The CEC has forged partnerships with organizations, including the Accelerator Centre, Catalyst Commons, Greater KW Chamber of Commerce, and Communitech, to generate business and support local companies with Conestoga freelance talent.

>\$350k
in projects to support
Conestoga freelancers

Venture Lab for Skilled Trades

The Venture Lab for Skilled Trades helps entrepreneurs build their own business over 15 weeks. This new program launched in fall 2023 and is funded by a generous donation from the RBC Foundation as part of RBC's Future Launch initiative.

Featured graduate: Gage Funkenhauser

Venture Lab for Skilled Trades | Fall 2023 cohort | Graduated December 2023

Founded Twelve Gauge Coatings, a venture focused on industrial protective ceramic coatings for harsh environments. This venture won the \$5,000 first prize at the Wilf Rieck Pitch Day in fall 2023.



Sales Lab for Founders

The Sales Lab for Founders in the CEC is the only incubator in Canada for launching B2B sales careers. This unique program was developed in collaboration with industry to nurture high-potential candidates for desirable and lucrative careers in high-tech, B2B sales.

Leveraging the highly successful approach used in the Sales Lab, this program is customized for startup founders who must lead the charge on sales from Day One. This program launched in fall 2023 in collaboration with Haltech and founders from the Accelerator+ program.

Featured graduates: Ritu Jhaveri

Sales Lab for Founders | Fall 2023 cohort | Graduated December 2023



Sales Lab

The Sales Lab is Canada's only incubator for high-tech sales careers. Designed in consultation with tech companies, this program focuses on the most critical skills, attitudes and behaviours for success. Graduates of the program are supported in securing sought-after positions to launch their careers in high-tech.

Featured graduate: Kushal Panchal

Sales Lab | Winter 2023 cohort | Graduated April 2023

Secured a job as a sales development representative at Magnet Forensics in October 2023. and greater respect for others.



Conestoga Food Research & Innovation Lab



As an applied food research lab, the Conestoga Food Research & Innovation Lab (CFRIL) meets the needs of industry through education, training, research, and technical expertise.

CFRIL's advanced facilities are essential in providing solutions for small, medium, and large businesses in the food and culinary sector. Its focus is to work with partners to provide innovative solutions and support throughout the product development cycle, including formula development, shelf-life studies, packaging testing, and scale-up using its pilot plant equipment



Shelf-life Study for Novel Produce Trays

Tracy Butt, M.Sc. (PI) CFRIL, Nicole Detlor, P. Eng. (PI) CFRIL, Dushyant Puri, PMP (PM) SMART Centre

In 2022, the federal government implemented regulations to prohibit the use of single-use plastics in certain industries. As a result, an increased demand for alternative packaging for the food industry began.

Bio-Origins, located in Cambridge, Ontario, provides biodegradable and compostable fresh produce packaging, serving as an alternative to plastic and Styrofoam.

With the goal of developing novel produce trays, Bio-Origins partnered with the Conestoga Food Research & Innovation Lab (CFRIL) and Conestoga's SMART Centre on an eight-month project. During the first phase of the project, the SMART Centre designed lids needed for the containers that would be tested by CFRIL during their shelf-life study. Using designs from Bio-Origins, the SMART Centre created drawings

and the subsequent lids using food-grade polymer materials. A key component of the shelf-life study was to test the moisture of the packaging. By doing so, the CFRIL team identified the impact of moisture levels on the packaging's shelf-life. Next, CFRIL stored fruit and vegetables in the trays and simulated real grocery store conditions to further test the shelf-life of the packaging.

The result of these tests allowed CFRIL to make recommendations to Bio-Origins to aid with the development of a new packaging technology. Short term, this helps Bio-Origins increase market share and revenue, but longer term, it enables them to utilize new processes, reduce the carbon footprint of their customers, and contribute to a more sustainable future.

We acknowledge the support of the Natural Sciences and Engineering Research Council of Canada (NSERC).



By the numbers



SMART Centre



The SMART Centre was established in 2020 to support applied research, technical services, and training in the areas of advanced manufacturing, advanced recycling technologies, and cyber security.



With over 13,000 square feet of space containing state-of-the-art equipment, the SMART Centre engages faculty and students to connect industry with the expertise necessary to address manufacturing, recycling, and cyber security challenges. The SMART Centre is part of Canada's 60 NSERC-funded [Technology Access Centres \(TACs\)](#), a network of state-of-the-art applied research and innovation centres spanning the country.

Novel Security Model for Automotive SoCs

Dushyant Puri, PMP (PI) and Bassim Elhassan (PI)

ETAS Embedded Systems Canada Inc., a member of the Bosch Group, has been developing security solutions for the automotive industry for over 15 years. Embedded systems in the automotive industry are specialized computing systems integrated into different vehicle components.

They are tasked with controlling, monitoring, and managing vehicle functions. Typically built into the hardware of the vehicle's electronic control units (ECUs) and advanced driver assistance systems, these systems perform specific tasks within the vehicle, ensuring smooth operation and efficiency.

Automotive system-on-chips (SoCs) are specialized integrated circuits crafted specifically for automotive use. They consolidate numerous functions onto a single chip, functioning as the central processing units within vehicles. These chips are designed to adhere to the demanding standards of the automotive sector, prioritizing reliability, safety, and performance.

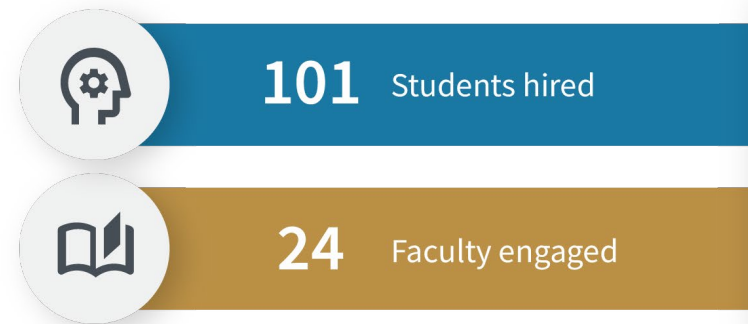
They collaborate seamlessly with automotive embedded systems, providing the necessary processing power, real-time performance, communication interfaces, safety features, and power efficiency to drive various electronic components and functionalities within vehicles.

ETAS Embedded Systems partnered with the SMART Centre to explore the creation of a novel security approach that maintained the high performance needed by advanced driver assistance systems. This eight-month project provided important findings to ETAS regarding the effectiveness of the explored approach in safeguarding the security of automotive SoCs and embedded systems.

We acknowledge the support of the Natural Sciences and Engineering Research Council of Canada (NSERC).



By the numbers



Centre for Commercialization



The Centre for Commercialization (C4C) plays a pivotal role in supporting entrepreneurs and small and medium-sized enterprises (SMEs) to unlock the full potential of their intellectual property (IP) and enhance their commercialization outcome.



Launched in August 2023, the centre offers a comprehensive suite of IP and commercialization services such as whitespace analysis and project scoping, IP identification, IP landscape analysis, recommendations on positioning of IP, prototype building assistance, and IP filing. C4C offers SMEs and entrepreneurs a structured approach to manage and leverage their IP assets to gain a competitive advantage in the marketplace.

C4C was created, in part, with support from Intellectual Property Ontario (IPON). IPON was created by the Government of Ontario to help businesses leverage IP and innovate to advance the province's economic growth and competitiveness.



Identifying Patentable Subject Matter at Belco Doors

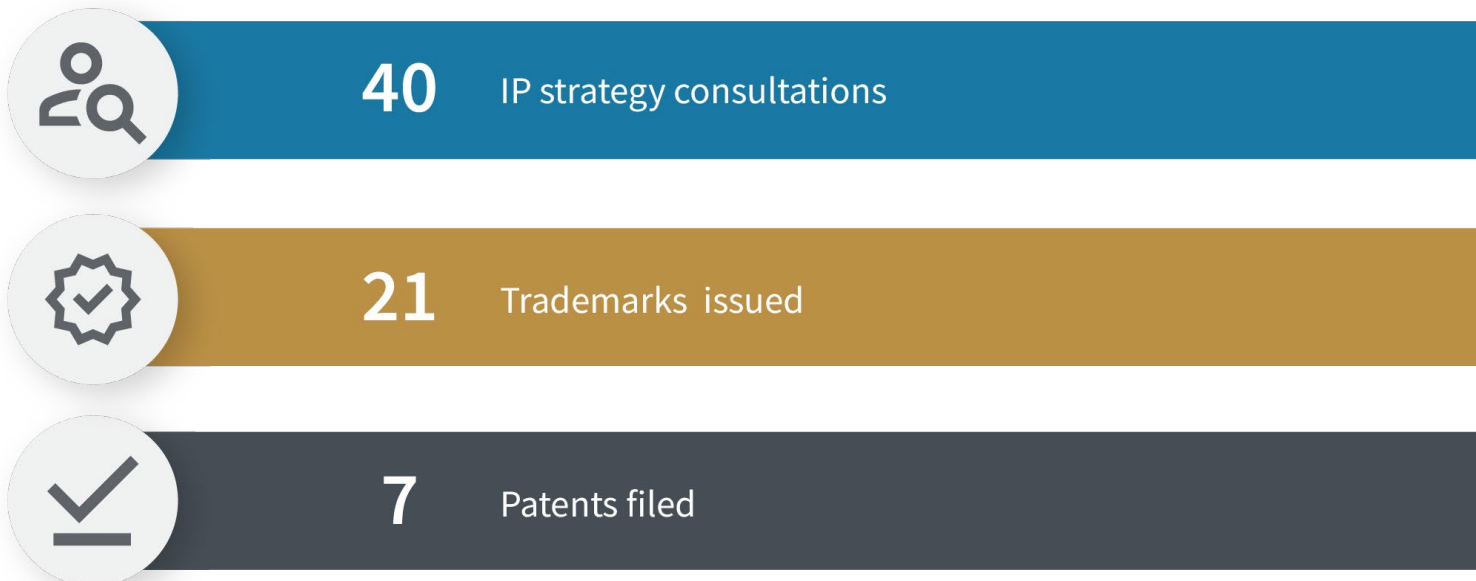
Belco Doors created an innovative swing door elevator interlock that prevents the elevator from moving when the doors are not properly closed. This work was performed in collaboration with Conestoga's SMART Centre. The Centre for Commercialization (C4C) identified patentable subject matter in the interlock design.



“C4C significantly enhanced our trajectory, enabling us to navigate the complexities of IP protection and patenting with confidence and clarity.”

Derek Moorse, Partner, VP,
Belco Doors

By the numbers



Conestoga Social Innovation Lab

The Conestoga Social Innovation Lab launched in 2023 and fosters social innovation research that meets the needs of people locally, regionally, and internationally.

The Lab's community-based approach to research is undertaken on behalf of and in support of communities, organizations, and change-makers. These partnerships focus on placemaking and developing structures that lead to actions

with a societal impact. The lab is structured to facilitate partnerships between Conestoga and local cooperatives, nonprofits, social impact organizations, and change-makers.



Affordable Housing Webinar Series

Dr. Anthony Piscitelli (PI)

In partnership with the Canadian Credit Union Association, the Conestoga Social Innovation Lab hosted a three-part webinar series on affordable housing, exploring the challenges facing the Canadian housing market, the role credit unions are playing in addressing the needs of their members, and what innovative financial products other organizations are creating to increase housing affordability.

The first session explored financialization and housing supply challenges in Canada, the second looked at innovative solutions developed by credit unions and the final session explored unique models outside of the credit union sector that are improving housing affordability for Canadians.

The webinar series provided the basis for further partnerships with the Canadian Credit Union Association and other credit union sector organizations like the Vancity Community Foundation.

We acknowledge the support of the Social Sciences and Humanities Research Council (SSHRC).



Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada



By the numbers.





Future research centres

The Centre for Scholarship of Teaching and Learning

In partnership with Teaching and Learning, the Centre for Scholarship of Teaching and Learning (CSoTL) aims to support and celebrate the scholarship of teaching and learning (SoTL) activities taking place within Conestoga’s programs, courses and learning spaces. CSoTL provides a wide array of resources, collaboration opportunities, and a

common connection point for faculty across Conestoga who are interested and engaging in SoTL activities. The centre is a place where Conestoga can share and celebrate research that explores innovative and creative teaching and learning practices, with a common goal of enhancing student learning and the overall student experience.

Student spotlights



Sarthi Sodhi
Research assistant

Program: Strategic Global Business Management

“Working with Conestoga and Professor Tanya Staples on the research project exploring the inequalities faced by women in the financial sector was an incredibly enlightening journey. The research process in itself was a transformative experience, pushing me and my team to delve deeper, think critically, and uncover the hidden challenges faced by women professionals in their professional and personal journeys.

As an international student, this research position provided me with invaluable insights on the workings of a Canadian research institution and gave me great exposure, something I will always be thankful for.”



Shefali Arora
Research assistant

Program: Strategic Marketing Communications

“Thank you for allowing me to express my excitement about the XR Mobile Learning Lab project, particularly combining the social impact framework and multi-stakeholder co-op models. Implementing an immersive storytelling approach in simulations for skills trades would be transformative for northern and remote communities.

Connecting and upskilling communities with XR technology, software, and professional development offers a groundbreaking way to access vocational training opportunities. Overall, I believe this project can significantly improve access to education, training, and career advancement in significantly less developed areas. I feel grateful to be a part of a team taking a groundbreaking initiative.”



David Yang
Research assistant

Program: Bachelor of Business Administration (Honours) - International Business Management

“As a research student, I’ve been actively involved in preparing process flowcharts for a yogurt manufacturer’s digital transformation initiative. My work includes analyzing their current production processes and researching industry 5.0 technologies to enhance efficiency and productivity. This experience has provided valuable insights into bridging the gap between theory and practical implementation in small-scale manufacturing settings.”

Thank you to our funders.

We are grateful for the support and contributions from our funding partners. Your generous funding has made it possible for us to continue our research, innovation and entrepreneurship initiatives and pursue our mission to provide high-quality research and innovative entrepreneurship programming that

provides students the experiences they need to meet the challenges of tomorrow. Your support has allowed us to attract and retain top talent, provide state-of-the-art facilities and equipment, and offer a dynamic and collaborative environment that fosters creativity and innovation.

Your partnership has been instrumental in our success and has helped us achieve numerous milestones that would not have been possible without your assistance.

Contact

To learn more about Research, Innovation and Entrepreneurship at Conestoga:

visit research.conestogac.on.ca

to explore our research initiatives, projects, research centres, and learn how to get started as a partner with Research, Innovation & Entrepreneurship.



RESEARCH, INNOVATION
& ENTREPRENEURSHIP



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