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Research & Innovation in Action

2023–2024 ANNUAL IMPACT REPORT

A message from the VP, Research and Innovation

At the University of Windsor, research, scholarship, creative activity, and innovation are grounded in curiosity, connection, and real-world impact. The stories in this report reflect how our researchers and students engage with complex questions across health, science, technology, culture, engineering, humanities, business, and education in unexpected and interdisciplinary ways, rooted in the following core priorities: Grow & Nurture Research Identity; Support People Across Career Stages; Strengthen Inclusive Excellence; Forge Community & Industry Partnerships; Innovation-Entrepreneurship Ecosystem; Communicate & Celebrate Excellence & Impact; and Strengthen Capacity, Infrastructure & Accountability.

Their work improves our understanding of the world we live in while also creating new ways to share knowledge through art, media, and digital systems. Our researchers respond to both emerging challenges and everyday lived experiences, pairing advanced technologies with human-centred application.

Guided by collaboration and community partnership, UWindsor's research extends beyond our campus to inform practice, support wellbeing, and strengthen understanding across diverse fields. Together, these efforts reflect our commitment to discovery with purpose and to shaping a more responsive and equitable future.

Respectfully,
Shanthi Johnson, PhD, RD, FDC, FACSM, FGSA
Vice-President, Research and Innovation



**New research proposals
submitted – 560**

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An accessible community a decade in the making

When you struggle with communication, as people with aphasia often do, life can be challenging.

The Town of Amherstburg is poised to become the world's first aphasia-friendly community, thanks to the work of **Dr. Lori Buchanan** and the team at **UWindsor's Cognitive Neuroscience Lab** in the **Faculty of Arts, Humanities, and Social Sciences**.

Municipal employees in Amherstburg, including clerks, parks staff, and firefighters, have taken training developed by Buchanan's research team, certifying them as aphasia-friendly. Training is now being extended to local businesses and services who will be included in an aphasia-friendly directory hosted by the National Heart and Stroke Foundation.

Aphasia Friendly Canada started small more than ten years ago. Buchanan and research assistant **Julia Borsatto**, worked with people living with aphasia to understand their day-to-day lives and then asked businesses and community organizations what they knew about the condition. Armed with good data, they piloted a training program for local small businesses. They surveyed participants before and after taking the training to see what they learned, then tweaked the program for maximum effectiveness. With support from the **Social Sciences and Humanities Research Council's Partnership Grant** program, the pilot grew, adding a free online training module, attracting the notice of officials in Amherstburg.

"It was very gratifying to have an entire town make this effort," says Buchanan. "Amherstburg will be Canada's first aphasia-friendly town, but we are confident it will not be the last. Being aphasia-friendly also makes your community more accessible to newcomers who may experience language barriers, so in Canada's most diverse region, there's an urgent need."

Buchanan has already presented the program to students at **UWindsor's Faculty of Nursing** and



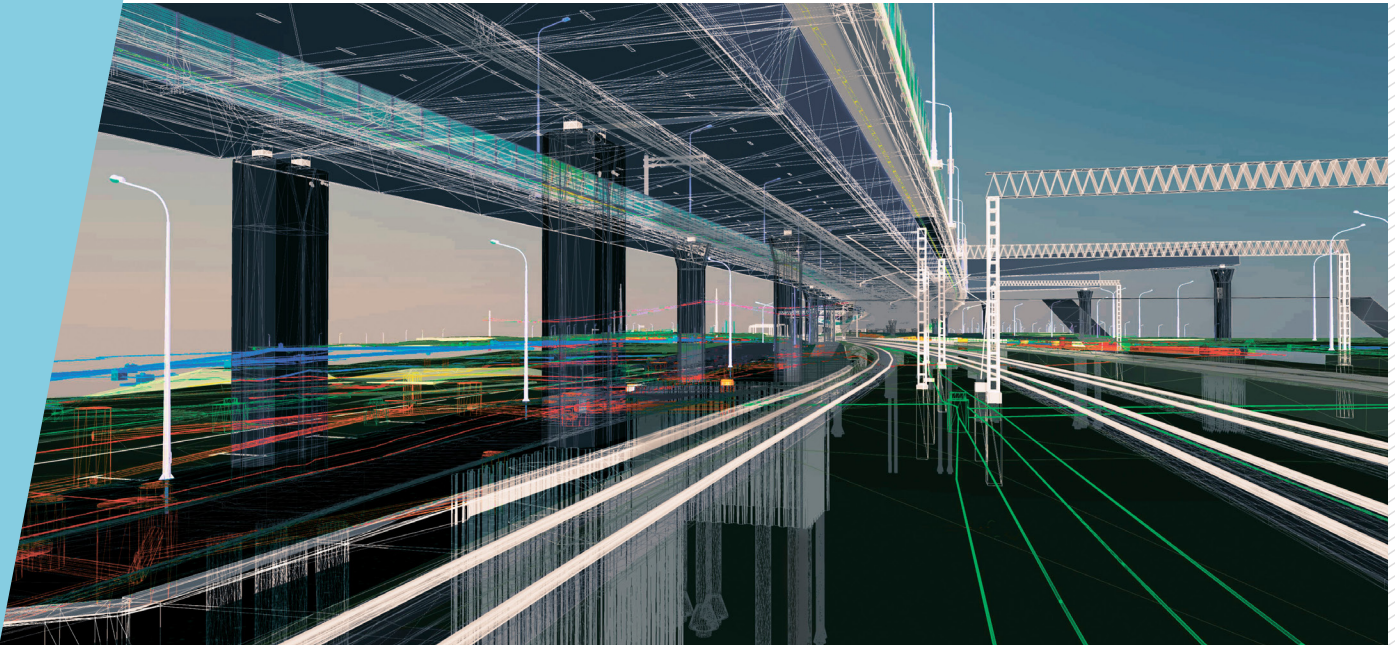
Dr. Lori Buchanan

emergency medical services students at St. Clair College. The team is actively involved in raising awareness at community events such as Relay for Life and by promoting the certification process through booths and tables on campus.

"It takes only thirty minutes to become aphasia-friendly and anyone can do it," says Borsatto, who has completed her PhD and remains active in the campaign. "Accessible communications are crucial to implementing the standards of the *Accessibility for Ontarians with Disabilities Act*, and making shopping, services, and communities more welcoming."

Business and individuals interested in becoming aphasia-friendly can access the online module, **aphasiafriendlycanada.ca/services** available in more than thirty languages.

Digital twinning of infrastructure



Contemporary infrastructure planning and management involves many interconnected factors, which has made it an increasingly data-intensive process. Transportation, water and power systems must align with growth, remain cost-effective for taxpayers, ensure public safety, and be continuously maintained. Managing when and how infrastructure is repaired is a truly unending task. How can city planners estimate when to make important repairs, and where infrastructure will be most stressed? Enter the digital twin.

More than just a simple model of real-world infrastructure, a digital twin replicates an asset's physical and functional traits while enabling real-time, two-way data exchange through integrated sensors, analytics, and simulations to optimize operations of bridges, water treatment plants, and other critical infrastructure, says **Dr. Rajeev Ruparathna**. The data gathered and incorporated into a digital twin can provide early warning of issues and help engineers identify stress points. A recent publication by Ruparathna and research associate **Tharindu C. Dodanwala** examined the use of digital twins in Canada's water infrastructure and proposed a new framework to assess system health.

"Computing capabilities are increasing day by day," says Ruparathna, "but without industry standards, insufficient data are available in some

cases, while in others, the wrong data are collected, or so much data is collected that the digital twin cannot work effectively." Collecting the right data at the right time using the right sensors and instruments as proposed by the new framework can help future-proof water infrastructure systems. "For city planners, good data leads to good decision making," he adds, saying the framework has a lot to offer for the smart cities of the future. "Making the right choices will ensure a high level of service is maintained for people in the community as well as reduce the cost to the taxpayer for maintaining those services."

The water infrastructure framework for digital twins proposed by Ruparathna and Dodanwala has potential applications in Canada and beyond. "Early-warning systems enabled by continuous monitoring can help detect infrastructure issues before they escalate, potentially preventing boil-water advisories and ensuring uninterrupted access to safe drinking water.," Ruparathna notes. "As infrastructure ages, we can leverage data to prevent water crises." He envisions digital twins integrated into real-world infrastructure but notes that success depends on strong foundations: robust frameworks, reliable data systems, and strategic planning for evolving sensor technologies. Laying this groundwork now will enable infrastructure resilience through digitalization.

Study offers relief for Parkinson's patients

A Parkinson's diagnosis can be devastating, but the preliminary results of a study by **Dr. Anthony Bain** in the **Faculty of Human Kinetics** offers patients new hope.

Bain's study, funded by the **Parkinson Society of Southwestern Ontario** and the **WE-Spark Health Institute**, explores the potential of a novel laser therapy device to improve blood flow and alleviate symptoms in Parkinson's patients. Though only three participants have completed the full trial so far, the early results are promising.

Bain's project is built on an intensive protocol: participants continue with their regular medication regimens but add the laser therapy for a four-week period—three sessions in the first week, two in the second, and one per week thereafter. The treatment itself is non-invasive: a participant wears a head-mounted apparatus, developed in partnership with Theralase Technologies, that delivers targeted laser pulses for about five minutes. The therapy stimulates cellular activity at the mitochondrial level which is believed to boost brain energy and improve blood flow, a critical issue in alleviating Parkinson's.

Despite the small sample size, the results were striking. In clinical measures, two out of three participants experienced notable improvements in the Montreal Cognitive Assessment, and all three performed faster on a pegboard task used to measure hand-eye coordination and tremor control. When the team tested blood flow in the brain during cognitive tasks like word or visual puzzles, they saw an improvement of roughly 10 per cent compared to their pre-therapy baseline values.

Gains in endurance were also striking. One participant, who could not stand unaided for more than three minutes before treatment, was able to remain standing for five minutes after completing the therapy. This improvement, linked to better blood flow during cardiovascular stress, may offer real progress in managing the postural instability that is common in Parkinson's patients.

Still, Bain is cautious. "This is early, exploratory work," he emphasizes. "But we are seeing results that last over the course of weeks and even months. We need to work with more participants to get a better picture of what's happening in the brain and how that impacts quality of life."

Bain, with professors **Sean Horton**, **Paula van Wyk**, and **Chad Sutherland**, and chiropractor **Luigi Albano** of Walkerville Chiropractic, are hoping to recruit more participants. "Living with Parkinson's is debilitating, but incremental improvements through therapies like this can significantly improve patient's lives," Bain says.

"One of our participants, who had given up the guitar due to motor difficulties, found himself able to play chords again. If we can give people back hobbies that bring them joy, that's reason enough to keep working."

A laser therapy device donated by Theralase Technologies is being used by Dr. Anthony Bain to launch a clinical study on Parkinson's disease.



Book offers a voice of experience in guiding new clinical psychologists

Newly qualified psychologists leave school with extensive theoretical knowledge gleaned from years of study in the latest techniques and ideas about the human mind, but preparing for the real-world experience of clinical practice is much more challenging. A new book by **Dr. A. Dana Ménard** in the **Faculty of Arts, Humanities, and Social Sciences** looks to change that by sharing her experiences as a clinical psychologist dealing with the messy, human side of delivering mental health care.

Through a chronology of surprises, mistakes, and relationships built, *Lessons from an Early Career Therapist: Managing Mistakes, Missteps, and other Minor Disasters* is Ménard's experience on navigating the challenges of training programs and the tumultuous first years of establishing a clinical practice, all while finding her voice and identity as a therapist. "Students are taught an enormous volume of theory and technique through their undergrad and graduate years," she reflects. "It's tempting to think that applying the technique exactly as you've learned it will automatically lead to success, but that plan doesn't usually survive its first encounter with reality."

Dr. A. Dana Ménard



One of Ménard's core insights stems from longstanding research: change in therapy is driven not by theory alone, but by the therapeutic relationship. While graduate programs often prioritize models and techniques, Ménard's experience, as chronicled in the book, has influenced

her teaching, which incorporates relational strategies, like how to sit in silence or be fully present with a client. This shift in focus can help students overcome the perfectionism that can hinder genuine connection.

The book also tackles self-care—not as a buzzword, but as an essential, often-neglected foundation of clinical practice. Ménard critiques how training programs tell young therapists to care for themselves without offering meaningful tools, resources, or boundaries to do so. Her chapter on self-care redefines it as healthcare, urging a cultural

shift in how academic and clinical settings support their trainees.

Ultimately, the book is more than a guide. It is a testament to what Ménard wishes she'd known, and a bridge between academic preparation and the sometimes strange work of real human connection. Through mentorship stories, boundary-setting lessons, and, critically, humour, Ménard's work invites clinicians to lead with empathy—for clients, for others, and for themselves. Levity, she says, is an underappreciated strategy for healing.

**New research grants
awarded – 368**

Sustainable language revitalization: a call to action for researchers

With millions invested in Indigenous language revitalization in Canada, why are so few programs truly working?

Dr. Ashley Glassburn in the **Faculty of Arts, Humanities, and Social Sciences** is guiding a student-driven team supported by a **SSHRC Knowledge Synthesis Grant** to tackle this difficult question.

Their review of more than 4,000 academic articles revealed a striking gap; only about 50 focused on Indigenous people relearning their own languages. Instead, most literature came from non-Indigenous researchers proposing tools or frameworks without evidence of implementation or community impact.

Dr. Ashley Glassburn (back) and research team members Bennett McLeod (left), Alicia Campbell, and Bella Hebert call for systemic change in funding of Indigenous language programming.



“There’s a disconnect between what’s being published and what’s actually helping,” Glassburn explains. “We’re seeing a lot of solutions on paper, but not in practice.”

To bring greater visibility to the voices that are making a difference, the team is building a public website—**reclaimingourlanguages.com**—to showcase meaningful research, policy recommendations, and the limited number of articles that do center Indigenous-led language learning. The aim is to direct attention on language revitalization scholarship that focuses on the experiences and needs of Indigenous people learning to speak their ancestral language.

Glassburn’s research highlights that most publicly funded initiatives remain stuck at the pilot stage. Many innovative educational and technological approaches to Indigenous language revitalization are tested on university students with no practical plan for long-term use in community settings. True language reclamation means being able to speak and be understood in community, a significantly more resource-intensive goal, Glassburn says. Even promising tools and research often fall through the cracks due to short funding cycles and lack of follow-through. “We’re pouring millions into revitalization, but almost none of it goes to what Indigenous educators and speakers say they need,” Glassburn says. “That’s a form of colonial theft—taking up space, funding, and narrative control without delivering real support.”

Glassburn’s work also examines the structural problems baked into educational and funding systems. Many Indigenous language classes use standard school curricula and assessments, which centre colonial models of success and sideline cultural relevance. Immersion programs, where they exist, are often tied to formal institutions like universities or rehab facilities, excluding the broader community. Language exposure programs—such as one-off language games like the one she and her team hosted at Art Windsor-Essex—get attention and funding, but not longevity. More robust support is needed to build pathways between language exposure programs and language classes that are more likely to produce proficiency and lifelong language use.

The project calls for not only better funding models, but for systemic change in who gets published and heard. “Indigenous language speakers and educators are rarely the ones whose work appears in journals. If we’re serious about revitalization, we need to shift the entire structure of how this work is funded, implemented, and recognized.” Until then, Indigenous languages remain at risk—surrounded by noise and still fighting to be heard.

Researcher provides expert testimony on automotive cybersecurity

You're standing in the grocery store parking lot, frozen peas thawing in your cart, staring at the empty spot where you had parked your car. Your heart sinks as you realize it's gone.

With one stolen every five minutes, car theft affects more than 100,000 vehicle owners per year, according to the Insurance Bureau of Canada. But UWindsor researchers at the **SHIELD Automotive Cybersecurity Centre of Excellence** are on the case, working to make sure lawmakers understand the issue.

Faculty of Engineering professor and SHIELD Director Dr. Mitra Mirhassani testified before the House of Commons Standing Committee on Public Safety and National Security on the pressing issue of car theft in Canada, outlining opportunities and challenges facing automotive cybersecurity. She was one of a panel of experts, including automakers, insurers, port authorities, and consumer advocates, helping shape new regulations.

"As the technology in our cars advances, vulnerabilities increase too," says Mirhassani, who describes research and development efforts as an arms race between automakers and criminals.

"Automakers must ensure new security measures they implement do not make it more difficult to drive, and comply with regulations,

Dr. Mitra Mirhassani



but thieves need focus only on one thing: bypassing security measures and driving away."

Keeping up is an enormous challenge for security experts and manufacturers, as well as law enforcement officials. Mirhassani also spoke at the 2024 Police Chiefs of Canada summit and reviewed policy and standards proposals from Innovation, Science and Economic Development Canada with an eye to connecting highly technical research to accessible forms of public understanding. She identifies several pressing issues: consumer desires, cost of new systems, user experience, and the time it takes for new technologies to reach the market.

Sophisticated anti-theft measures may not be widely implemented for many reasons, but part of SHIELD's mandate is to be involved in the research and development process to address these issues. Through a partnership with Invest WindsorEssex, SHIELD is working directly with original equipment manufacturers in the region to test and implement innovative designs.

A view on the ethical use of new technologies is essential, in Mirhassani's view. "It's not just car thieves we must protect against, but breaches of driver data security by malicious actors, as well as uses of data by automakers themselves that drivers are not aware of and may not consent to if they were." She anticipates these issues affecting not just individual drivers but also public transit users and transit infrastructure in the future.

"Working across sectors with law enforcement, manufacturing, and communities is essential to reducing theft, but also protecting the data and security of Canadians."

The Once and Future City: Exploring Windsor Through Art, Policy, and Community

At first glance, the pairing of art collections and legal scholarship might seem unlikely, but a collaboration between the **Art Windsor-Essex (AWE)** and **UWindsor Law professors Anneke Smit and Shanthi Senthe** became a thoughtful meditation of how cities are remembered, built, and imagined—and who gets to tell those stories.

The partnership yielded *The Once and Future City* (November 14, 2023 - June 25, 2024), an exhibit that was meeting place for understanding regional identity.

The seeds of the exhibit were planted when AWE Executive Director Jennifer Matotek began looking for new ways to align the gallery's programming with its strategic plan, which emphasized deeper engagement with the community and more inclusive narratives around its collection. With more

than 4,000 works, AWE's collection is extensive, but AWE had heard a common refrain during its consultation process: people wanted to see themselves in their city's art gallery, and not just through traditional art history practices. That meant drawing in other ways of understanding Windsor-Essex through history, policy, and experiences.

Matotek reached out to many in the community who were interested in collaboration, including **Centre for Cities (C4C)**, a research group at Windsor Law headed by Dr. Smit. The connection grew organically in a way that came to underscore the exhibit's central themes: collaboration, imperfection, and the ongoing dialogue between place, policy, borders, and people.

The Once and Future City centers urban landscapes, with a focus on the Windsor-Detroit region,

Dr. Shanthi Senthe, left, moderated the roundtable which included poet Teajai Travis, former executive director of Windsor artist-run centre Artcite Inc. and the City of Windsor's Multicultural Community Storyteller 2022 to 2024; Alejandro Tamayo, artist and executive director of the Arts Council Windsor & Region; Kim Theus, founder of Detroit's Canfield Consortium. Co-curator Dr. Anneke Smit is pictured right.



using only works from AWE's own collection—a deliberate decision, though not without challenges. The collection's gaps became as revealing as its contents. "It doesn't reflect a full picture of Windsor," says AWE's Head of Exhibitions and Collections, Emily McKibbon. "But sitting with that imperfection was part of the process. It's where some of the richest conversations happened."

Those conversations extended well beyond gallery walls. The exhibition included community dialogue events, such as *Who Pays? Arts Investment in the Rustbelt*, a cross-border round table focused on legal and financial issues faced by artists and moderated by co-curator Dr. Senthe, who also directs the **Transnational Arts and Entertainment Law Clinic** at Windsor Law.

"We wanted to welcome the community and be in conversation with them about policy and identity," says Senthe. Other events included fellow UWindsor faculty members as well as numerous community leaders.

The Once and Future City is a model for how institutions can rethink their roles in communities, embrace imperfection, and create space for community-led ways of knowing.

"It stretched us in the best way," says Smit. "It was an opportunity to counter the idea of universities and galleries as elitist. It taught us how public-facing work can make knowledge pragmatic and visible and spark healthy dialogue."

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**Research revenue –
\$41,881,031**

Excellence in cancer care: centering the experience of young patients

A cancer diagnosis can be especially devastating for young people. Beyond the impact on their wellbeing and lives, they must navigate a healthcare system split between pediatric and adult care, where neither is fully equipped to meet their needs. **Dr. Joanne Tay** in the **Faculty of Nursing** studies the lived experiences of patients aged 15–35 and their families navigating cancer care in regions underserved by specialized services.

One key finding from her work is the need to rethink decision-making structures so young people are not just heard but actively involved in shaping their care. “In pediatric care, parents often act as proxies, particularly when children are very young,” Tay explains. “But when it comes to serious or terminal illnesses, especially in adolescents and young adults, we need to recognize their autonomy and involve them in care planning.”

This age group is often overlooked in oncology and palliative services. Tay first observed this gap while practicing as a nurse in Toronto, noting it is even more pronounced in smaller communities. Families are often referred to larger cities for treatment, then return home to providers who may lack specialized expertise. While being closer to home reduces emotional, financial, and physical strain, families are frequently left navigating care that is not age-appropriate or responsive.

Tay’s ongoing analysis highlights gaps in awareness and preparedness among local providers. “South of London, system and policy gaps remain,” she says. “My research aims to address this by offering real-world insights—my next step is to co-develop innovative and equitable solutions with communities and youth to improve cancer care access for young people.”

A promising direction in Tay’s work is expanding oncology care into the home—a model already used in parts of Toronto—allowing patients to receive high-quality care without repeated travel. The challenge is adapting these models for smaller or rural communities.



Dr. Joanne Tay

At the heart of Tay’s vision is collaboration with patients themselves.

“Caregivers often play a leading role in voicing concerns and needs,” she says. “But young people facing cancer need platforms to advocate for their needs. We need more frontline voices, including young patients, informing how care should be designed and delivered.”

As she concludes the first phase of her research, Tay is building partnerships with community organizations to amplify youth voices and translate findings into action. Her goal is clear: ensuring young people living with cancer, regardless of geography, have access to timely, compassionate, and responsive care.

Sharing data today to educate tomorrow's nurses

What began in 2009 as a modest collaboration between nursing educators and hospital partners has grown into a groundbreaking model for patient safety. Now, the **Faculty of Nursing** is using this to help future nurses learn from mistakes before they happen.

As medication administration grows more complex and hospitals moved from paper-based records to electronic systems, **Professors Natalie Bownes** and **Susan Dennison** noticed something was missing. Responsible for placing student nurses in local hospitals, they were no longer receiving consistent data about medication incidents involving students. Without that insight, opportunities to strengthen safety practices were being lost.

UWindsor nursing students log practice time on the clinical procedures they'll encounter in placements.



The response was a long-term initiative that introduced a formal reporting process for student nurses in clinical placements. Students are expected to report three types of incidents: their own errors, near misses, and mistakes made by others that they discover. The approach is grounded in a deliberately fostered culture of safety—one that prioritizes learning and system improvement over blame.

Reports are reviewed by Bownes and Dennison, with serious concerns addressed immediately. Each semester, they meet with the pharmacy manager from their largest clinical placement site to review trends and discuss outcomes. This ongoing feedback loop allows students to see how their reporting contributes directly to safer practices at the bedside.

The work is reinforced through both Faculty-level and regional medication safety committees that meet to examine emerging patterns, share insights, and shape targeted educational responses. “What sets this work apart nationally is its analytical focus,” says Dennison. “Most nursing schools are tracking basic medication error data, but our literature review suggests they typically exclude near misses or errors caught by students and consequently miss an opportunity to improve.” By treating these reports as early warning signals, the program can identify system-level issues, such as confusing packaging or dosing, that can be corrected before errors are repeated.

Interest in the model is growing beyond Windsor. When Michigan State reached out in 2023 to learn from the initiative, it confirmed what faculty had suspected: few programs approach medication safety with this level of collaboration. Bownes emphasizes that partnership is the foundation. “What really matters is the deeply embedded relationship between the UWindsor Faculty of Nursing and the clinical settings where our students complete their practica,” she says. “Without their willingness to be full partners, the work would not be possible. We share our top priority, which is excellence in patient care. Everything else flows from that.”

Dennison adds that at a time when acute care environments are stretched and medication administration remains one of the highest-risk tasks for nursing students, this reporting model offers a powerful tool not only to reduce harm, but to embed a culture of trust, reflection, and continuous learning. “It really matters to our nursing students that their reports can rapidly reshape care excellence. They see their impact immediately and that builds their passion for the work.”

There's something in the water: managing freshwater health in Canada with eDNA

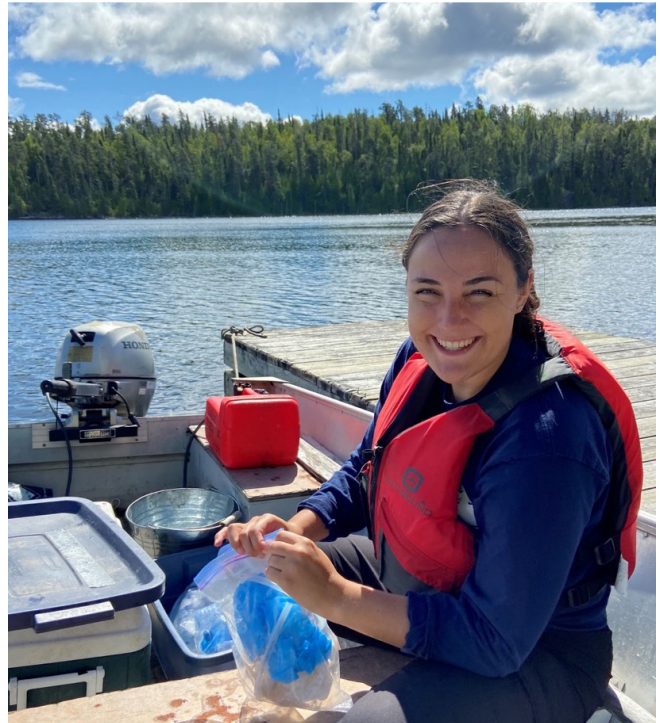
Fishing boats are a familiar sight along the docks of Essex County, piloted by both recreational anglers and commercial operators. Great Lakes fisheries are a vital food source and economic driver for the region, but their health is under constant threat from human-caused stressors, says **Dr. Daniel Heath, Professor Emeritus** in the **Faculty of Science** and **Operational Director of GEN-FISH**, a **Genome Canada-funded project** studying fish population health in partnership with agencies and universities across Canada.

Healthy fish signal healthy waters. When fish show disease, food stress, or metabolic failure, it often reflects broader problems in lakes and rivers. Until recently, assessing fish health required catching and autopsying specimens. Heath and the GEN-FISH team have transformed this process by applying gene expression technology to make assessments faster, easier, and more accurate.

“With a small tissue sample, we can quickly learn a lot about the fish and its environment,” Heath explains. “GEN-FISH developed gene transcription markers to assess aspects of health from food networks to pollution that we can examine with a non-invasive swab from a living fish that is released back into its environment.” The resulting data helps fisheries respond quickly to emerging concerns by assessing conditions in hatcheries, lakes, and rivers.

Fish population diversity is another key indicator of ecosystem health, but surveying Canada's roughly 220 freshwater species across countless waterways is a challenge. GEN-FISH's environmental DNA (eDNA) research has made it possible to identify nearly all freshwater fish species using DNA extracted from water samples, easing the burden on conservationists and accelerating environmental action.

Heath notes that eDNA technology also has potential applications in soil and air sampling, though ethical considerations arise because human DNA can be detected. He describes GEN-FISH as foundational science. “Our job has been to develop



Research assistant Claire Risbey collects lake samples. Image courtesy of GEN-FISH team member Dr. Margaret Docker, University of Manitoba.

toolkits, and these are now in the hands of partners such as provincial infrastructure managers, Indigenous communities, and conservation groups. They're putting our tools to use in ways we hadn't even imagined as they responsively manage the health of their waterways.” Social scientists, he adds, have played a key role in aligning the tools with community needs.

For anglers on the Detroit River or commercial crews docking perch in Kingsville, this work is largely unseen. But when fish thrive, the region thrives with them—and the tools developed by GEN-FISH help make that possible.



Dr. Dan Xiao working with a student to demonstrate an MRI prototype.

FORGE COMMUNITY & INDUSTRY PARTNERSHIPS

Imaging under the soil: portable MRI offers new solutions for agriculture

When most people think of magnetic resonance imaging (MRI), they picture a hospital scanner used to image patients. But MRI technology has many lesser-known applications, says **Faculty of Science** researcher **Dr. Dan Xiao**, who is exploring how MRI could be adapted for use in agriculture.

“MRI can give us a wealth of information about growing crops, from water flow to stress responses,” says Xiao, “but for obvious reasons, farmers cannot bring a crop to a full-sized MRI machine for scanning. The question is, how can scientists bring MRI technology to the farm instead?” She sees potential uses in greenhouses, fields, and livestock barns.

Making MRI portable requires trade-offs. Hospital-based scanners rely on cryogen-cooled superconducting magnets that weigh several tons and require specialized facilities. Smaller, permanent magnets can produce portable scanners light enough to fit in a backpack and are less susceptible to environmental interference, but they generate weaker signals and lower-

resolution images. Selecting the right configuration for each application, Xiao says, is critical.

To advance portable MRI design, Xiao attended ezyMRI NerdFest in Singapore, where seventy international researchers collaborated to build a portable MRI scanner from scratch. After a day of lectures and discussion, teams spent three days constructing and testing the system. Xiao worked with the spectrometer group on signal transmission and reception. “We found that, while we could not build the entire spectrometer from scratch, assembling it from basic, readily available parts was achievable with the short time frame.” The group ultimately produced a simple 2D image.

The proof of concept highlighted how compact scanners could be adapted across fields, including medicine. Xiao, however, remains focused on agriculture. “Taking a machine directly to your crops to diagnose problems at the root level allows for rapid responses,” she says. “I want to place that technology directly into the hands of farmers.”

A responsive pedagogy for today's media

How we understand the world is increasingly shaped by financialized, online environments. For young people raised with smartphones and social media, information overload and misinformation are urgent concerns, prompting educators to reconsider the role schools play in helping students navigate their digital lives. Supported by a **SSHRC-funded Insight Grant**, **Dr. Lana Parker** in the **Faculty of Education** is exploring how education can better respond to this evolving online information “market.”

Parker's research examines how Grade 12 students in three major Canadian cities experience online spaces, alongside teachers' understanding of students' digital lives. Her team surveyed 108 students and conducted focus groups with 48 participants. Students identified benefits such as expanded access to information and perspectives, finding community, and developing identity, but also described alienation, stress, overstimulation, difficulty distinguishing truth from falsehood, and political polarization.

While students viewed themselves as highly competent technology users, they struggled with trust and interpreting complex issues. Some believed parents or younger siblings were more vulnerable to misinformation, despite acknowledging limited personal strategies for evaluating credibility. “Many students expressed flawed strategies for determining what was true and what wasn't, like reading comment sections under videos.” Although participants had a basic sense of “the algorithm,” they could not clearly explain the profit structures driving social media platforms.

Interviews with eight Grade 12 teachers revealed a desire to address online complexity in classrooms, but highlighted gaps in teacher education and K–12 curriculum. “Media literacy models are outdated,” Parker argues. “They use a framework of print and television media that is no longer relevant to students.” She hopes the research will inform curriculum revisions and is engaging with school boards to develop resources and train educators.

A central finding is the need for schools to create meaningful opportunities for students to be offline together. “It really matters for education to create real-life time and space for students to be together, speak together, and do things together, as a

counterpoint to the ‘online-ness’ they experience in the rest of their lives.” Parker cautions against viewing classroom cell phone bans as a solution and argues that replacing libraries, the arts, outdoor learning, and experiential education with online portals undermines students' well-being. “If we prune away those rich real-life conditions, we'll drive students further and further online in ways that will hurt them.” Sustained investment in public education, she says, is essential.

Dr. Lana Parker



The workplace culture of quiet quitting

Quiet quitting is a hot topic in both online and traditional media, capturing the interest of employees and managers alike; post-COVID, people are evaluating what matters to them. But there is not really a consistent definition of it, making it hard to understand what we mean when we talk about it. In the **Odette School of Business**, **Dr. Al-Karim Samnani** is leading research to understand the phenomenon.

“We started by examining the literature that was already out there about quiet quitting,” says Samnani. “What we found was very little consistency. For some, it was not taking on overtime or extra tasks, while for others, it was slowing down on assigned work or deprioritizing tasks. We found that people do not want to lose their jobs, but they do want to feel more control over their lives.”

Samnani’s research offers a broad definition, calling quiet quitting “a protest against the perceived negative well-being impacts of meeting work demands by strategically withdrawing from or avoiding selected tasks.”

Samnani then explored what can happen in an organization when an individual quiet quits.

Dr. Al-Karim Samnani



“Quiet quitting is often not only disapproved of by their managers, but also their peers.” Where a workplace had a supportive culture, he says, colleagues would first attempt to provide support for the quiet quitter, but this could morph into resentment, damaging team morale in the long-run.

So what can an organization do to prevent quiet quitting? Samnani offers several solutions. “No one is going to come out and announce they’ve decided to quiet quit,” he argues, so having a well-developed trust relationship between employees and managers is critical. If a manager sees an employee starting to check out, there may be an opportunity to show empathy and get to the root of a problem, but this is only effective if the employee trusts their manager. “Organizations must also recognize the extra work that employees do, and that includes updating job descriptions and adjusting pay scales as work gets more demanding. Time off, fully free from the demands of work, also helps employees maintain a sense of crucial work-life balance.”

Employees need to feel valued at work, Samnani says. When organizations focus on nothing but dollars and cents, they forget the social responsibilities they have to their employees and the communities in which they operate. Employees straining under the pressure may see quiet quitting as their only way of reclaiming control over their lives. “Quiet quitting does not happen in a vacuum,” he concludes. “Organizations can do so much to make their employees feel seen, trusted, engaged, and remunerated. The way a company treats its people is reflected in how well those people perform.”

“

We found that people do not want to lose their jobs, but they do want to feel more control over their lives.

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STRENGTHEN INCLUSIVE EXCELLENCE

Black Scholars Institute makes its mark on campus community and beyond

Community. Belonging. Support.

Dr. Festus Moasun says he has found both professional and personal affirmation at the **Black Scholars Institute (BSI)** at the University of Windsor.

“The research element of BSI cannot be over emphasized,” he says. “But to go into a meeting and have a number of people who are like me, whose journey is similar to mine, that is so important.”

Launched in September 2024, BSI has since celebrated its first-year anniversary, welcoming 13 faculty members through UWindsor’s Black Scholars Hiring Initiative. The institute now includes more than two dozen affiliated faculty across a wide range of disciplines.

For **BSI director Dr. Camisha Sibblis**, Moasun’s experience underscores the institute’s central mission: creating intentional space for Black scholars within academia.

“This first year has only solidified for me why a space like this is so essential. For too long, Black scholars have navigated academia feeling isolated, facing unique barriers, and often having our work overlooked or undervalued,” she says.

“The BSI is more than just a centre; it’s a community, a refuge, and a platform. It’s a place where Black voices are amplified, where our contributions are celebrated, and where we can support each other in thriving within—and challenging—the existing academic landscape. Building this community of care is paramount in creating an environment that fosters groundbreaking work.”

In support of its research, BSI has partnered with WE-Spark Health Institute to award four seed grants focused on research involving Black populations. Weekly programming includes Think Tank Thursdays, Just Write sessions, and Coffee and Convo, hosted with Leddy Library, alongside workshops, writing retreats, and speaker events. Moasun says mentorship sessions connecting early-career and senior scholars have been especially valuable.

BSI’s impact extends beyond campus through partnerships with the Windsor International Black



Audience members celebrate the official launch of the Black Scholars Institute on campus in September 2024 at the CAW Centre, University of Windsor.

Film Festival, plans to host the 2026 African Diaspora Youth Conference, and growing international research collaborations. Youth engagement is also a priority, with plans to co-host the Black Joy Black Excellence Student Symposium for local high school students in 2026.

“We’re helping to establish a pipeline of success for Black students that bridges gaps, addresses inequities, and creates pathways for future academic and community leaders,” Sibblis says.

Looking ahead, the institute plans to host a symposium, launch a journal, and expand student support through experiential learning opportunities, internships, and placements.

Science meets Art: Using creativity to communicate scientific knowledge



Students participate in the Creative Ecologies Masterclass in partnership with JEM Farms and FEMeeting, June 2024. Image courtesy of Cri Kosti.

On a spring afternoon, sunlight glints off Leamington greenhouses set among soybean and corn fields. A school bus arrives carrying undergraduate engineering and social science students, alongside delegates from the **“FEMeeting: Women in Art, Science and Technology”** conference, to engage with **SMArt Communications** - a University of Windsor project led by **Dr. Jaclyn Meloche** and a cross-disciplinary team of scientists and artists.

“SMArt Communications is all about how we translate scientific results to the general public through creative and artistic methods,” says Meloche, an artist and instructor in the **School of Creative Arts**. She brought together colleagues from the **Faculties of Arts, Humanities and Social Sciences (FAHSS), Engineering, and Science** to embed creative knowledge-translation practices into undergraduate coursework. Funded by a **Social Sciences and Humanities Research Council (SSHRC) Connection Grant**, the project breaks down disciplinary boundaries and introduces STEM students to research-creation. “We wanted to expose students to the idea that in order for research to have an impact, it needs to be accessible to the public—and expressing results through art is a great way to do that.”

The four-hour experience at the JEM Farms greenhouse complex was supported by the

Agriculture UWindsor Centre of Excellence

(AgUWin), which is expanding partnerships with local growers while connecting faculty and students to urgent research questions in a key regional industry. Students toured the research greenhouse, learned about ongoing projects, and participated in an artistic scavenger hunt inspired by the setting.

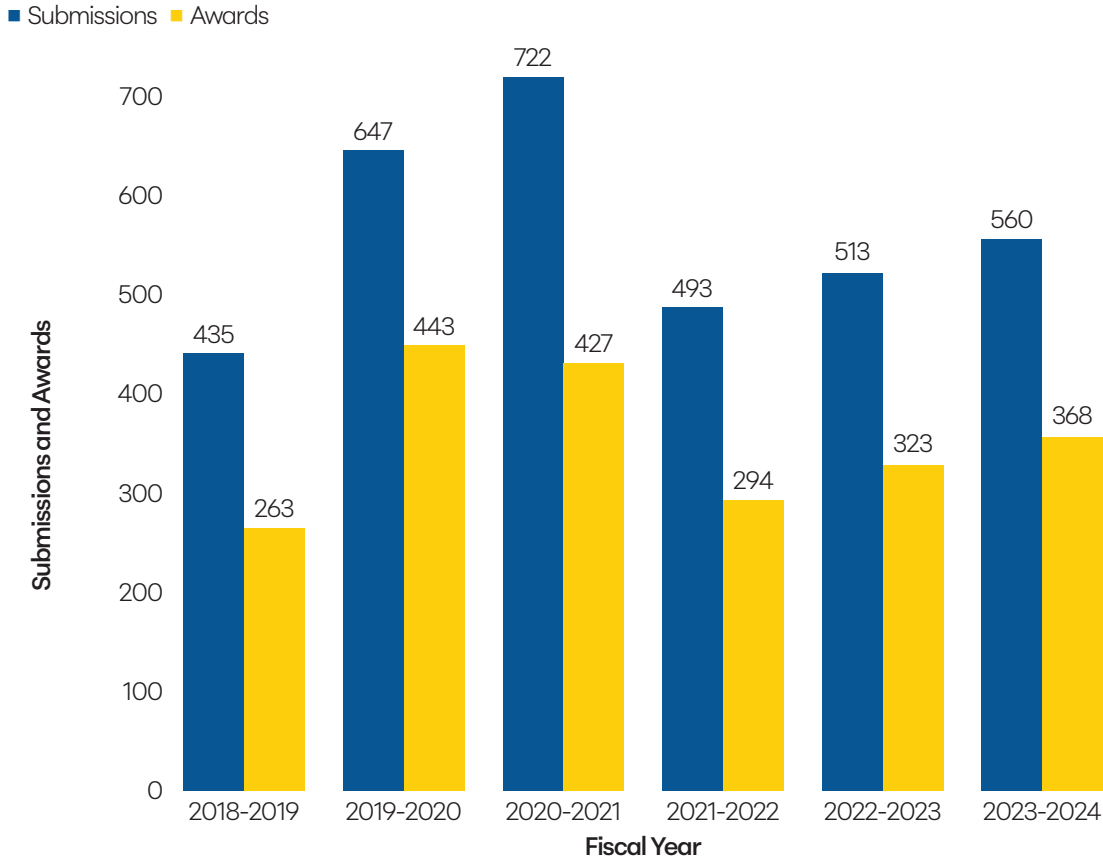
Additional workshops took students to the Windsor International Film Festival to explore documentaries as tools for communicating science, with filmmakers and faculty discussing their creative process. “It really deepened the experience for students to hear from the creative teams that took science they were passionate about and brought it to the public,” reflects Meloche.

Drama, creative writing, and visual art activities rounded out the program through visits to Art Windsor-Essex and Incubator Art Lab.

Taking participants off campus was central to the program’s success. Academic pressures can make it difficult for students to see how their education can impact communities. “Our goal was for students to see industry and the public interacting with science and understand the arts as a nexus for that interaction to occur,” says Meloche. “Thanks to a truly cross-disciplinary partnership between UWindsor Faculties and funding from SSHRC, we were able to give over 2000 students this experience.”

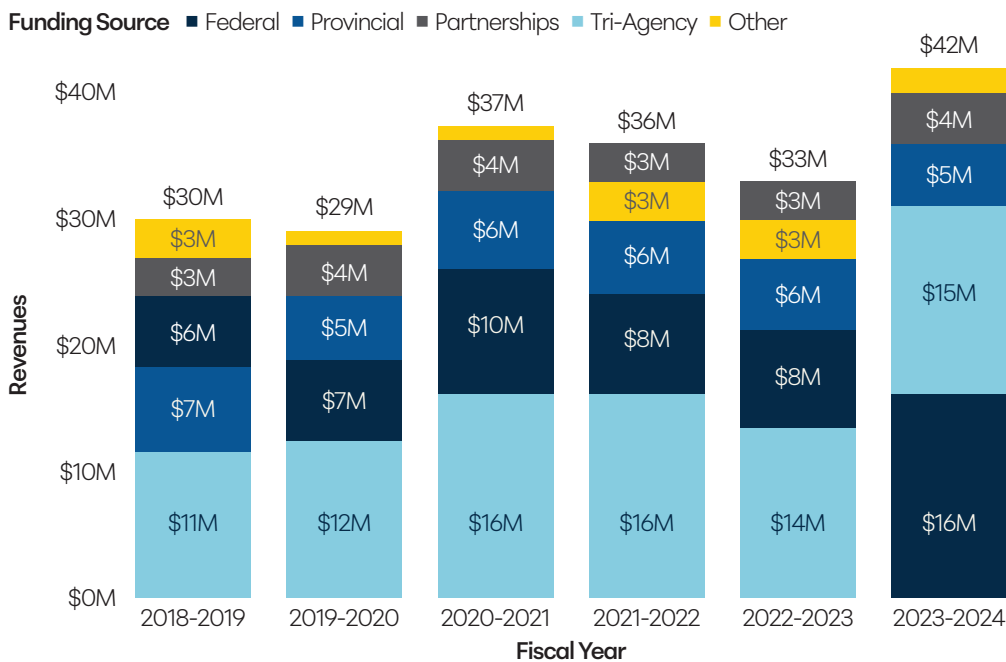
Submissions and Awards

By fiscal year



Revenues

By fiscal year, funding source





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