



Overview

The University of Windsor is home to a diverse, vibrant, and growing body of scholars recognized nationally and internationally for the importance and impact of contributions to the humanities; social, physical, environmental, and biological sciences; business; law and human dignity; nursing; engineering; education; and the creative arts. Every day, across our campus, our nation, and globally, University of Windsor faculty, students, and staff are making a difference. We are advancing our collective understanding of the world, maximizing benefit to society, and enhancing the quality of life today and tomorrow.

Given our historic research strengths and distinctive geographic location, the University of Windsor's dynamic research community is uniquely positioned to lead the way in addressing four Grand Challenges that are of paramount importance to our region, our nation, and our world. We aim to Safeguard Healthy Great Lakes; Foster Sustainable Industry; Understand and Optimize Borders; and Build Viable, Healthy, and Safe Communities. Collectively, these four Grand Challenges define us and inform the external world of our aspirations and goals.

Our Strategy

It is the University of Windsor's research mission to foster transformative research, innovation, and creative activity to meet our four Grand Challenges. The University of Windsor will achieve its mission through implementation of the following actions:

1. Promote research and innovation and pursue new opportunities to address the University of Windsor's Grand Challenges.
2. Attract, retain, and support the continued success of world-class scholars.
3. Develop the highly qualified personnel who will become next-generation scientists, engineers, artists, community leaders, and decision makers by providing exceptional experiential learning through hands-on research.
4. Foster and build on collaborative partnerships with key community, government and non-government organization, and industry stakeholders at the regional, provincial, national, and international levels.
5. Facilitate the cross-transfer and fertilization of knowledge, technology, expertise, and artistic creativity for the betterment of society.
6. Obtain, develop, and support state-of-the-art infrastructure.
7. Celebrate and encourage equity, diversity, and inclusion to promote awareness and understanding through hiring practices that reflect the University of Windsor's commitment, and by supporting research, scholarship, and creative activity that advances this objective for society as a whole.

Review and Monitoring

Review and progress monitoring of the University of Windsor's Strategic Research Plan is coordinated by a Strategic Research Plan Implementation Committee comprising new and established faculty from across our campus. The committee meets regularly to review the Strategic Research Plan to ensure that it remains relevant to the research, scholarship, and creative endeavours undertaken at the University of Windsor; to consider and recognize new and emerging areas of research strength; and to make adjustments to our research strategy to optimize growth and increase impact. The committee is also responsible for reviewing outcomes of research, scholarship, and creative activity and institutionally relevant and developed discipline specific metrics measuring success. We will communicate our success to the outside world by reporting our endeavours and outcomes of research, scholarship, and creative activity to the community.



Our Grand Challenges

Our Grand Challenges reflect the University of Windsor's research strengths and the importance of our location in Ontario. Not only do our Grand Challenges build on core research strengths, but they also reflect areas in which we can respond to the needs of our community and where we can have the greatest impact. They are areas in which we have assembled a significant body of researchers who are recognized for the excellence of their contributions to the field, and where the University of Windsor has made significant investment to ensure continued success. Our Grand Challenges are highly collaborative and multidisciplinary in nature and converge naturally in terms of significance and benefit to society. They are areas of research priority that are important to our community, government, and industrial stakeholders.

Safeguarding Healthy Great Lakes

The Laurentian Great Lakes hold nearly 85% of North America's freshwater. The dynamic ecosystem that relies on them supports more than 3,500 species of plants and animals, over 35 million people, and a multi-billion dollar economy. The continued viability of this critical natural resource is being threatened by increasing agricultural intensification, climate change, invasive species, and population growth. Situated on the Detroit River between Lake Erie and Lake Huron, the University of Windsor's close proximity to these vast bodies of freshwater has uniquely positioned us to take the lead in safeguarding the health of the Great Lakes through research that provides science-based solutions to the most pressing socio-ecological challenges facing the Great Lakes today.

At the University of Windsor, multidisciplinary researchers are advancing and communicating fundamental knowledge of Great Lakes science; understanding and helping to develop policies and regulations to safeguard the Great Lakes; advancing technologies to improve water quality and biota health; mitigating and adapting to the effects of natural and societal impacts on the Great Lakes; and promoting remediation efforts in the Great Lakes region and beyond. Our researchers are conducting cutting-edge research and experiments targeted at preserving and restoring biodiversity, cleaning up our waterways, mitigating the impact of invasive species, and restoring natural fish populations in the Great Lakes. Knowledge developed in support of the Healthy Great Lakes theme is highly translational and is supporting major research projects in other parts of Canada and internationally.

The University of Windsor's research in safeguarding healthy Great Lakes is further bolstered by strong and longstanding collaborative research partnerships that have been developed within academia and with the community, with government and non-government organizations, and with industry stakeholders at the local, regional, provincial, national, and international levels. These collaborative relationships have led to a number of highly successful, large-scale scientific research initiatives, which have contributed directly to the advancement of Great Lakes science and innovation, and the implementation of much-needed solutions to pivotal challenges to the sustained environmental efficacy of our aquatic freshwater resources.

Fostering Sustainable Industry

The University of Windsor's historic research excellence and the uniqueness of our geographic location have enabled us to cultivate a dynamic research culture, dedicated to fostering sustainable industry, in which both fundamental and industrial research flourish. The University of Windsor is located within a 100-kilometer radius of one of the highest concentrations of automotive and original equipment manufacturers and tier one suppliers in North America. Given our geographic proximity to top automotive manufacturers and suppliers, the University established itself early on as a leader in conceptual and applied automotive research and has long been recognized for its significant contributions to innovation in the automotive industry. The University has worked to develop and maintain strong collaborative relationships with our region's automotive stakeholders, which have resulted in important innovations in automotive materials, casting, controls, power-trains, cybersecurity; acoustic, electric vehicle, and clean



combustion engineering. Many of these innovations are incorporated into today's automobiles and manufacturing processes.

Today, University of Windsor research reaches far beyond the automotive sector to foster sustainable industry in a broad range of fields, including environmental, civil, industrial, and electrical engineering. Through collaboration with multi-sector industrial stakeholders, the University's research is helping to build sustainable industries by mobilizing and translating knowledge and technologies to collaborating industry partners. Our multidisciplinary researchers are providing technical, legal, and business advice to industries on a collaborative basis and working with industry partners, both in-house and off-site, on the development of next-generation concepts and products. Our researchers are recognized nationally and internationally for seminal contributions to scholarship and innovation in sustainable energy and energy infrastructure; environmental remediation; green materials and manufacturing processes; and clean water, air, and soil technologies.

Through collaboration with industry, community, and government partners, our researchers are developing real-world solutions and technologies to foster sustainable industry today and tomorrow for the betterment of society.

Understanding and Optimizing Borders

The University of Windsor is situated on the Detroit River, steps away from the border between Ontario in Canada and Michigan in the United States. The Windsor-Detroit border, the busiest trade crossing between Canada and the United States, provides a unique perspective from which to observe, study, and understand logistical, economic, societal, human, cultural, political, legal, and trade issues associated with borders and border-crossing. Through collaboration with public and private sector stakeholders, the University's research strives to understand and support the development of policies, regulations, and best practices that facilitate border-crossing and the binational coordination of environmental and emergency management in border regions. Our researchers are advancing critical knowledge on the transportation of goods and people, with the associated certifications and regulations, and are actively engaged in developing the science, technology, and engineering that will facilitate safe and secure border-crossings.

Our researchers are engaged in ground-breaking scholarship and instructional and outreach activities associated with the most pressing challenges affecting our borders today, including modeling and simulation of border traffic delays and congestion; design and operation of border infrastructure and inspection plazas; sustainable urban transportation and land use modelling and policy; cross-border supply chain and trade analysis; real-time data acquisition systems, GIS, and intelligent transportation systems (ITS); economic impact of border performance and border infrastructure investments; cross-border municipal and healthcare services and facilitation of cross-border medical research; border policy for customs; and human trafficking and other cross-border criminal activities. They are examining and providing critical insight on immigration and security; national security, anti-terrorism and human rights, racial profiling, international humanitarian law, international business, customs, transportation law, international development and global governance, international innovation strategy, and international environmental law.

Through collaborations with global scholars and stakeholders they are applying expertise in understanding and optimizing borders to international borders around the world.

Building Viable, Healthy, and Safe Communities

Viable, healthy, and safe communities are ones in which the continued development of a complex, multifaceted social fabric comprising a multitude of attributes, such as health, social services, and creative arts, is valued and supported. Across University of Windsor departments and disciplines, thematic research and creative activity converge to fulfill this goal. At the University, our world-class



faculty, graduate and undergraduate students, and staff are working together to build viable, healthy, and safe communities here in our city, in our country, and around the world. Nearly every facet of our diverse research community is in some way engaged in research that helps address the challenges facing humanity in a rapidly changing world.

Our multidisciplinary research approach to the exploration and understanding of the social, economic, and health conditions that will lead to the development of viable, healthy, and safe communities builds on synergy from various sectors and stakeholders. It aims to significantly advance knowledge about the lives of designated groups and people, including First Nations, women, ethnic and sexual minorities, the disabled, recent immigrants, and people of all cultural and socioeconomic strata, and to advance the humanities, arts, social and natural sciences, engineering, and technology. Advanced knowledge is harnessed and leveraged to address issues and build on strengths and resiliencies to enhance and maximize the vibrancy, health and well-being, livability, and safety of communities.

Our researchers are helping us to understand and appreciate our rapidly changing world through curiosity, creativity, and cultural expression. By providing insight into the nature of humanity, human existence, and the environment in which we live, our researchers are helping us to understand and reconcile our collective experience of the world around us and the future we face together. The study of history, philosophy, languages and literature, ethics and justice, politics, and fundamental science help us to understand our past and apply its lessons to our future, find meaning in our universe, understand others and expand our cultural awareness and sensitivities, promote social justice and equality, and develop knowledge of our physical environment. Through artistic expression, performance, and creative writing, we explore our creativity, share our humanity, convey our aspirations, stimulate ingenuity and inventiveness, and foster a common human experience.

Collaboration and Community Engagement

At the University of Windsor, we are committed to maximizing our benefit to our community at the regional, provincial, and national levels. We have a demonstrated track record of success in ensuring that we accurately identify, remain responsive to, and appropriately adapt to the needs of our community. We feel strongly that academic research, scholarship, and creativity should be translated into the community for societal gain. Across our campus, our researchers are developing and mobilizing ideas and technologies that address real-world challenges and enhance quality of life. We achieve this goal by cultivating and maintaining strong collaborative research partnerships with key community, government, as well as industry stakeholders.

Canada Research Chairs

Our Canada Research Chairs, who are among the world's most accomplished and promising experts in the natural sciences, health sciences, humanities, and social sciences, contribute directly to advancing research excellence at the University of Windsor. Not only do our research chairs deepen our knowledge of the world around us and maximize our benefit to society, but they also serve as role models and mentors to the next generation of scholars, artists, scientists, engineers, and entrepreneurs, contributing directly to their development through student supervision, teaching, and coordination of research endeavours.

Allocation and Management

The University of Windsor's Chairs are allocated and managed in accordance with our [Canada Research Chairs Equity, Diversity & Inclusion Action Plan](#). In order to ensure their equitable distribution institutionally, Chairs are allocated internally based on Tri-Agency revenue, thematic area, and equity and diversity targets on the recommendation of the University of Windsor's Executive Committee and in



consultation with our Faculty Deans. Recommendations for the utilization of allocations are approved by the Executive Committee.

The following table shows how the University of Windsor’s current and future Chairs are allocated by thematic research area, tier, and agency:

Grand Challenge	Tier 1	Tier 2
Safeguarding Health Great Lakes	2 NSERC	1 NSERC
Fostering Sustainable Industry	1 NSERC	2 NSERC
Understanding and Optimizing Borders		1 SSHRC
Building Viable, Healthy, and Safe Communities	1 CIHR; 1 SSHRC	2 NSERC; 1 SSHRC

Ongoing and future significant research initiatives that our Chairs help to strengthen and for which infrastructure support has or will be requested from the Canada Foundation for Innovation to support the Chairs has and will continue to be deployed to enhance the University of Windsor’s four Grand Challenges.

Gender Representation and Equity and Diversity Targets

The University of Windsor is on track to meet or, where possible, exceed national targets for Chair equity and diversity, including those related to gender representation. In addition to women, visible minorities, persons with disabilities, and Indigenous Peoples, the University of Windsor also recognizes sexual and gender minorities. We are proactive in monitoring and projecting allocations to avoid gaps in allocation of Chairs to the designated groups, and employ strategic recruitment plans to fill gaps as they emerge. The University of Windsor’s comprehensive strategy for ensuring equity and diversity of Chairs is outlined in detail in our [Canada Research Chairs Equity, Diversity & Inclusion Action Plan](#).