



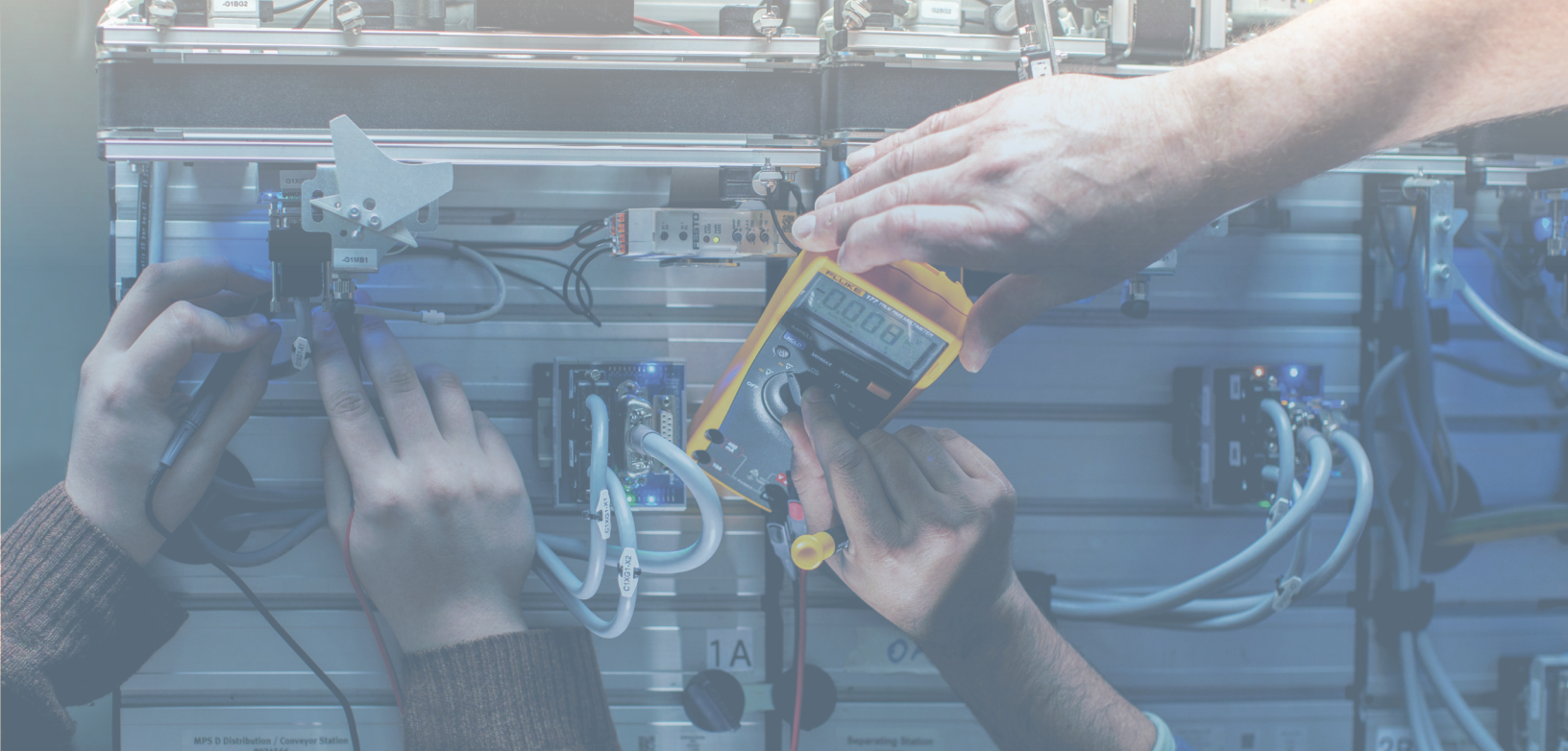


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Leadership Reflections

Dr. Mira Ray, PhD, MBA

Executive Director, Research, Innovation and Entrepreneurship

Applied research plays a critical role in connecting institutional expertise with real-world challenges. This year, our focus was on strengthening applied research capacity, deepening external partnerships and expanding opportunities for meaningful collaboration across industry, government and community sectors.

The Research and Innovation team supported a wide range of projects that translated knowledge into practical outcomes. From advanced manufacturing and digital initiatives to data-informed community work, this portfolio reflects a commitment to research that is responsive, relevant and grounded in evidence. These efforts contribute to regional growth, workforce development and the advancement of innovation ecosystems that support long-term resilience.



“

As we look ahead, applied research will continue to be a strategic priority. By investing in infrastructure, partnerships and applied learning opportunities, we are building the foundation for continued impact and ensuring that research remains a powerful tool for economic and social progress.

”

Dr. Mira Ray

Laleh Khodaparast, MEM, PMP

Director, Research and Innovation

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Looking ahead: Human centred innovation will continue to guide our work and anchor our partnerships. This year has built strong momentum, and we are proud of what has been achieved as we look forward to new opportunities for collaboration, innovation and regional impact.

Laleh Khodaparast

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Human centred innovation has defined our work this year. Guided by the principles of Industry 5.0, we continue to focus on how technology, data and research can strengthen people, workplaces and communities. This perspective connects our three applied research pillars, Industrial Simulation and Prototyping, Digital Initiatives and Thriving Communities, and ensures that people remain at the core of every solution we build.

Why this matters to students and employers: Student engagement remains central to how we design projects and learning opportunities. This year, 93 students from 14 programs contributed to applied research projects and gained direct exposure to real industry challenges. Events such as Auto-HACK and RISE Day showcased student talent, connected learners with industry mentors and demonstrated the value of experiential learning in building confidence and career-ready skills.

Expanding Industry 5.0 capacity: A major milestone this year was the designation of the Centre of Industrial Simulation and Prototyping as a Technology Access Centre. This achievement, along with new infrastructure funding, significantly expands our ability to support advanced manufacturing in the region. Manufacturers now have access to a low-risk environment to test and refine solutions, positioning Georgian as a hub for Industry 5.0 innovation and workforce development.

Dedicated training initiatives have also strengthened our student pipeline: Our pilot with Honda demonstrated the impact of targeted, industry-aligned training, with 25 students working alongside mentors on applied research projects tied directly to workforce needs. Building on this success, we are preparing to expand these initiatives to reach more students and partners.

Digital work continues to grow in importance as organizations face increasing pressure around cybersecurity, responsible AI and data governance. Through applied research and hands-on problem solving, our teams have helped partners navigate digital complexity with confidence.

The Centre of Industrial Simulation and Prototyping

A new Industry 5.0 capability for the region: The Centre of Industrial Simulation and Prototyping is Georgian's newly designated Technology Access Centre (TAC), established to be the first Industry 5.0 sandbox in our region. The Centre is a controlled testing environment that provides access to virtual and physical simulation tools and prototyping environments, allowing companies to refine ideas and solve technical problems without disrupting their active operations. It is designed to strengthen skills, accelerate problem solving and de-risk regional manufacturing innovation.

Investment that lowers risk for manufacturers: Supported by five million dollars in federal and provincial funding, this investment expands Georgian's capacity to support manufacturers by offering specialized equipment and applied research expertise that is not easily accessible to small and medium sized companies. The Centre functions as an agile solution for the region, giving industry partners the ability to try advanced technologies, validate concepts and reduce risk before committing to full-scale implementation. The Centre of Industrial Simulation and Prototyping offers three levels of service that guide partners from early exploration to full prototype testing. These levels range from early insights and technology assessment, through digital design and simulation, to hands on prototyping and physical system testing. Industry partners can engage at any point and receive support throughout the entire process.

Hands-on learning with industry-grade tools: Students also benefit directly from the Centre's capabilities. Through hands-on learning in robotics, automation, simulation and digital twins, learners develop

the future-focused skills needed in Industry 5.0 environments. Their involvement in real applied research projects connects them with employers and prepares them for high-demand careers in advanced manufacturing.

The Centre delivers significant value to the region. Each year, it will support dozens of manufacturers, build stronger innovation capacity across Central Ontario, and enable companies to modernize production with reduced risk. By integrating technology, human-centered design, and practical solutions, the Centre responds to a critical regional need for advanced manufacturing support. As a safe environment to test and adopt new tools, it ensures local industries remain competitive, resilient, and positioned for long-term success.



Dan Saso, Founder of Beaver Rock Coffee, works with Georgian researchers in the Centre of Industrial Simulation and Prototyping

“Georgian College is at the forefront of transformative and career-focused education. Among the college’s many contributions is the development of a highly skilled regional talent pipeline. This grant also speaks directly to how Georgian College is unlocking opportunities regionally, nationally and, indeed, globally – strengthening the economy and providing substantial social benefits. This is a significant milestone for the college – its students, employers and the community. ”

Georgian College President and CEO, Kevin Weaver.



“This funding reflects Georgian’s national leadership in applied research and our commitment to helping industry drive innovation and economic growth”

Dr. Mira Ray, Executive Director, Research, Innovation and Entrepreneurship, Georgian College.

Events 2025

AutoHACK:

Empowering tomorrow's innovators in advanced manufacturing

AutoHACK brought postsecondary students from across Ontario together for more than 26 hours to tackle real-world problems in automotive and advanced manufacturing. Teams collaborated intensively to craft creative, technology-driven solutions that explore smart manufacturing, automation, AI integration and next-generation production challenges. The event concluded with an inspiring showcase where top teams presented their ideas before industry experts. Alongside technical achievement, participants gained valuable experience in teamwork, rapid problem-solving and professional networking. AutoHACK demonstrates how hands-on, challenge-based learning nurtures student talent, encourages innovation in manufacturing, and helps prepare a workforce ready to meet the evolving demands of industry.



Students collaborate during the COLABORATORY Essential Futures Challenge Community Building

"Events like AutoHACK show the power of applied learning. Students engage with real industry challenges, collaborate with experts and see how their ideas can drive meaningful change. Experiences like this prepare them for the workforce and strengthen the innovation pipeline for our region."

Laleh Khodaparast, Director, Research and Innovation, Georgian College.

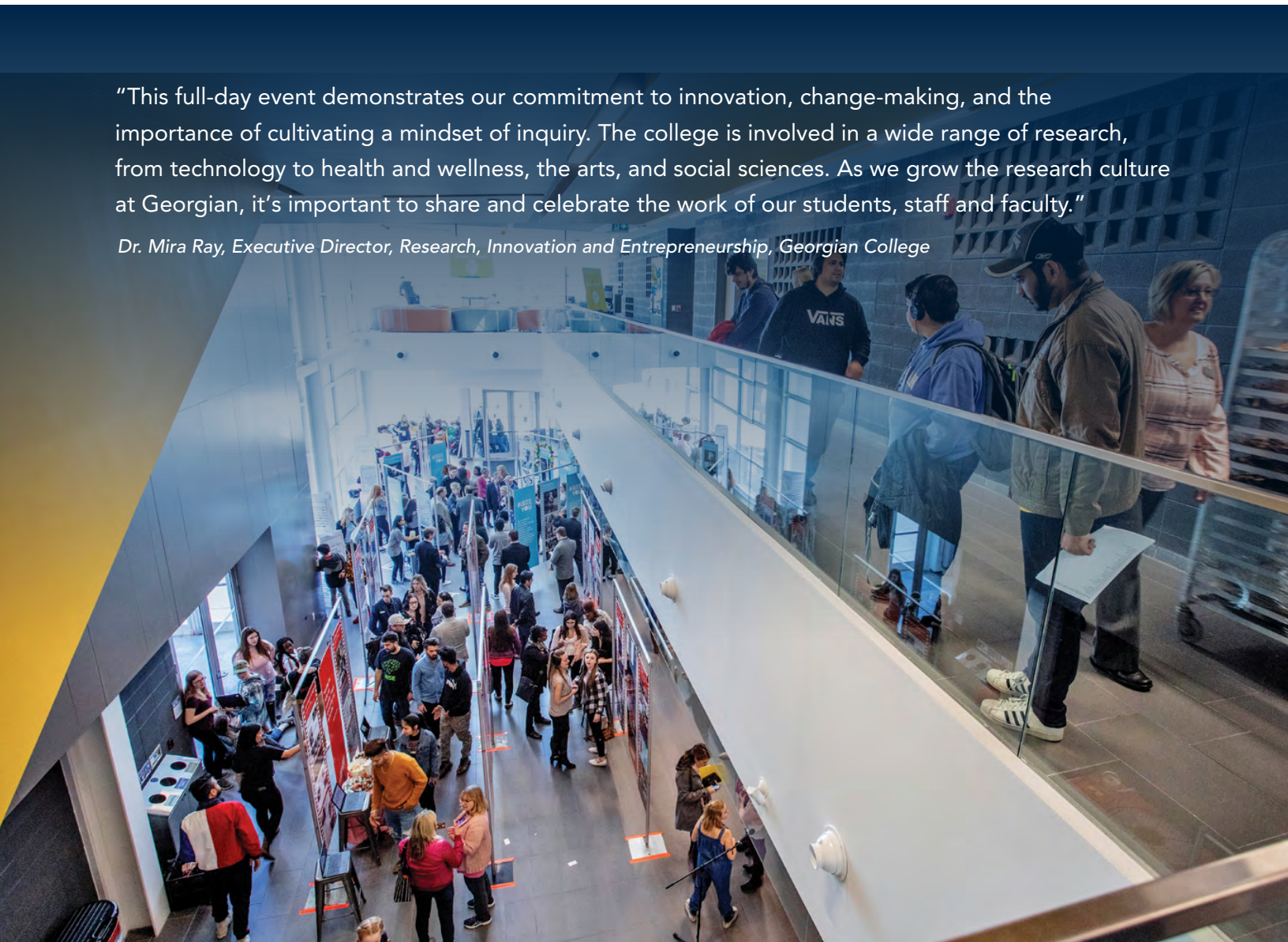
RISE Day:

Celebrating research, innovation, scholarship and Entrepreneurship

The annual Research, Innovation, Scholarship and entrepreneurship (RISE) Day event brought together students, faculty, industry partners and community members for a full day showcase of the creativity and impact happening across the college. Attendees took part in keynote and guest speaker sessions, interactive workshops and panel discussions that explored how new ideas can support sustainability, social change and community wellbeing. The event highlighted a wide range of research and entrepreneurial projects, including smart technology demonstrations, social innovation initiatives and student led ventures. The day also featured the annual Innov8 Awards, which recognize outstanding student contributions in research, innovation and changemaking. RISE Day reflects the college's commitment to integrating scholarship, applied research and entrepreneurship to inspire new ideas and strengthen community impact.

"This full-day event demonstrates our commitment to innovation, change-making, and the importance of cultivating a mindset of inquiry. The college is involved in a wide range of research, from technology to health and wellness, the arts, and social sciences. As we grow the research culture at Georgian, it's important to share and celebrate the work of our students, staff and faculty."

Dr. Mira Ray, Executive Director, Research, Innovation and Entrepreneurship, Georgian College



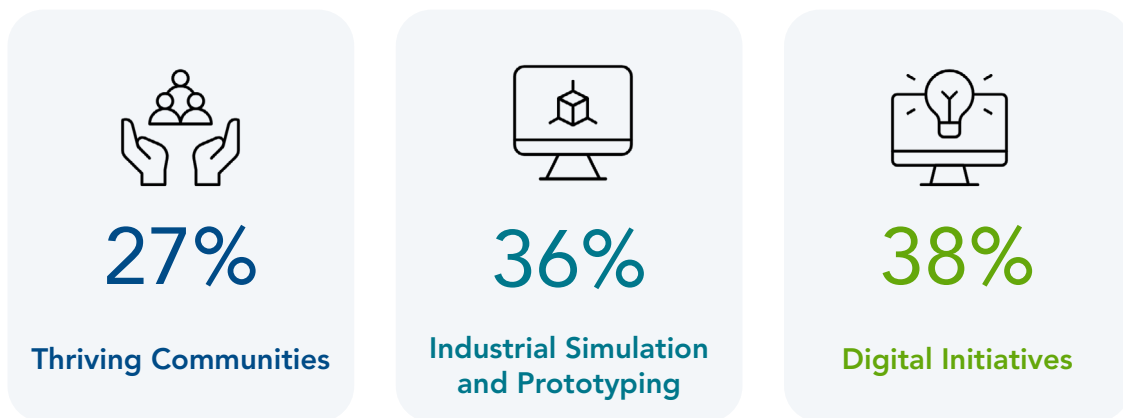
Research and Innovation by the Numbers

Our Work At a Glance

56

Projects Delivered

By Pillar



Outcome



By Field



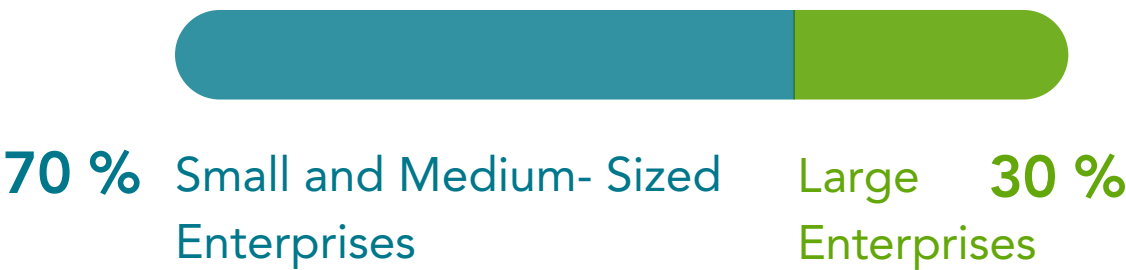
Project Duration



Who We Worked With

40 Unique Industry Partners

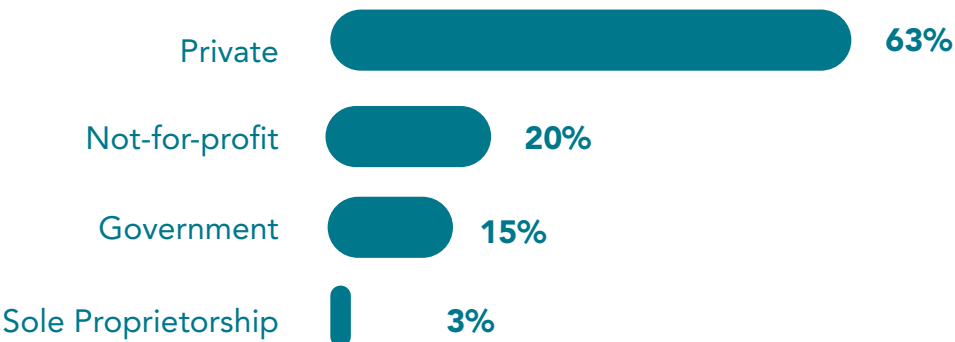
Partner Size



Client Engagement



Partner Type



Investment That Enables Impact

\$ 5.8 M
Total Funding

Funding Source



Academic Involvement



Academic Discipline



Diversified Funding Sources



NSERC



2.4 M



CFI



1.0 M



ORF



1.0 M



OVIN



335 K



NRC IRAP



128 K



ONCAT



55 K



Mitacs



45 K



WeRPN



20 K



Research Pillars

Industrial Simulation and Prototyping

Using digital twins and prototype testing, we help industry explore solutions before they reach the production floor. By simulating real equipment and processes, the center gives partners a low risk way to refine designs, troubleshoot issues and improve performance. Through applied research and student involvement, the work supports innovation, strengthens productivity and helps organizations adopt technologies that enhance efficiency and competitiveness.



20

Projects



31

Students



13

Partners

\$ 4.2 M

Total Funding

\$ 265 K

Industry Cash





Bracebridge Generation Ltd. Advancing open source energy management

“Working with Georgian’s Centre of Industrial Simulation and Prototyping gives us access to tools like their microgrid, which lets us test and refine new approaches in a controlled environment. That level of agile experimentation simply is not possible on an active utility system.”

Peter Ewald, Director, Lakeland Solutions

Work on this project focuses on developing a flexible, open-source energy management system that can help coordinate how solar, storage and other distributed energy resources operate across local grids. This type of system, often called a DERMS, brings together data from many assets so utilities can monitor performance, improve reliability and respond more effectively to changing conditions. The project centers on configuring and testing this system within Georgian’s microgrid, where students and researchers refine communication protocols, integrate components and assess performance, cybersecurity and interoperability. The goal is to create a scalable model that reduces reliance on proprietary platforms and strengthens grid resilience for the communities served by Bracebridge Generation Ltd. The work is being carried out through an NSERC ARD funded research partnership.



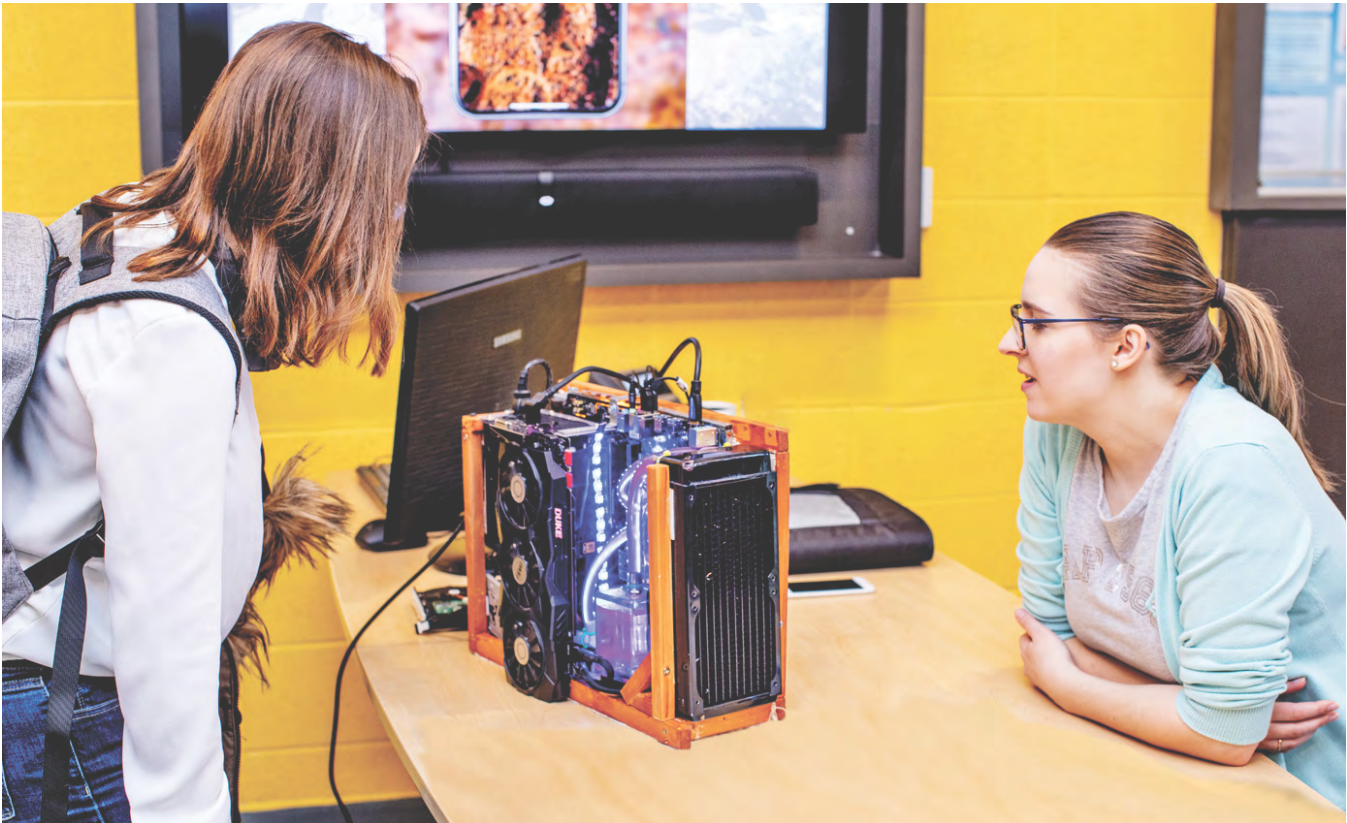
Chapman’s Ice Cream Strengthening data informed manufacturing

This collaboration supports Chapman’s Ice Cream as they work to enhance data visibility across their manufacturing operations. The project focuses on helping their Operations and Engineering teams organize and use production data to guide continuous improvement. Work includes supporting the setup of stable data communication pathways, structuring and logging real time operational information and establishing processes to prepare that data for analysis. Students and researchers also contributed to a proof of concept dashboard that displays live metrics, historical trends and key performance indicators to support faster, evidence informed decision making on the production floor. The initiative creates a foundation for deeper insight into performance and supports Chapman’s ongoing efforts to optimize their manufacturing environment.



Digital Initiatives

Digital Initiatives enable organizations to modernize by leveraging data-driven tools and intelligent technologies. Through solutions such as automation, AI, analytics, and secure cloud platforms, this pillar supports partners in improving efficiency and strengthening decision-making. With applied research and hands-on student involvement, these projects deliver practical, scalable digital systems that enhance performance, streamline workflows, and build long-term resilience and future-ready capabilities





White Tuque Enhancing cybersecurity insight through digital innovation



Robert D. Stewart, Founder of White Tuque, speaking at the US Embassy, September 2025

"Our collaboration with Georgian College's Research and Innovation team has strengthened our technical capacity, accelerated the development of a scalable cybersecurity solution for SMEs, and demonstrated the power of industry-academic partnerships in driving meaningful, accessible innovation."

Robert D. Stewart, Founder, White Tuque

White Tuque's collaboration with Georgian College showcases how industry-academic partnerships can spark meaningful innovation. Born from a shared vision to improve cybersecurity for underserved small and medium sized enterprises (SMEs), the initiative combines White Tuque's customer-centric approach with Georgian's applied research expertise. Together, they are developing a scalable cybersecurity tool that addresses a critical market gap: affordable, effective protection for SMEs.

Strengthened by continued support through an NSERC ARD grant, the project benefits from sustained research capacity, enabling deeper development, testing, and refinement. Through access to faculty expertise, emerging talent, and agile development support, White Tuque has expanded its technical capacity while providing students invaluable real-world experience. Supported by advisors like Microsoft/OpenAI and NVIDIA, this partnership strengthens Canada's cybersecurity ecosystem and empowers SMEs with stronger digital resilience.



Smart Beach Data-informed hazard detection along the Huron shoreline

"By working alongside the University of Waterloo and Georgian College, we're combining technology, research, and public input to take impactful, proactive steps toward enhancing beach safety on our beautiful shoreline."

Luke Charbonneau, Mayor of Saugeen Shores.

Now in its next phase along the Lake Huron shoreline, the Smart Beach project continues to demonstrate how collaborative research can strengthen community safety. Supported by CCSIF funding, Georgian College and the University of Waterloo are working with Saugeen Shores to collect continuous offshore data through a research buoy and analysis wave, current, and weather patterns that influence nearshore risk. Georgian students play a central role in transforming complex environmental datasets into predictive models and a user-friendly mobile tool that delivers real-time safety guidance to beachgoers. This multi-year initiative shows how sensors, modelling, and community partnership can enhance public awareness and support safer recreation across Huron's waterfront communities.

Thriving Communities

Communities thrive when decisions are grounded in strong evidence and local insight. This pillar supports projects that use data and collaboration to address real needs in areas such as safety, sustainability, equity and wellbeing. Through applied research and student involvement, the work helps partners identify challenges, uncover opportunities and strengthen community resilience.



A bold initiative focused on strengthening sustainable development across rural communities, this project is being completed in collaboration with Grey, Wellington and Dufferin Counties. The project brings together researchers, students and county staff to identify opportunities that support long term growth, environmental resilience and economic vitality. Work includes reviewing existing planning tools, examining local development trends and engaging community partners to understand barriers and strengths in the region. Insights from this collaboration will help inform future strategies that encourage sustainable building practices, improve access to data for decision making and support healthier rural communities where residents and businesses can thrive.

“We’re excited to have the support of Georgian College on a project that is so deeply rooted in the needs of our communities. The college’s support of Future Ready is an opportunity to build a road-map that not only addresses infrastructure and sustainability but also positions our region as a leader in forward-thinking, community-driven development.”

Andrea Matrosovs, Grey County Warden



Police Diversity Training

Evidence-based approaches to inclusion and anti-oppression

This multi-year collaboration with Barrie Police Service and Stratford Police Service is examining how anti-oppression and inclusion training can improve interactions between police and the communities they serve. Led by professors Dr. Eleanor Gittens and Isabelle Deschamps, the project brings together faculty, students and community partners to study current practices, identify gaps, and co-develop training approaches grounded in lived experience. Supported by NSERC funding, the team is gathering input from both residents and officers and tracking how attitudes and practices change over time. The goal is to generate evidence-informed tools that strengthen trust, fairness and procedural justice, contributing to safer and more inclusive communities across Ontario.



Professors Dr. Eleanor Gittens and Isabelle Deschamps are investigating evidence-based police diversity training through community-engaged research.

Students Success Story

Mckenzie Thayer

Professional Confidence Built Through Practice



"Thanks to the valuable opportunities I had working with Research and Innovation, I was able to develop my hard engineering skills, as well as my soft project management skills. It has been an honour to work with the great people of R&I, to learn from them, and grow the Simcoe County manufacturing industry. I am happy to call Hörmann my new home!"

Mckenzie Thayer

Mckenzie Thayer's move to Hörmann shows how much a strong technical background can accelerate when it is paired with real industry engagement. He joined Research and Innovation with the mechanical engineering technologist training needed to manage the technical aspects of projects, along with a steady and reliable approach to his work. What changed his trajectory was the seventeen months he spent developing and refining the professional skills that anchor successful client relationships.

From technical skills to professional confidence: Working with Research and Innovation placed Mckenzie in constant contact with industry partners, which elevated his communication skills to a higher level. He learned how to guide conversations, ask focused questions, clarify expectations and translate those discussions into structured action plans. Leading meetings, writing minutes, sending updates and following up through became routine parts of his role. Over time, the way he organized information, communicated decisions and maintained relationships became one of his defining strengths. Those abilities were shaped and sharpened through repeated practice, mentor support and exposure to real project demands. Hörmann saw that evolution firsthand. As Mckenzie supported engineering, planning and product and process development for their new roll up door mechanisms, they saw his professionalism deepen. His communication became more precise, his meetings more efficient and his ability to represent the department more polished. They recognized that he was not only technically capable, but also able to manage the interpersonal and organizational side of project work with confidence.

When a full-time position became available, the decision to bring him into the company was straightforward. Hörmann had already seen the value of the skills Mckenzie developed while at Research and Innovation, and they knew he could continue the work he had started with them at a professional level.

Mckenzie now works full time at Hörmann, carrying forward both his technical foundation and the communication and client management skills he strengthened during his seventeen months with Research and Innovation.

"The applied nature of our work gave Mckenzie space to grow. He improved steadily in how he handled meetings, updates and partner relationships, and that growth was easy to see. By the time Hörmann needed someone full time, Mckenzie had already shown he could manage both the technical and client-facing sides of the job."

Priyanshi Parekh, Hörmann Supervisor



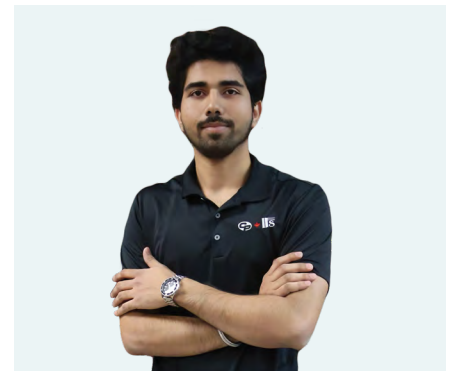
Khushwinder Singh

Freedom to Innovate, Prepared to Lead

Research and Innovation plays a major role in preparing students for professional careers, and Khushwinder Singh's path to Central Painting shows the strength of that model. Central Painting Inc. is one of Canada's leading national painting and flooring contractors, known for mid-to large-scale commercial and industrial projects and for its adoption of advanced industry technology. Khushwinder entered this environment with more than classroom knowledge, having spent two co-op terms and an additional year post graduation working within Research and Innovation. This hands on experience gave him the readiness and confidence needed to step into a full time role with a company that values innovation and technical skill.

Learning through real responsibility: Khushwinder contributed to five substantial software development projects during his time with Research and Innovation. His work included .NET MAUI cross-platform mobile app development with task management features, custom inventory tools, database design, workflow improvements, user interface development and contributions to applied research in language studies. Each project pushed him to solve new technical challenges and gave him the freedom to explore ideas, test solutions and learn from mentors.

The department also placed him in direct contact with project partners. He led meetings, gathered requirements, handled feedback and translated real problems into functioning software. These experiences strengthened his interpersonal skills, project management abilities and confidence in taking the lead. With support, he had acted as a project lead, collaborated with industry team, and delivered working products.



"Research and Innovation gave me the freedom to experiment, make decisions and build real solutions. That experience taught me how to approach problems creatively and gave me the confidence to lead projects."

Khushwinder Singh

A smooth transition into industry: This foundation made his transition to industry straightforward. During his post-graduate year with Research and Innovation, Khushwinder worked closely with the Central Painting team through regular check-ins and ongoing development on their internal tools. They saw the quality of his work, the initiative he brought to meetings and the professional way he communicated with their staff. As a result of demonstrated performance and impact, he was offered a full-time position with the organization.

Khushwinder has now been with Central Painting for over one year. He supports software development, cloud services, application releases, worker training, feedback collection, reporting and IT support for two sister companies. The environment felt familiar because the department had already prepared him to work at that level.

Why industry partners value this experience: Scott Gribbon, National Operations Manager at Central Painting, notes that the company relies on leading edge technology to support its commercial and industrial work, and that students coming through Research and Innovation are trained to operate at that level. He explains that they arrive with real project experience, strong communication skills and the ability to solve technical problems in authentic settings. According to Scott, this combination is exactly what made Khushwinder job ready and why bringing in students who have worked with the department is a clear advantage for Central Painting.



"We value our connection with Research and Innovation because their team delivers excellent work and their students arrive job ready. They have already solved real problems and worked with real partners, and that practical experience makes a noticeable difference."

Scott Gribbon, Central Painting



Applied research shaping the future