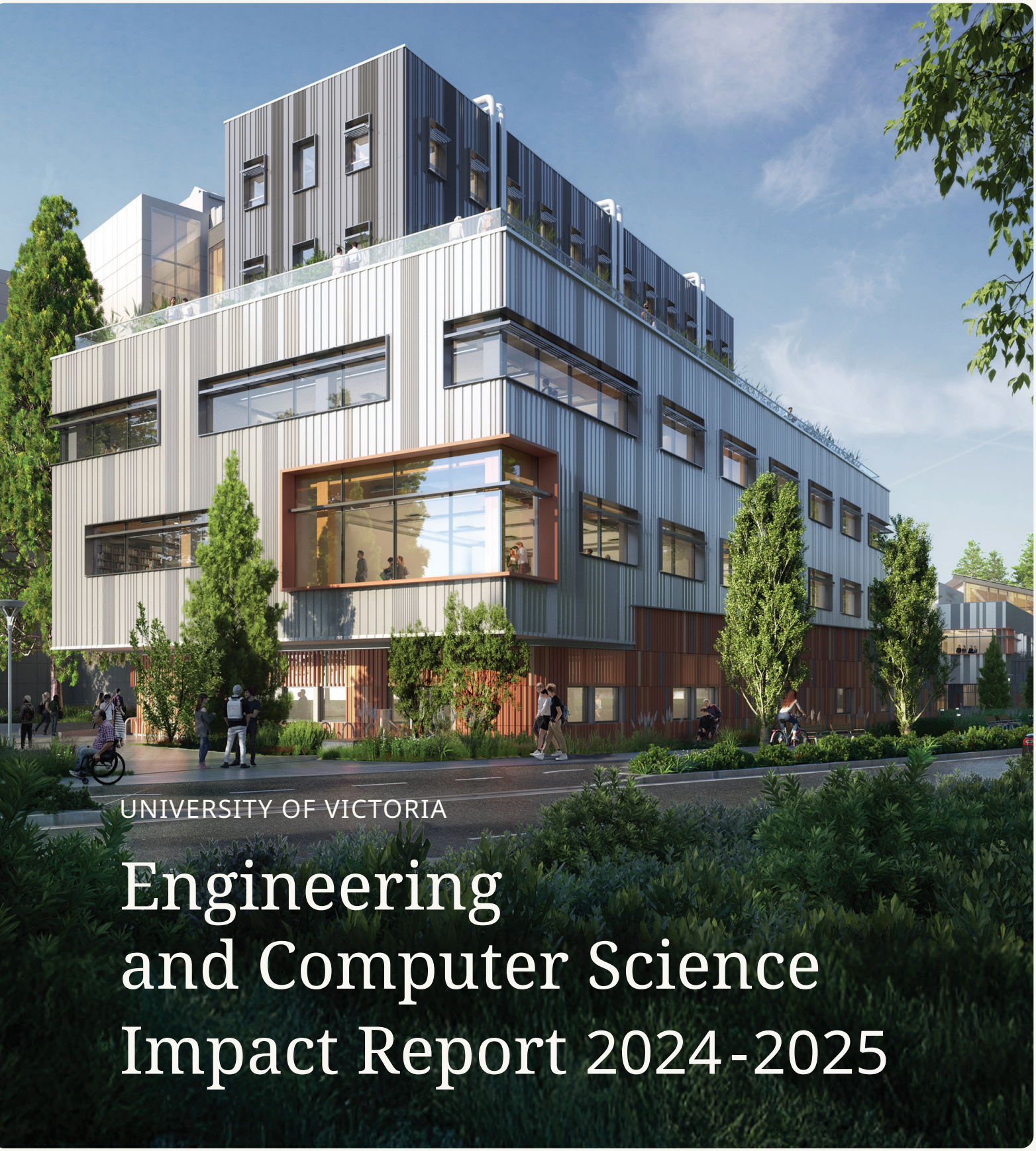
UVIC | Engineering and Computer Science



UNIVERSITY OF VICTORIA

# Engineering and Computer Science Impact Report 2024-2025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We acknowledge and respect the Lək̓ʷəŋən (Songhees and Xʷsepsəm/Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

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# Introduction

## Dean’s Message

It has been a year of momentum and purpose at UVic Engineering and Computer Science.

We’ve seen exciting growth across our programs, research, and partnerships, while remaining deeply grounded in our mission to advance knowledge that serves people, communities, and the planet.

This year, our commitment to sustainable engineering has deepened. Whether it’s tackling the climate crisis, addressing microplastic pollution, or advancing technologies for clean energy and safe water, our students and researchers are proving that engineering is not just about innovation, it’s about stewardship.

From AI and climate solutions to health technologies, our faculty continues to push boundaries in ways that reflect our values. We’re launching new programs, including two new professional programs in aerospace and building envelopes and structures, as well as a flagship Doctor of Engineering—the first DEng program in Canada. We have expanded experiential learning opportunities, and deepened community partnerships, all with a focus on preparing students not just to adapt to the future, but to shape it.

As Dean, I am especially proud of the culture we are building, which is one that values equity, curiosity, and care. This includes our commitment to Engineers Canada’s 30 by 30 initiative and the steps we are taking to create more inclusive pathways into engineering and computer science. We are also continuing our journey of engagement and learning in Truth and Reconciliation, acknowledging that this work is essential and ongoing.

In this report, you’ll see just a few examples of what makes this faculty so special: students leading change, research with real-world impact, and collaborations that reflect our responsibility to each other and to future generations.

It is a privilege to serve as Dean and to work alongside our many faculty, staff and students who are not only imagining a better future, but are building it for all.

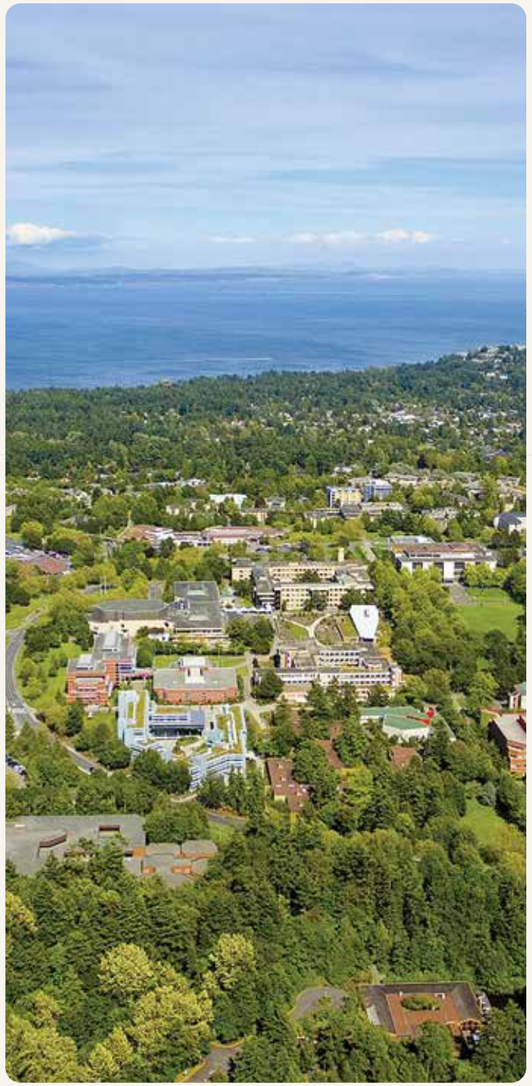
**Dr. Mina Hoorfar**

*Dean, Faculty of Engineering and Computer Science*
University of Victoria

# ECS Past, Present, and Future

The Faculty of Engineering at the University of Victoria was founded in 1983 with a single department, Electrical Engineering, and an ambitious vision: to create programs that combined academic excellence with real-world application. In just a few short years, Mechanical Engineering (1987) and Computer Science (1988) joined the faculty, broadening its reach and laying the groundwork for interdisciplinary collaboration. In 2016 Civil Engineering became the fourth core department, and the faculty has since added programs in Biomedical Engineering and Software Engineering.

Over the decades, ECS has built a strong reputation for innovation and relevance. It became one of the first faculties in Canada to embed 16 months of mandatory co-op experience into every engineering degree, ensuring that graduates are not only technically skilled but also workplace-ready. The completion of the Engineering and Computer Science Building in 2006 provided a sustainable new home for teaching and research, reflecting the faculty's growing commitment to environmental responsibility. In 2021, the faculty was renamed the Faculty of Engineering and Computer Science (ECS) to reflect its breadth and the integral role of computer science within its academic community.



Today, ECS is a vibrant and expanding faculty, recognized nationally and internationally for its strengths in education, research, and innovation. Student demand is at an all-time high, and the faculty is responding with new facilities and programs that push the boundaries of learning and discovery. Construction is underway on the High Bay Research and Structures Lab, a cutting-edge facility that will provide the space and tools needed for hands-on, large-scale engineering research and design, and the new ECSS Makerspace has just opened, giving students and clubs the space and tools to prototype, test, create, and fuel the experiential learning experiences that set ECS apart.

**ECS's impact is visible across many dimensions:**

Its **mandatory co-op program** continues to be a hallmark of UVic's approach, giving every student meaningful, career-shaping work experience.

The faculty **leads in sustainable education and practice**, from designing Canada's greenest civil engineering program to modeling sustainability in its own buildings.

Program innovation remains central, with **Western Canada's first biomedical engineering and aerospace programs** and B.C.'s only accredited software engineering program among its achievements, as well as **Canada's first Doctor of Engineering degree** launching in 2026.

ECS research is fueling Victoria's emergence as a **leading tech hub**, with alumni and faculty at the forefront of industry growth and global innovation.

Looking ahead, ECS is preparing for a new era of growth and influence. A major facility expansion opening in 2026 will meet rising student demand and provide world-class inclusive spaces for teaching, research, and collaboration. Sustainability will continue to be woven into every aspect of our work, from curriculum and facilities to partnerships and global initiatives. The vision for the future is bold: to prepare the next generation of engineers, computer scientists, and innovators to tackle the most complex challenges of our time. Whether advancing clean technologies, designing resilient infrastructure, shaping responsible AI, or growing the digital economy, ECS graduates will lead by bridging knowledge with practice and innovation with impact.

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# Core Values & Commitments

## Sustainability

Sustainability is woven into the fabric of ECS—from Canada's greenest civil engineering program to cutting-edge renewable energy research. UVic's Pacific Regional Institute for Marine Energy Discovery (PRIMED) is leading the way, with a $1 million TD Ready Challenge grant supporting development of a wave-powered microgrid for the Mowachaht/Muchalaht First Nation. This project is expected to deliver full-scale renewable power by 2029, and positions coastal communities as global leaders in clean energy innovation.

ECS faculty also play a key role in connecting industry and academia to accelerate climate solutions. In 2024, Civil Engineering professor Dr. Phalguni Mukhopadhyaya organized the International Conference on New Horizons in Green Civil Engineering at UVic, bringing together architects, engineers, and researchers to explore innovative materials and practices that reduce the carbon footprint of the built environment. With the construction sector responsible for nearly 37% of global greenhouse gas emissions, the conference emphasized the urgent need for collaboration between academia and industry to design buildings and infrastructure that support a sustainable future.

These are just a selection of our ongoing efforts that illustrate our commitment to sustainability across the board, from community energy systems to national policy to global industries. They reflect our belief that true innovation must be anchored in environmental responsibility, social justice, and the creation of solutions that last.


## Truth & Reconciliation

ECS is committed to advancing Truth and Reconciliation in a meaningful and long-term way. Our work begins with respect and acknowledgement of the Lək̓ʷəŋən and W̱ SÁNEĆ Peoples on whose territories we learn and work, and extends into curriculum, research, student experience, youth outreach, and community relationships.

Since 2023, the faculty has deepened its efforts through initiatives such as the Truth and (Re)conciliation Lecture Series, held annually from September to June, and Engagement Circles to centre Indigenous voices and faculty perspectives as we co-develop our faculty Indigenous Plan. Blanket Exercises, supported by the trained faculty facilitators, provide immersive opportunities to reflect on the Truth of our history and its ongoing impacts.

We are also investing in our Indigenous identifying people, whether staff, professors, or students, and ensuring First Nations, Métis, and Inuit see a STEM career as possible. It starts with working with our Indigenous youth in local Nations, with our K to 12 STEM outreach organization Science Venture taking travel teams to provide in-community programming.

On campus, the AISES (North American based STEM organization supporting Indigenous professionals and students) student chapter was re-established, connecting Indigenous students in engineering and science with mentorship, scholarships, and professional networks. Work is now underway to launch a Western Canada AISES Professional Chapter, expanding opportunities for UVic Indigenous professors and staff and ensuring proper wellness and cultural supports and networks. Indigenous art, teachings from Elders, and the integration of cultural knowledge are also shaping the future of ECS spaces, including our upcoming capital expansion.

Currently, we are developing an annual Truth and Reconciliation Retreat for faculty members and staff, with an emphasis on embedding Indigenous perspectives into curriculum design and fostering respectful research partnerships with Indigenous communities. These efforts reflect our belief that reconciliation is not a one-time project, but a continuous practice of learning, relationship building, and action.


## 30 x 30

The Faculty of Engineering and Computer Science is actively building a more inclusive community where women, gender-diverse, and people of equity-seeking identities thrive. Key programs like INSPIRE: STEM for Social Impact, student-led groups such as UVic WEST (Women in Science and Technology) and WECS (Women in Engineering & Computer Science), and broader diversity supports all play vital roles. INSPIRE alone has engaged over 30 students, six community partners, and more than 20 mentors in its community-driven design projects, reaching over 700 designers and users in local communities.

WEST has also quickly grown into a hub of empowerment. What started in 2022 as a recruitment and mentorship initiative now delivers hands-on, cross-disciplinary design projects for female-identifying students. In 2024, WEST's collaboration with Schneider Electric saw 29 participants working in teams to tackle sustainable energy challenges.

We are also proud to highlight the Women in Engineering Award, established by Michelle Mahovlich, P.Eng. Inspired by Engineers Canada's national call to increase the representation of women in the profession and by the legacy of the 14 women lost in the Polytechnique Montréal massacre, Mahovlich created this endowed award to support young women entering engineering. The inaugural recipient, Isabel Dinneny, graduated from UVic in Spring 2025, and the award continues to provide annual support in perpetuity to ensure more women see engineering as a welcoming and impactful career path.

Through these combined efforts—mentorship, project-based learning, financial support, and peer networks—ECS is helping advance Engineers Canada's goal of "30 by 30" (30% women among newly licensed engineers by 2030), which builds an inclusive and welcoming profession. We are equally committed to creating a Faculty where all students can see themselves, are treated fairly and respectfully, contribute confidently, and succeed.

# Student Experience: Learning Beyond the Classroom

At ECS, we believe that student success is shaped as much by experiences outside the classroom as it is by academic learning. Our renowned co-operative education program is mandatory for most undergraduate students and ensures every learner gains 16 months of paid, applied work experience, industry contacts, and confidence before graduation.

Beyond co-op, ECS students can immerse themselves in an extremely engaging student community, one of the most active on campus. With more than 30 clubs and competitive teams, ranging from Formula Racing and Satellite Design to GameDev, Robotics, and WECS (Women in Engineering & Computer Science), students find countless ways to innovate, collaborate, and lead. These clubs provide not only technical experience, but also friendships and networks that last well beyond their degree.

Community engagement is another hallmark of the ECS experience. Through partnerships, outreach, and student-driven initiatives, learners connect their education to real-world challenges in areas like advancing sustainability, mentoring youth in STEM, strengthening equity and inclusion, and seeing themselves in the Truth and Reconciliation Commission Calls to Action.

Together, these experiences create a learning environment where students don't just earn a degree, they build careers, communities, and lifelong connections.


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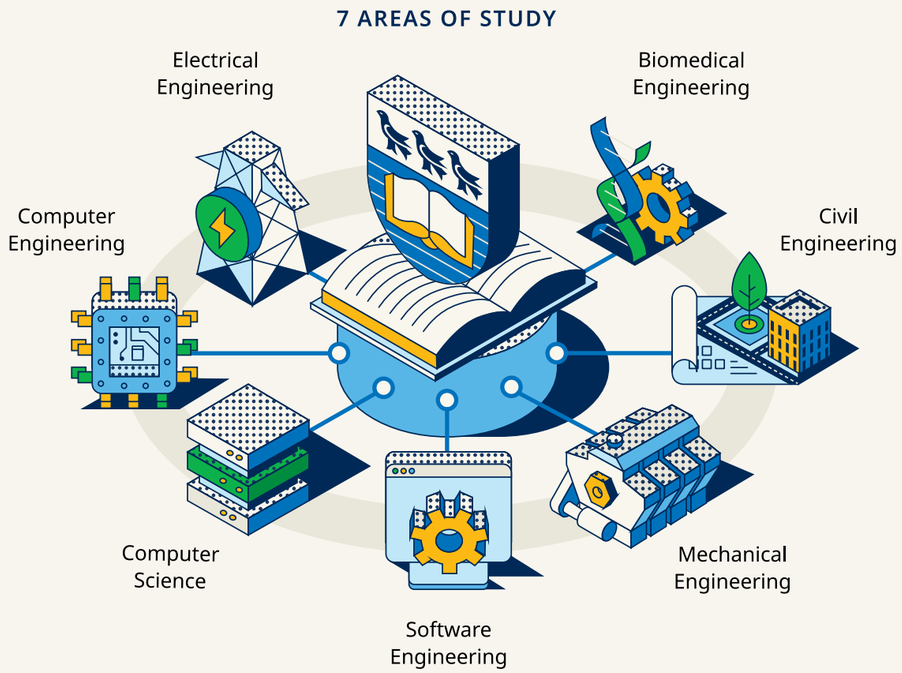
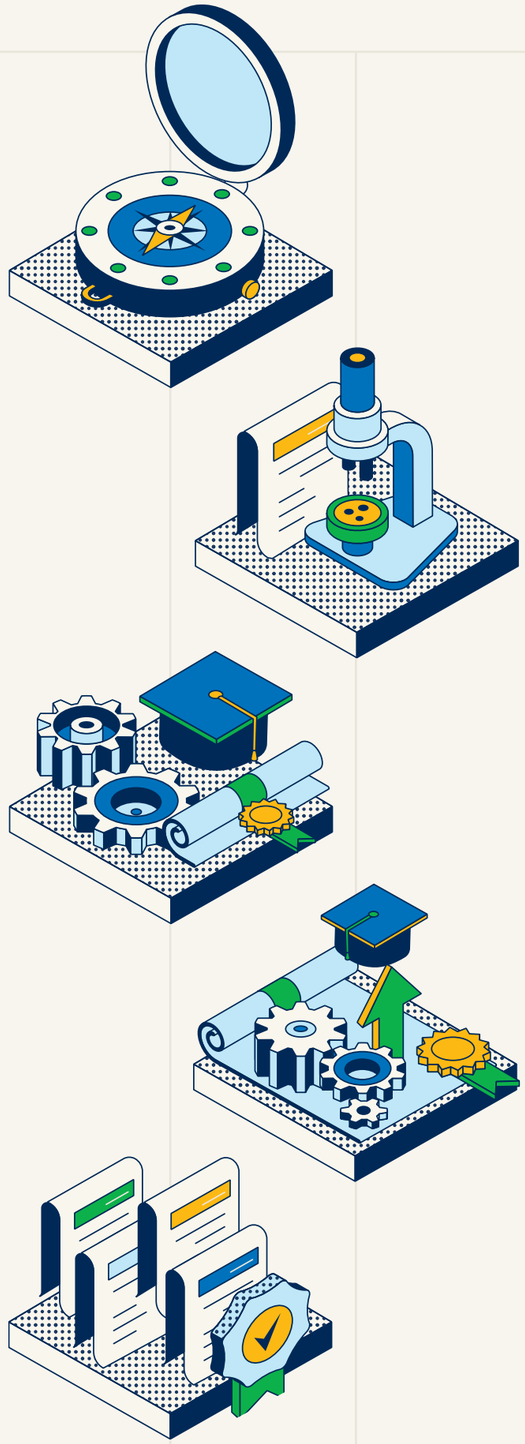
# Educational Excellence

## Overview of Academic Programs

With seven areas of study and a wide range of undergraduate and graduate offerings, ECS provides students with both depth and breadth of learning opportunities. Our programs span traditional engineering disciplines, emerging technologies, and professional pathways to prepare graduates to lead in industries, research, and communities.



### Undergraduate Programs

Biomedical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Mechanical Engineering, and Software Engineering.

### Graduate Research Programs

Master of Applied Science (MASc) and Master of Engineering (MEng) and PhD graduate research degrees in Electrical and Computer Engineering, Mechanical Engineering, Civil Engineering. Master of Science (MSc) and PhD programs in Computer Science.

### Graduate Professional Programs

Six course-based MEng specializations (Aerospace Systems Engineering, Applied Data Science, Biomedical Systems, Building Envelopes & Structures, Industrial Ecology, Telecommunications & Information Security).

### Doctor of Engineering (DEng – LEAP)

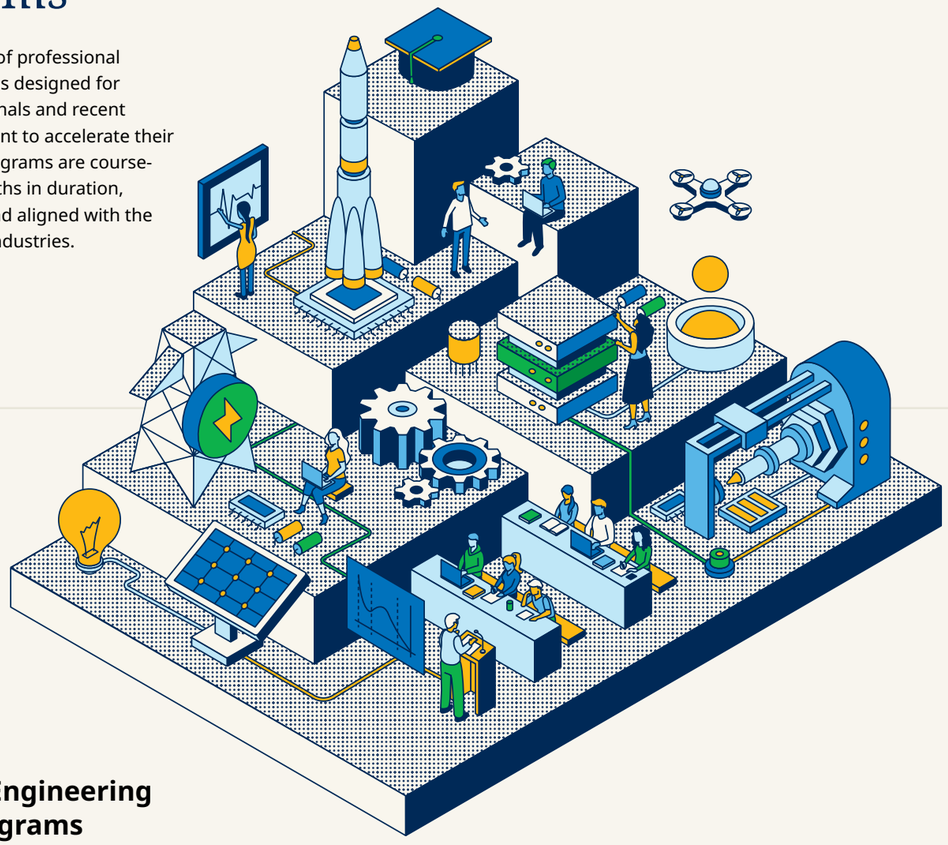
A professional doctorate designed for working professionals. Blending immersive conferences, course-based learning, and applied research projects.

### Micro-credentials & Certificates

Flexible options to support upskilling, reskilling, and lifelong learning in areas such as project management and gaming.

# Professional Programs

ECS offers a suite of professional graduate programs designed for working professionals and recent graduates who want to accelerate their careers. These programs are course-based, 12-16 months in duration, career-focused, and aligned with the needs of today's industries.



## Master of Engineering (MEng) Programs

**Aerospace Systems Engineering (ASE)**

Learn autonomous aerial vehicle design, hybrid-electric propulsion, advanced composites, and AI integration, culminating in a design-build-fly capstone project.

**Applied Data Science (MADS)**

Gain expertise in algorithms, machine learning, security, and analytics, applying big-data tools to real-world challenges across industries.

**Biomedical Systems (BISY)**

Design and develop biomedical devices through a foundation in physiology, materials, and biosensors, with a focus on human-centered engineering.

**Building Envelopes & Structures (BEST)**

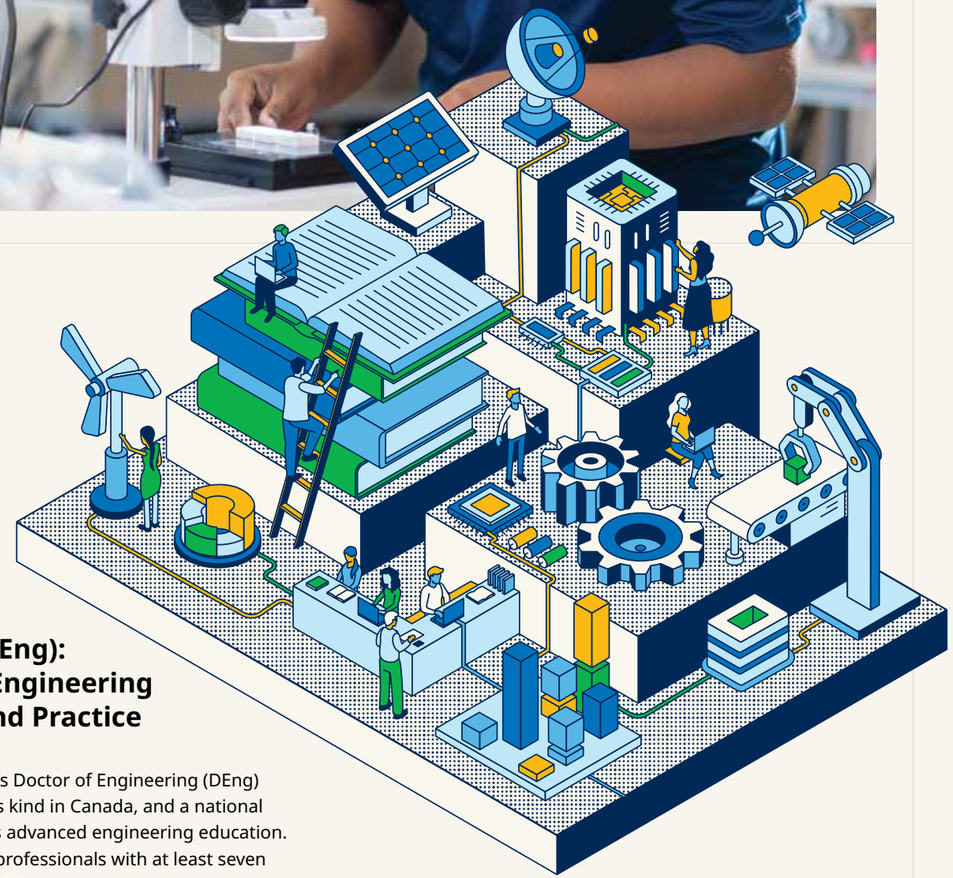
Specialize in climate-resilient structures and envelope systems using advanced materials and sustainable design practices.

**Industrial Ecology (INEC)**

Explore sustainable systems, industrial metabolism, and environmental optimization to help industries transition toward circular economies.

**Telecommunications & Information Security (MTIS)**

Develop skills in telecommunications systems, cybersecurity, and network protection to meet the growing demand for secure, global communications.

## Doctor of Engineering (DEng): Leadership in Engineering Applications and Practice

Launching in 2026, UVic's Doctor of Engineering (DEng) is the first program of its kind in Canada, and a national milestone that redefines advanced engineering education. Designed for seasoned professionals with at least seven years of experience, the DEng empowers engineers to lead innovation in practice while remaining embedded in their industries.

Through an intensive, cohort-based model with immersive residencies in Canada and abroad, participants collaborate with peers and mentors to apply research directly to real-world challenges. Instead of a traditional dissertation, students complete a praxis-based project, working to develop technologies, systems, or solutions that create measurable industry or societal impact.

This future-focused degree positions UVic as a national leader in applied doctoral education and a strategic lever for innovation, leadership, and industry partnership. By bridging research and professional practice, the DEng strengthens UVic's role as a hub for ethical, human-centred technological advancement—where engineers don't just study innovation, they drive it.

# Co-op

At UVic ECS, co-operative education is a cornerstone of how we prepare students to be professionals ready to make an impact from day one. For undergraduate engineering students, co-op is built into the curriculum, requiring four paid work terms (16 months of experience) before graduation. Computer Science students may choose co-op as an option, and graduate students can also integrate one or more work terms into their programs. This flexibility ensures that co-op strengthens career readiness across all levels of study.

**The results speak for themselves:**

**2000+**

**co-op placements each year**

**350+**

**entrepreneurial co-ops since the start of the program**

**61%**

**of eligible students take part in co-op before graduation**

**69%**

**of co-op students graduate with a job offer already in hand**

**83%**

**Nearly 83% of all UVic graduates find work in their field of study**

**Average monthly salaries for ECS co-op students are strong: approximately $3,800 at the undergraduate level and $4,200–$4,800 for graduate students**



For employers, co-op is a powerful way to access skilled talent, evaluate potential future hires, and bring new perspectives into the workplace. For donors, investments in co-op preparation, mentorship, and employer partnerships translate directly into higher student success, stronger retention, and measurable contributions to the economy.

By weaving together classroom learning with experience beyond the classroom, co-op ensures ECS graduates leave UVic with not just a degree, but with proven experience, exposure to professional safety and ethical thinking, professional networks, and the confidence to lead.

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# Research & Innovation

## Departmental Flagship Projects

### Computer Science Spotlight: Healthier Digital Worlds

In Computer Science, Dr. Regan Mandryk—Canada Research Chair in Digital Games and Immersive Social Technologies—is pioneering research into how online play shapes our wellbeing. Her work demonstrates that digital games can combat loneliness, strengthen relationships, and improve cognitive and emotional skills. But she also focuses on the darker side of online spaces: toxicity, harassment, and the circumstances under which gaming becomes problematic.

With studies involving thousands of young adults worldwide, Mandryk has shown that gaming can be either a "harmonious passion" that enhances life, or an "obsessive passion" that reflects deeper challenges such as poor sleep or lack of social support. Her next priority is to design interventions that address these root issues, helping people find healthier ways to engage with digital play.

Her research is strongly industry-connected, with collaborations that include Electronic Arts and Microsoft Research, and she is a member of UVic's new Aspiration Cluster on Socially Engaged Artificial Intelligence and Robotics (seAIR). By developing predictive models of toxicity and exploring AI-driven approaches to online harm prevention, her work aims to ensure that the digital worlds we create are human-centred, safe, and inclusive.

For ECS, this research underscores the truth that technology must serve people. Mandryk's work illustrates how computing research can shape not just the future of software, but the future of society.

**Dr. Regan Mandryk**

### Software Engineering Spotlight: Human-Centred Software

In Software Engineering, Dr. Margaret-Anne Storey—Canada Research Chair in Human and Social Aspects of Software Engineering and Fellow of the Royal Society of Canada—is internationally recognized for her pioneering research on socio-technical systems. Her work focuses on understanding how software tools, communication media, data visualizations and social theories can be leveraged to improve how software engineers and knowledge workers explore, understand, analyze, and share complex information and knowledge.

Most recently, Dr. Storey's team has developed tools, processes, and frameworks to improve software development productivity and developer well-being. They created frameworks for conceptualizing and measuring productivity and experience and proposed new methods to frame and evaluate this research. These findings have been central to industry discussions, where she has been invited to present her work at companies like Microsoft, Intel, Meta, Cortex, Zonos, Atlassian and Spotify. She currently serves as a Strategic Advisor to Microsoft and Chief Scientist at DX (recently acquired by Atlassian for one billion dollars) on these initiatives.

Her leadership has been recognized globally, including the award of an honorary doctorate from Lund University in Sweden in 2025, acknowledging her role in shaping software engineering practice and advancing international collaboration. Dr. Storey is also a role model and advocate for improving gender balance in tech, contributing to a stronger, more inclusive software engineering community.

**Dr. Margaret-Anne Storey**

## Electrical and Computer Engineering Spotlight: Sustainable Energy and Accessible Healthcare

In Computer Engineering, innovation is being driven by Dr. Makhsud Saidaminov—Canada Research Chair in Advanced Functional Materials—through the Shams Lab. His team works at the intersection of energy and health, developing new materials and devices that address two of society's most pressing challenges: climate change and equitable access to healthcare.

On the energy side, the lab is pushing perovskite solar technologies toward unprecedented efficiency, with the aim of surpassing the 25% sunlight-to-electricity milestone and scaling up to affordable, globally deployable solar modules. In parallel, the lab is pioneering cost-effective X-ray detectors to make advanced medical imaging accessible and safe, even in underserved communities. Both efforts are accelerated by an AI-driven "Auto Chemist" platform, which uses robotics and machine learning to discover and optimize new functional materials at scale.

What makes this work distinctive is its dual mission: powering a sustainable world while improving human health. Named in memory of Dr. Saidaminov's nephew, the Shams Lab embodies both scientific excellence and human impact, bridging advanced computational tools, materials science, and engineering with a vision for a more equitable future.

**Dr. Makhsud Saidaminov**

## Civil Engineering Spotlight: Public Health & Environmental Engineering (PH2E) Lab

The PH2E Lab, led by Professor Caetano Dorea in Civil Engineering, is UVic's premier group straddling environmental engineering and public health. It is Canada's first dedicated WASH (Water, Sanitation, Hygiene) research team, and is home to the NSERC CREATE WASH Canada training program. Their work spans developing and evaluating water, sanitation, and wastewater technologies that are appropriate for low-resource settings, improving analytical methods for water quality and disinfection, and characterizing biological treatment systems with the aim of safeguarding both human and environmental health.

What makes PH2E especially impactful is its global relevance and local application. Projects include designing field-appropriate sanitation solutions, improving disinfection standards in Canadian municipalities, and training next-generation researchers via CREATE. Students and faculty collaborate in low-resource communities abroad as well as in BC, fostering innovation that is scientifically rigorous, socially just, and immediately useful. For donors and industry partners, PH2E represents an opportunity to support research that yields both measurable public health outcomes and scalable environmental solutions.

**Dr. Caetano Dorea**

## Mechanical Engineering Spotlight: Sustainable Aviation with EcoJet

UVic's Centre for Aerospace Research (CfAR), founded and directed by Dr. Afzal Suleman—Canada Research Chair in Computational and Experimental Mechanics—is a key partner in Bombardier's EcoJet Research Project, a pan-Canadian initiative to reimagine aircraft design and cut emissions by up to 50%. Despite Bombardier being headquartered in Eastern Canada, it chose UVic as its first academic partner due to CfAR's unmatched expertise in experimental aviation design, fabrication, and flight-testing of scale model aircraft.

EcoJet explores blended-wing-body configurations and hybrid propulsion systems, advancing from small prototypes to larger flight demonstrators. For ECS students and researchers, the project offers rare, hands-on experience in cutting-edge aerospace design and sustainability at CfAR's facilities beside the Victoria International Airport. For industry partners and donors, the project demonstrates how UVic can deliver innovation capacity with national and global reach—attracting one of Canada's largest aerospace companies to collaborate from across the country.

By contributing directly to the next generation of cleaner aircraft, ECS researchers are showing how Mechanical Engineering can drive breakthroughs that serve both economic competitiveness and environmental responsibility.

**Dr. Afzal Suleman**

## Biomedical Engineering Spotlight: Orthopaedic Technologies & Biomechanics

In Biomedical Engineering, Dr. Josh Giles leads the Orthopaedic Technologies & Biomechanics Lab (OT&B), where research bridges fundamental biomechanics with the development of transformative medical technologies. His team uses both experimental and computational approaches to understand musculoskeletal function and to design devices that improve orthopaedic care.

The lab develops hybrid cadaveric–robotic testing systems capable of replicating real human joint motion, alongside advanced computational models such as Finite Element and Statistical Shape Modelling. This dual approach allows the team to shed new light on how injuries occur and how interventions like as implants or surgical procedures can affect joint performance.

Equally important is the lab's focus on translating biomechanical insights into clinical tools.

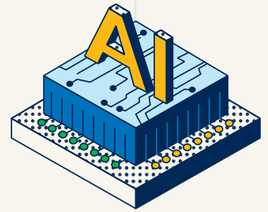
Projects include patient-specific surgical planning systems, quantitative assessment devices, and training platforms for orthopaedic surgeons. By integrating biomechanical models with mechatronic systems, Dr. Giles and his collaborators are creating solutions that improve patient outcomes and overcome barriers that have long slowed the adoption of new technologies in orthopaedics. For ECS, this research highlights the power of engineering to transform healthcare, bringing advanced modelling, design, and testing capabilities into direct partnership with medical professionals to deliver safer, more effective treatments.

**Dr. Josh Giles**

# Faculty Research

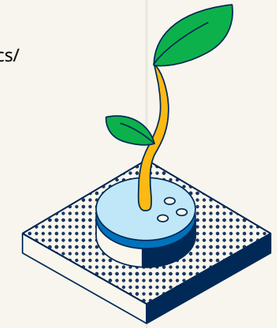
### Advanced Computing

- IoT
- Software Engineering
- Algorithms
- Cybersecurity
- Quantum Computing
- Computer Science
- Networks




### Big Data, Cloud & Enabling Technologies

- Graphics
- Cloud Computing
- HCI/CV
- Big Data/Data Analytics/ Data Science
- Data Visualization
- Machine Learning/AI
- AR/VR

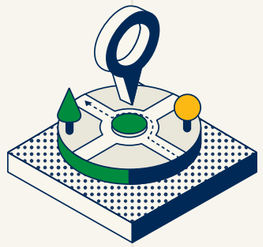


### Sustainability & Climate Resilience

- Air Quality
- Sustainable Water Systems/ Water Quality
- Carbon Capture/Utilization & Storage
- Renewable Energy: Sources, Planning & Control, Microgrids/Smart Grids
- Decarbonization of Transportation
- Future, Sustainable Cities: Resilient Urban Infrastructure, Smart Cities, Industrial Ecology
- Energy Use/Storage: Batteries, Hydrogen, Fuel Cells

### Advancing Medical & Health Technology

- Biomedical Sensors
- Biomedical Software/ Digital Health
- Drug Delivery
- Microfluidics
- Computational Biology
- Medical/Assistive Devices
- Tissue Engineering
- Medical Imaging/ Diagnostics/Planning
- Injury/Disease Biomechanics



### Intelligent Solutions

- Advanced/Smart Materials Engineering
- Modelling/Simulations
- Automation
- Sensors
- Additive Manufacturing
- Engineering Design
- Autonomous Navigation
- Robotics

# Grants & Funding

UVic Engineering and Computer Science continues to strengthen its research and partnership funding, with steady year-over-year growth and record results in 2024/25. Our success reflects the competitiveness of our faculty in national funding programs, and the deep trust industry and community partners place in our expertise. NSERC remains a cornerstone of our portfolio, while Mitacs has emerged as a powerful accelerator, linking students and researchers with real-world challenges and opportunities. Together, these funding sources enable breakthrough discoveries, new technologies, and community-driven solutions.

**$20M**

**total ECS funding (2024/25)**

**$7.4M**

**from NSERC in 2024/25**

**$7.9M**

**from Mitacs in 2024/25**

**100% Growth**

**over the past five years**

## Why smaller funding bodies matter:

Beyond flagship grants, the 1,000+ smaller donors and partners who have supported us in the past decade are the catalyst for what comes next. These gifts and awards fund pilot studies, student stipends, specialized equipment, community-engaged projects, and rapid-response work, often helping to test ground-breaking ideas so they're ready for major NSERC/CFI/industry investment. They also create hands-on opportunities for students and help research translate faster into real-world solutions.

**Health & biotech** accelerators like the Michael Smith Health Research BC, Rick Hansen Foundation, Parkinson Canada, Brain Canada Foundation and the Terry Fox Research Institute have helped fund early clinical tools, sensors and the data science needed to propel major breakthroughs.

**Indigenous-led & community partners** like the First Nations Health Authority, Songhees Nation, WSANEC School Board, Gwich'in Tribal Council, Nanwakolas Council, Tsawwassen First Nation, and the BC Association of Aboriginal Friendship Centres have worked with us to co-create research and local initiatives that deliver high impact innovation to isolated or underserved communities.

**Digital, AI & platform partners** like Adobe, Amazon, Google, IBM, Microsoft, NVIDIA, Ericsson, TELUS, and Oracle Labs provide data sets, cloud credits, expert mentorship, and applied AI collaborations to supercharge our compute capacity and enable industry-grade deployments.

**Public sector & municipal collaborators** such as BC Hydro, Environment & Climate Change Canada, Fisheries & Oceans Canada, the BC Ministry of Forests, the Capital Regional District, the City of Victoria, and the District of Saanich, work alongside us to co-design policy pilots, infrastructure planning, and public-interest tech that serve communities across the region.

**Environmental organizations** like the Pacific Salmon Foundation, Raincoast Conservation Foundation, Ducks Unlimited Canada, Habitat Conservation Trust Foundation, and Geoscience BC have helped us further ocean & climate resilience and protect coastal communities.

**Local tech & advanced manufacturing** innovators like Redlen Technologies, StarFish Products Engineering, Rainhouse Manufacturing, Teck Resources, and Fortinet help us turn ideas into impact by backing prototypes, supporting IP development, and funding real-world field trials that accelerate commercialization and student training.

**Global research networks** like EU Horizon Europe, the Wellcome Trust, UKRI, DAAD, the European Space Agency, NIH/NSF (US), and ArcticNet, provide our teams access to international facilities, shared datasets, and multi-site collaborations to extend UVic ECS research from Vancouver Island to the world.

**1,000+**

community & industry contributors powering pilots and student research.

**From Seed to Scale**

Small awards de-risk ideas that grow into multi-year grants.

**Faster Translation:**

Flexible gifts fund rapid prototypes and field trials.

**Talent Pathway**

Stipends and internships connect students with real clients.

**Community Impact**

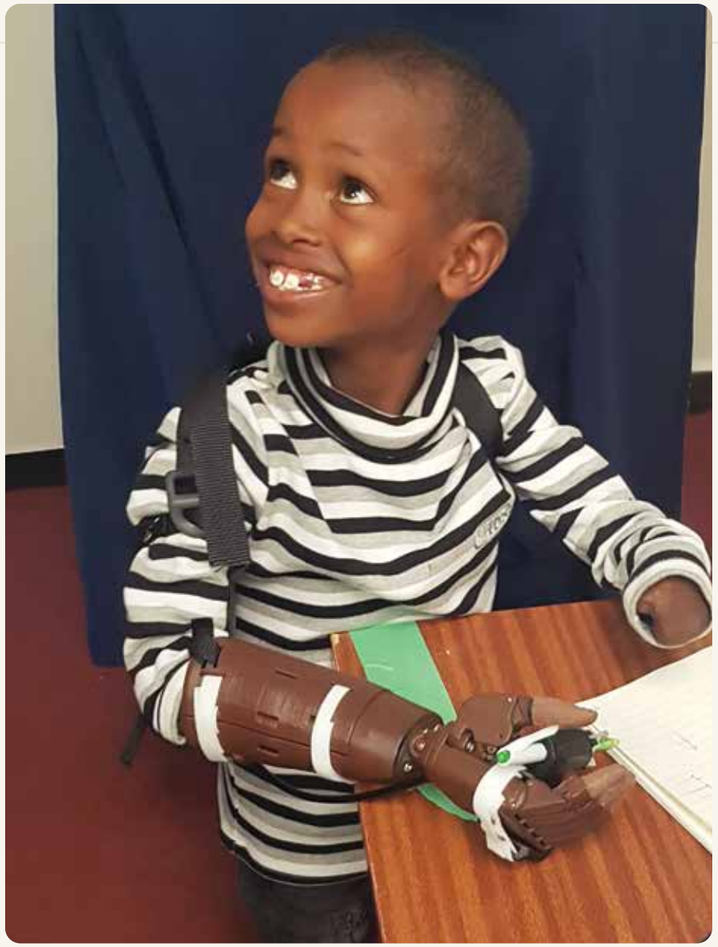
Indigenous and local partners guide place-based solutions.

# Companies founded from ECS research

## Innovating Beyond the Lab

ECS has been a fertile ground for entrepreneurship, with a growing number of companies spun out of research and student projects. These ventures span clean energy, health technology, aerospace, advanced computing, and more, reflecting the breadth of expertise and innovation within the faculty, and illustrate how UVic doesn't just generate knowledge, it translates ideas into products, services, and companies that address real challenges in energy, health, accessibility, and technology.

The companies below are just a few examples of dozens of companies grown from ECS research, showcasing the talents that are shaping industries, addressing global challenges, and strengthening our local and national economies.



### Sepura Home

Founded by ECS student Victor Nicolov, Sepura has designed a compost-separating sink device that diverts 99.9% of food waste solids for composting. The company raised $3.7 million in seed funding in 2023 and quickly sold out its first production run of 3,000 units, demonstrating strong demand for sustainable home technologies.

### VoxCell BioInnovation

Led by UVic ECS PhD alum Dr. Karolina Valente, VoxCell develops vascularized 3D-bioprinted tissue models to improve drug discovery and reduce reliance on animal testing. Recognized with awards including "10 to Watch 2023," VoxCell operates in their 12,000 ft² Victoria downtown facility and is positioned to transform biomedical research worldwide.

### Revyn Medical Technologies

Founded in 2023 by a team of UVic students, Revyn is re-designing the vaginal speculum to improve patient comfort and usability. The team has already won entrepreneurship awards and is advancing prototypes toward clinical testing, bringing long-overdue innovation to women's health.

### Pani Energy

Established by UVic alumnus Devesh Bharadwaj, Pani develops AI-driven software that helps water treatment and desalination plants cut energy use and costs. Named to the Global Cleantech 100, Pani's platform is already being adopted internationally to address the global challenge of water scarcity.

### Solaires Entreprises Inc.

Founded in 2020, Solaires is developing perovskite-based solar technologies including "Solar Ink" and thin flexible photovoltaic modules. With a team of more than 20 professionals, Solaires has raised over $24 million in total funding, and its modules are reaching industry-leading efficiencies of 35%. The company exemplifies ECS's role in advancing clean, scalable energy solutions.

### Victoria Hand Project

Emerging from Mechanical and Biomedical Engineering research, the Victoria Hand Project creates low-cost 3D-printed prosthetic arms for underserved communities. To date, it has provided prosthetic arms to more than 450 people across 11 countries, while training local clinicians and building long-term partnerships that expand access to life-changing mobility solutions.

### Quaternion Aerospace

Working closely with UVic's Centre for Aerospace Research (CfAR), Quaternion is part of a $4.2 million NSERC Alliance project advancing AI-enhanced interceptor drone technologies. The company builds on ECS's aerospace expertise, strengthening BC's role in the future of aviation and defense technologies.

### Setu

A clean-tech venture transforming recycled plastic into high-performance concrete reinforcement, Setu Technologies showcases the measurable impact of ECS-connected innovation. Founded by UVic professor Dr. Rishi Gupta, the company's patented fiber technology strengthens infrastructure while reducing waste, and is gaining traction across Canada as industries seek more sustainable construction solutions.

# Capital Expansion

## Building for the Future

ECS is on the cusp of completing the largest capital project in its history: the Engineering and Computer Science Expansion (ECSE). This transformative initiative will redefine how students learn, collaborate, and innovate at UVic. Opening in 2026, the new ECSE building will add state-of-the-art classrooms, design studios, and research labs to accommodate growing enrolment and provide flexible spaces for interdisciplinary learning and industry collaboration.

Alongside it, the High Bay Research and Structures Lab (HBRSL) will open in 2027, providing a purpose-built facility for large-scale structural, materials, and sustainability testing. With soaring ceilings, gantry cranes, and advanced instrumentation, the HBRSL will give students and researchers the capacity to tackle complex engineering challenges—from climate-resilient infrastructure to next-generation construction materials.

Despite significant cost pressures following the pandemic, ECS worked closely with university leadership, government, and donors to keep the project on track, reaffirming our collective commitment to the future of experiential learning, innovation, and sustainability at UVic. Together, these two facilities will anchor the next era of growth and discovery in engineering and computer science education.


This project has also inspired record-setting generosity from our community, including:

**Industry partners, community members and alumni have provided over $4M towards these new facilities.**

**Two gifts of $1 million each, including one to name a signature space in honour of the late Ron Hart, a respected local business leader.**

Beyond its physical footprint, the expansion will be a reflection of our values. The new buildings will integrate Indigenous art and teachings and include a commemorative installation honouring the 14 women killed in the 1989 Polytechnique Montréal tragedy, ensuring remembrance and reflection are part of the fabric of daily life in ECS. Together, these spaces will position our faculty as a visible, vibrant hub for research, innovation, and community connection on campus.

## ECSS Makerspace

A cornerstone of the expansion is the new ECSS Makerspace, opening in January 2026, named in recognition of a $450,000 gift from the Engineering and Computer Science Students' Society (ECSS).

The Makerspace will be a hub for creativity, collaboration, and community, where students can transform ideas into prototypes and innovation into impact. Designed to support capstone design courses across all departments, it will also provide tools and training for student clubs, design teams, and individual projects.

The facility will be equipped with an impressive range of tools and technologies, including 3D printers, a laser engraver and cutter, oscilloscopes, function generators, power supplies, logic analyzers, soldering stations, and vector and spectrum analyzers. Students will also have access to anti-static workstations, desktop computers for programming and testing, hand and power tools, digital calipers, a manual drill press, thermal camera, and 3-phase power access—everything needed to design, build, and test their creations safely and efficiently.

Led by students and supported by faculty and donors, the ECSS Makerspace represents the future of hands-on education at UVic. It embodies the spirit of ECS: where theory meets practice, and where learning happens through doing.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# Community & Impact

## Community Overview

ECS is more than a place to study; it's a community of learners, mentors, and innovators. Our students apply their knowledge through co-op, clubs, and community projects. Alumni give back as mentors and partners, while industry and donors help turn ideas into impact.

From K–12 outreach that sparks curiosity to research and design teams solving real-world challenges, ECS connects people across generations and disciplines, building a faculty defined by its diversity, respectful collaboration, creativity, and a shared commitment to shaping a better future.

## Student Profiles

### From Theory to Impact

At the heart of ECS are the students who bring our mission to life. Through a blend of rigorous academics, immersive co-op placements, and opportunities to lead in clubs, research, and community outreach, our students graduate with more than a degree. They leave UVic with the confidence, networks, and practical experience to innovate, collaborate, and lead with ethical judgment and a strong culture of safety across industries and communities. The following stories highlight just a few of the many ways ECS students are applying their skills by turning classroom theory into practical solutions, shaping the future of artificial intelligence, pushing boundaries in embedded systems, and mentoring peers locally and globally. They are a testament to the value of experiential learning and to the transformative impact of our faculty's programs and partnerships.

**Sophia Daniels**

### Hands-On Learning in Action

As a third-year Mechanical Engineering student, Sofia Daniels exemplifies the power of UVic's co-op program to transform classroom learning into professional impact. During her eight-month placement with Avalon Mechanical, she contributed to real projects in residential and commercial building systems, gaining applied experience that sharpened her technical expertise and broadened her professional skills.

Her work included drafting HVAC and plumbing systems, producing AutoCAD drawings, and developing schematics and calculations to size and select equipment. These responsibilities required her to apply rigorous engineering theory to practical design decisions to bridge academic knowledge with real-world problem solving.

Beyond technical contributions, she played a mentorship role, helping onboard new co-op students and sharing the tools and techniques she had mastered. This experience underscored the importance of teamwork, leadership, and effective communication in engineering practice.

Opportunities like this highlight the strength of UVic's co-op model: students graduate not only with academic depth, but with the confidence, professional networks, and career-ready experience that employers value.

**"UVic gave me the chance to turn classroom theory into real-world design experience."**

Sophia Daniels

**Param Singh**

## Designing the Future Today

As a Software Engineering student at UVic, Param Singh is already demonstrating how technical knowledge, creativity, and initiative combine to deliver tangible impact. During a year-long co-op placement with ATCO Electric in Edmonton, he contributed to major distribution design projects across Alberta, expanding his expertise in project management and gaining experience working on infrastructure replacement efforts in Fort McMurray following wildfire damage.

Beyond his core role, he took the initiative to develop new software tools that streamlined operations for his team. Among these were a Contractor Tracker App built in Power Apps to assign and monitor distribution projects, and a SOAP Client in C# to automate billing summaries, improving efficiency and providing direct value to the company.

Back on campus, his passion for embedded systems and automotive technology led him to create a custom digital vehicle speedometer, built using the LVGL graphics library and integrated with real-time CANBus data. This project not only sharpened his programming and interface design skills but also highlighted his drive to apply classroom learning to complex engineering challenges.

For him, UVic's combination of rigorous coursework and hands-on co-op placements has provided the perfect environment to innovate, collaborate, and prepare for a career at the intersection of software, hardware, and system design.

**"UVic gave me the tools and mentorship to innovate in the classroom, on co-op, and in building my own projects."**

Param Singh

**Zoë van de Vegte**

## Exploring Innovation Across Disciplines

As a third-year Computer Engineering student, Zoë van de Vegte has already made their mark at UVic through research, co-op, and community leadership. Drawn to the space where hardware and software meet, Zoë has excelled in courses like ECE 241 (Digital Design), which opened the door to their current co-op at Solidigm as a System on a Chip Development Engineer. On campus, they've been a core member of the UVic Satellite Design Team and an active leader in the Engineering and Computer Science Students' Society (ECSS), helping fellow students connect, collaborate, and succeed.

Zoë's impact reaches far beyond campus. They've led a Flutter app development workshop for 40 students in Bhutan and now serve as the Local Lead for Space Apps Victoria, bringing the NASA International Space Apps Challenge—the world's largest hackathon—to Vancouver Island. These experiences, combined with the project management skills learned in ECE 299 (Introduction to ECE Design), have given them the tools to guide small teams through big challenges.

In research, Zoë earned a Valerie Kuehne Undergraduate Research Award (VKURA) to explore cryptography and blockchain. Their project of creating a decentralized, zero-trust application highlighted the potential of secure digital systems and deepened their curiosity for what's ahead. Balancing technical skills with creativity and a passion for community, Zoë reflects the ECS student community who learn lead, and leave a lasting impact.

**"My involvement in the ECS community is helping me develop leadership skills and connections that continue to shape my experience at UVic."**

Zoë van de Vegte

**Lepeng Zhou**

# From Data Models to Real-World Impact

When Lepeng Zhou arrived at UVic in 2023 to begin his Master of Engineering in Applied Data Science (MADS), he was drawn by the program's unique blend of academic rigour and practical training. With a computer science background and a growing passion for statistics and data science, he was looking for a program that would set him up for success in a rapidly expanding field. MADS stood out as one of the best in Canada, and, with its co-op component, it offered exactly the kind of applied learning he was seeking.

One course that had a lasting influence was CSC 501: Database and Models, where he deepened his understanding of database design and data modelling. This directly connected to his co-op placement with the BC Energy Regulator, where he worked on database operations, data cleaning, and extracting information for analysis. The experience not only gave him confidence but also provided the critical skills such as SQL querying, data visualization, and Power BI dashboards, that helped him secure his current role as a Data Integration Specialist at Fluor Corporation.

For Lepeng, co-op was the bridge between theory and practice. "You learn theory in classes, and then you get to co-op and really see it applied," he reflects. "Develop those skills, bring them to the market, and the market will recognize the value you have." He credits the support of his UVic professors and the co-op office for guiding him through every step of the process, even helping him navigate last-minute hurdles to secure multiple opportunities.

Beyond academics, Lepeng values the community he found at UVic. Surrounded by the natural beauty of Vancouver Island, he describes his two years here as "wonderful," full of lasting friendships with classmates he still meets with regularly in Vancouver. Looking ahead, he is excited to continue growing in his role, learn from his company, and follow in his family's footsteps in engineering.

His long-term goal is to take on leadership positions where he can contribute to shaping the future of data-driven engineering.

**"UVic's program gave me the skills and co-op experience to turn data science theory into a career in engineering."**

Lepeng Zhou

**Cyrus Parsons**

# Coding with Purpose: Bringing AI to the Public Sector

For Victoria-raised Cyrus Parsons, pursuing graduate studies in Computer Science at UVic was both a natural choice and a transformative experience. A passion for computing, first sparked in elementary school, was nurtured at UVic through rigorous coursework and mentorship. Influential classes with Professor Alex Thomo, along with Thomo's personal encouragement, inspired Cyrus to continue into graduate studies, where he found new ways to push his curiosity into advanced research and application.

Supported by UVic's co-op program, Cyrus secured a placement with the BC Public Service, where he explored his growing interest in artificial intelligence. Faculty and staff guided him through every stage, including resume building, interview coaching, and connecting him to opportunities that aligned with his goals. That support gave him the confidence to take on increasingly complex challenges, both in the classroom and in the workplace.

Through his studies, research, and co-op experiences, Cyrus has developed not only strong technical expertise but also an appreciation for the collaborative and ethical dimensions of computing. Today, he is working to help shape the future of AI in the public service by building tools that improve how citizens interact with government and ensuring that innovation remains human-centered and responsible.

He credits the combination of UVic's academic rigour, mentorship from faculty, and the opportunity to apply his skills during co-op with preparing him to make meaningful contributions at the intersection of technology, policy, and public good.

**"UVic's mentorship and co-op program prepared me to shape the future of AI for public good."**

Cyrus Parsons

# Student Clubs

## Student Clubs & Teams: Learning, Leadership & Community

Student clubs are core to what makes UVic Engineering and Computer Science a vibrant, attractive, and high-impact faculty. We have a larger and more varied collection of clubs, teams, and societies than many institutions, spanning design and racing, advocacy, sustainability, coding, health and outreach, and more. Students from all years and programs join these clubs to apply classroom learning, gain leadership skills, collaborate across disciplines, and build community.

These teams are also a strong recruitment magnet: prospective students often say clubs and applied projects are major reasons they choose ECS. Team competitions, like the Autonomous Underwater Vehicle club, Satellite Design, Concrete Canoe, and Formula Racing, give students exposure to real engineering challenges and show off the creativity and capability of UVic students.

Importantly, clubs are self-funding, generating resources through events, sponsorships, membership fees, or small-scale production. However, support in money, materials, mentorship, and facilities from donors and industry makes a huge difference in helping them build prototypes, purchase equipment, get to competitions, ensure they have the right certifications and scale up their impact. The difference between a few students experimenting in a workspace and a well-equipped team that wins awards and solves real problems often comes down to that external support.

## UVic Satellite Design (UVSD)

UVSD is a high-profile student club focused on CubeSat design, development, and operations. They participate in the Canadian Satellite Design Challenge, where undergraduates take full ownership over projects from subsystems design to testing and launch-readiness. The club is open to students of all skill levels, offering mentorship, project experience, and connections to industry partners. Their work provides real aerospace engineering exposure which greatly strengthens student resumes as well as UVic's reputation as a place where serious hands-on work happens.

## Seismic

The UVic Seismic Design Team is UVic's Earthquake Engineering Research Institute Student Chapter where members design, build, and test small-scale balsa wood models on a shake table to study seismic behavior. The club offers practice-based learning with structural dynamics, materials, and disaster resilience—skills that are increasingly relevant as climate change forces designers to build for greater natural hazard risks. Attending and competing in the annual Seismic Design Competition requires materials and lab time, making sponsors, donors, and industry support crucial for scaling up prototypes and bringing concepts to competition or public demonstration.


## WEST (Women in Engineering, Science & Technology)

WEST provides female-identifying students with structured, applied engineering projects developed in partnership with industry. Over an 8-week cycle, students gain workshops in CAD or programming, work in teams on problem statements from companies (e.g., energy management with Schneider Electric, or passive building prototypes), and present final designs at showcase events. Projects like these build technical skill, confidence, professional networks, and often would not be possible without external funding, mentorship, and in-kind support.

## Clubs

- Association for Computing Machinery (ACM) UVic chapter
- Autonomous Underwater Vehicle Club (AUVIC)
- Canadian Society for Civil Engineering - Student Chapter (CSCE)
- Global Engineering Brigades
- Institute of Transportation Engineers (ITE) UVic chapter
- Leadership Through Diversity
- Machine Learning Competition Club
- Precious Plastics
- UVic AERO
- UVic AI Club
- UVic AISES Chapter
- UVic Aviation Club
- UVic Bike Design & Manufacturing Club
- UVic Biomedical
- Engineering Design Team
- UVic Competitive
- Programming Club
- UVic Engineering and Computer Science Student's Society (UVic ECSS)
- UVic Environmental Engineering Club (UVEEC)
- UVic Formula Electric
- UVic Formula Hybrid
- UVic Formula Racing
- UVic Game Design Club
- UVic Mining Technologies Club
- UVic Renewable Energy Club
- UVic Robotics
- UVic Rocketry Club
- UVic Satellite Design Club
- UVic Seismic
- UVic Submarine Racing Club
- UVic Technology Club
- UVic Women in Engineering and Computer Science (WECS)
- UVic Women in Science
- VikeLabs

# Alumni

With more than 13,000 alumni, UVic Engineering and Computer Science has built a global community of leaders, innovators, and changemakers. Our graduates are not only excelling in their chosen fields but are also shaping industries, advancing technology, and improving lives. From founding companies and leading global teams to driving sustainability and digital transformation, their success stories demonstrate the value of investing in ECS students: today's co-op student becomes tomorrow's engineer, entrepreneur, or executive whose work benefits society.

**13,000+**
**ECS alumni worldwide**

## Why alumni matter:

Our alumni embody the excellence of ECS and are among our strongest advocates and partners. They hire our students, mentor the next generation, sponsor projects, and invest in research. Their career achievements reflect not only their individual talent but also the foundation of experiential learning, co-op, and innovation culture that defines UVic ECS.

By engaging with our alumni, donors and industry partners tap into a thriving community of professionals committed to applying knowledge for measureable impact.

**Top Employers:**

Microsoft · amazon · British Columbia Public Service · Fortinet · Google · BC Hydro

**Career Paths**

Engineering specialists, technical leaders, project and program managers, founders, executives, and more.

**Industries:**

Computer software, telecommunications, construction, information technology, energy, advanced manufacturing, and beyond.

**Tech leadership:**

ECS alumni hold senior roles at Microsoft, Google, and Amazon, where they are advancing cloud computing, cybersecurity, and AI.

**Public good:**

Dozens of alumni are shaping policy, infrastructure, and digital transformation as engineers and leaders in BC Hydro and the BC Public Service.

**Entrepreneurship:**

Alumni-founded startups and companies contribute to Canada's innovation economy and strengthen the local tech ecosystem.

**40+** countries our alumni live and work in.

**Top 10 employers span global tech giants, public utilities, and government.**

**Alumni impact across every sector: from energy and health to digital platforms and sustainable design.**

# Community Partnership Highlights

Collaboration is at the heart of ECS. We partner with industry, professional bodies, schools, and community organizations to ensure that engineering and computer science are not only taught, but lived and shared. These partnerships take many forms:

- Public engagement through our Industry–Academic Panel Series, open to the community and featuring discussions on emerging issues such as green building, artificial intelligence, and sustainability.
- Events and outreach with local partners, including K–12 programming, hackathons, and student competitions, supported and often co-sponsored by ECS.
- Collaboration with professional associations, including Engineers and Geoscientists BC (EGBC) and BC Sustainable Energy Association (BCSEA), to strengthen professional development and connect students with industry leaders.


**Case Study**

## Rainhouse Engineering Showcase

A standout example of our partnerships is the annual Rainhouse Engineering Showcase. Co-hosted with Victoria's Rainhouse Engineering, this event provides a platform for local companies, student teams, and faculty to exhibit their projects side by side. ECS integrates its own Capstone Design Showcase into the event, creating a one-of-a-kind gathering that highlights the diversity of engineering projects—from early prototypes to industry-ready solutions.

The showcase is more than an exhibition: it's a place where students connect with employers, high school students see the possibilities of STEM, and industry demonstrates its role in the innovation ecosystem. For ECS, it represents the vision of engineering design as a shared community effort, bringing together academia, industry, and future engineers under one roof.

## Assisted Kayak Project

One spectacular example of this in action is the adaptive kayak device developed by a MECH Capstone team (led by Mariana Latta Suazo in 2024) in collaboration with RAD Society. The project drew on engineering design, empathy, and community need to create a device enabling paddlers with mobility challenges to better engage with water-based recreation. It was showcased at the Capstone + Rainhouse event, where local youth and the public could try it, offer feedback, and celebrate innovation in accessibility. This kind of project illustrates how ECS projects aren't just technically ambitious, they're also socially meaningful.

# K–12 and Community Outreach

ECS is committed to sparking curiosity and building pathways into STEM for the next generation. Our fun and engaging outreach programs reach thousands of youths every year, with a strong focus on equity, representation, and experiential learning.

## Science Venture

For more than 34 years, Science Venture has been delivering “hands-on, minds-on” STEM experiences to K–12 students across Vancouver Island. As UVic’s Actua Network Member, the program benefits from national expertise while responding to local needs. Since 1991, Science Venture has reached more than 300,000 youth through summer camps, clubs, school workshops, and events like Go ENG Girl, Go CODE Girl, and Science Rendezvous. In 2024 alone, 15,000 students participated, including over 1,000 Indigenous youth. 2025 continues at the same pace:

**14,000+**
**youth engaged** since January

**800**
**Indigenous youth** including in-community camps and workshop

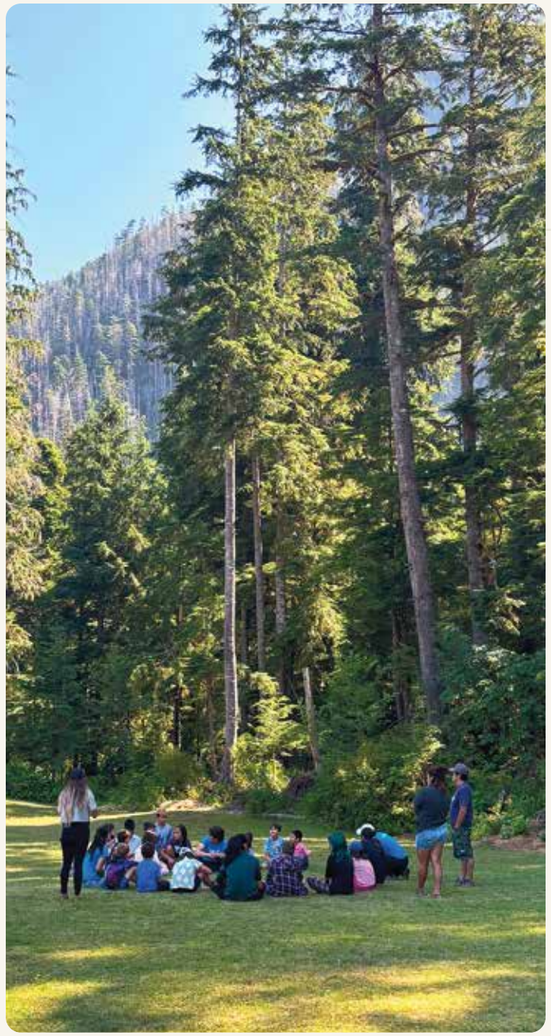
**465**
**in-class workshops** at more than 50 Greater Victoria schools

**1,200**
**students on-campus** for 18 summer camp programs

Science Venture is dedicated to barrier-free access, ensuring that underrepresented groups can see themselves in STEM.

## Indigenous Outreach

Through reciprocal partnerships with Indigenous communities and UVic’s Office of Indigenous Academic and Community Engagement (IACE), ECS plays a leadership role in advancing Indigenous STEM outreach. These programs are designed and delivered in community, making them culturally relevant, interactive, and community-driven. They not only encourage Indigenous youth to explore STEM as a career pathway but also help break down barriers to participation by embedding trust and reciprocity at the heart of engagement.



## CRD Bus Program

In partnership with the Capital Regional District, ECS supports a bus program for girls in grades 8–12 to explore engineering and sustainability firsthand. Participants visit facilities such as the Hartland Landfill and Residuals Treatment Facility, learning about infrastructure, waste management, and environmental engineering in action. The program inspires youth to imagine themselves in engineering and computer science careers while demonstrating the societal impact of these fields.

These are just a few of many initiatives that reflect ECS’s commitment to education as a continuum that begins in early curiosity and extends to careers in science, technology, engineering, and math. By investing in youth outreach, we ensure a stronger, more diverse future for STEM in Canada and beyond.

# Partner with Us

Together, we can unlock opportunity, elevate education, and shape the future.

The Faculty of Engineering and Computer Science is preparing the most diverse, ethical and safety-minded career-ready generation of problem-solvers in our history. But excellence at this scale requires more than great programs: it requires partnerships that share our belief in experiential learning, equity, and innovation that serves society.

Philanthropy has the unique power to transform what is imaginable into what is achievable. Your support fuels opportunities that tuition and public funding alone cannot reach, creating experiences that turn capable students into confident leaders.

Below are the areas where partnership creates the greatest impact.

## Experiential Learning That Transforms Careers

Students learn best by doing. Philanthropy creates access to life-changing experiences that build skills, confidence, and purpose.

**What support makes possible:**

- Co-op placements abroad or with community partners
- Field schools like our WASH program in Colombia
- Hands-on project opportunities that connect coursework to global challenges

## Empowering Student Teams and Clubs

With 30 student design and project teams spanning all disciplines, ECS offers one of the widest portfolios of hands-on learning opportunities for its size in Canada, and they consistently place among the top competitors nationally and internationally.

**What support makes possible:**

- Sustainable funding for clubs and competition teams
- Team garages, tools, and travel
- Student-led innovation that builds leadership and community
- Travel to competition, networking events, and technical conferences.

## Access, Equity, and Belonging for Every Student

Great engineering happens when diverse perspectives come together. Financial support removes barriers and helps ensure that every talented student can thrive.

**What support makes possible:**

- Scholarships and bursaries for underrepresented students
- Second-year retention awards, a critical moment for persistence
- Programs and wellness supports that build community, safety, and belonging

## Cutting-Edge Tools, Makerspaces, and Real-World Learning Environments

Engineering and computer science demand access to the latest tools, equipment, and prototyping spaces. Our new ECSE building and ECSS Makerspace will redefine hands-on learning.

**What support makes possible:**

- Equipment upgrades such as 3D printers, electronics benches, and laser cutters
- Innovation labs that mirror industry
- Spaces where students design, build, test, and solve real problems


## Entrepreneurial Thinking and Innovation Pathways

Students today need more than technical skills. They need the mindset to create, adapt, and lead.

**What support makes possible:**

- Entrepreneurial co-op terms
- Student innovation accelerators
- Prototype funding, start-up exploration, and pitch competitions

## Why It Matters Now

The world needs more engineers and computer scientists: creative, ethical and safety minded thinkers who design resilient infrastructure, advance clean energy, shape ethical AI, and build technologies that improve lives. The average age of engineers in Canada is 50, and the demand for talent is rising sharply.

Investing in students today ensures a skilled, diverse, socially responsible workforce tomorrow.

## Why UVic ECS

- A faculty that has doubled in size in ten years
- Mandatory co-op for engineers, with strong employer demand
- A deep commitment to equity, Indigenous engagement, and student belonging
- A once-in-a-generation capital expansion redefining experiential learning
- Together, we can build on these strengths and elevate the student experience from excellent to extraordinary.

# Your Support, Their Future

Philanthropy does more than fill gaps. It unleashes human potential. It opens doors for students who might otherwise turn away from transformational opportunities. It strengthens the local economy, fuels innovation, and builds the workforce our communities need.

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# By the Numbers

## 2024 Stats

13,000+
Alumni

3,000+
Undergrad Students

600+
Grad Students

250+ Entrepreneurial Co-ops

2000
Co-op Placements Each Year

30+
Clubs & Teams

200+
Active Industry Partnerships

70+
Active Community Partnerships

# Awards & Rankings

## Excellence Recognized, Impact Measured

At the University of Victoria's Faculty of Engineering and Computer Science, excellence is not just a goal: it's a measurable outcome. Our faculty's research, teaching, and innovation continue to earn national and global recognition, reflecting UVic's growing influence as a leader in engineering, computer science, and sustainability.

ECS ranks among Canada's top schools for research impact (Leiden 2025), placing:

**#2 in Engineering and Physical Sciences**

**#6 in Computer Science and Mathematics**

These rankings reflect the strength of our research community, the depth of our collaborations, and the real-world value of our discoveries.

## Global Recognition

In the 2024 Academic Ranking of World Universities (ARWU), UVic ranked among the world's top 200 universities in nine specialized areas, including:

- **Electrical & Electronic Engineering**
- **Telecommunication Engineering**

These distinctions position ECS among the most impactful research faculties worldwide and shows our strength where fundamental science meets applied innovation.

## Canada Research Chairs

ECS is home to seven Canada Research Chairs, advancing fields that span energy, materials, biomedical systems, computation, and human–technology interaction. Together, these leaders exemplify the interdisciplinary excellence that defines ECS by bridging science, engineering, and technology to drive meaningful progress.

**Dr. Regan Mandryk**

Tier 1, Digital Games and Immersive Social Technologies

**Dr. Ibrahim Numanagic**

Tier 2, Computational Biology and Data Science

**Dr. Makhsud Saidaminov**

Tier 2, Advanced Functional Materials

**Dr. Margaret-Anne Storey**

Tier 1, Human and Social Aspects of Software Engineering

**Dr. Keonhag Lee**

Tier 2, Energy Systems Innovation

**Dr. Afzal Suleman**

Tier 1, Computational and Experimental Mechanics

**Dr. Stephanie Willerth**

Tier 2, Biomedical Engineering

## Royal Society of Canada Honourees

Three ECS researchers were among the five UVic scholars recognized in 2025 by the Royal Society of Canada (RSC) with the country's highest academic honour for contributions to research, creativity, and public life. This recognition reflects the outstanding calibre and global impact of ECS research, where innovation and collaboration continue to shape knowledge that benefits society.

### Dr. Margaret-Anne Storey

(Computer Science)

Also named a Fellow of the Royal Society of Canada, Dr. Storey is a world leader in human-centred software engineering. Her work integrates social science and technology to improve how people design, understand, and use complex software systems.

### Dr. Yang Shi

(Mechanical Engineering)

Named a Fellow of the Royal Society of Canada, Dr. Shi is internationally recognized for advancing control theory and intelligent systems, improving the performance of autonomous vehicles, robotics, and cyber-physical systems across air, land, and sea.

### Dr. Tom Gleeson

(Civil Engineering / Earth & Ocean Sciences)

Elected as a member of the College of New Scholars, Dr. Gleeson is a global leader in groundwater sustainability and environmental justice, bridging research, policy, and community to make the invisible resource of groundwater visible and better protected.

## Most-Cited Research

ECS faculty continue to shape the global conversation through research that informs policy, advances technology, and inspires future discovery.

**Dr. Tom Gleeson** (Engineering)

Co-authored a Nature commentary on groundwater science that has been accessed over 12,000 times, marking his third consecutive year on the world's most-cited list.

**Dr. Makhsud Saidaminov** (Engineering/Science)

A Nature Synthesis article co-authored with his UVic team has been accessed 5,600+ times; this marks his fifth consecutive year on the list.

**Dr. Yang Shi** (Engineering)

A decade of innovative research has advanced industrial automation and control systems, marking his 11th year among the world's most-cited researchers.

# Student Scholarships & Awards

## Supporting Student Success and Belonging

The Faculty of Engineering and Computer Science is deeply committed to ensuring that every student has the opportunity to thrive. Over the past several years, ECS and UVic has expanded our Engineering and Computer Science portfolio of scholarships, bursaries, and awards to more than 75 dedicated opportunities for undergraduate and graduate students. These awards recognize academic excellence, leadership, innovation, and the pursuit of equity, diversity, and inclusion across all programs.

Since 2020, more than a dozen new endowed and annual awards have been created, thanks to the generosity of alumni, donors, and industry partners. Together, they are helping remove financial barriers, increase representation, and foster a culture of excellence that reflects the full diversity of our community.


## Spotlight Awards

### Cora Arenas and Carol Artemiw Women in Engineering and Computer Science Second-Year Retention Award

This award, established through the generosity of Michael and Antoinette Artemiw, honours the legacy of their mothers, Cora Arenas and Carol Artemiw. Each year, up to 40 awards of $10,000 are available to undergraduate students entering their second year, with preference given first to women-identifying students and second to 2SLGBTQQI+ students. The award recognizes that the transition from first to second year is a pivotal moment for retention and belonging, and affirms ECS's commitment to creating pathways where all students can succeed.

### Active Earth Engineering Award for Indigenous Students in STEM

Created in partnership with Active Earth Engineering Ltd., this award supports Indigenous students pursuing studies in science, technology, engineering, or mathematics. The award not only reflects a shared commitment to reconciliation and representation, but also highlights the vital role of Indigenous perspectives in shaping sustainable engineering and technology solutions for future generations.

### Dean's Medal for Professional Program Students

The Dean's Medal for Professional Program Students recognizes outstanding achievement, leadership, and academic excellence among students in ECS's professional Master of Engineering programs. As ECS continues to expand its suite of professional offerings, this new medal honours those who exemplify the faculty's values of innovation, professionalism, and community impact.

## A Growing Culture of Support

From industry partners like Enbridge, Stantec, and Reliable Controls, to individual donors and alumni who have created lasting legacies, this expanding network of support ensures that ECS students have the resources and encouragement to reach their full potential. These awards are investments in the next generation of engineers and computer scientists who will shape the future with creativity, purpose, and compassion.

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# Looking Forward


## Upcoming Initiatives

ECS is entering a transformative phase, with new spaces, programs, and strategic directions that will shape our impact for decades to come. Each initiative creates opportunities for partners and donors to contribute—whether through mentorship, collaboration, or support for the people, spaces, and ideas driving innovation.

### New Facilities: 2025–27

We are expanding our footprint with two new buildings—opening in September 2026 and January 2027—to meet student demand and create world-class labs and learning spaces. These facilities will feature curated art and cultural collaborations that make them welcoming, inspiring, and reflective of the diverse communities we serve. Opening sooner, in October 2025, our new makerspace will provide students and clubs with the tools to prototype, test, create, and fuel the experiential learning experiences that set ECS apart.

### First-in-Canada Programs

In September 2026, ECS will launch Western Canada's first Aerospace MEng program and Canada's first Doctor of Engineering (DEng). Both are designed in close consultation with industry andfocus on preparing students for careers that blend technical leadership with real-world impact.

### Expanding Professional Programs

We are developing new professional offerings in sustainable systems, artificial intelligence, and related emerging fields. These programs will build on the success of our existing MEng specializations, giving professionals and early-career graduates the skills to lead in areas critical to Canada's future economy.

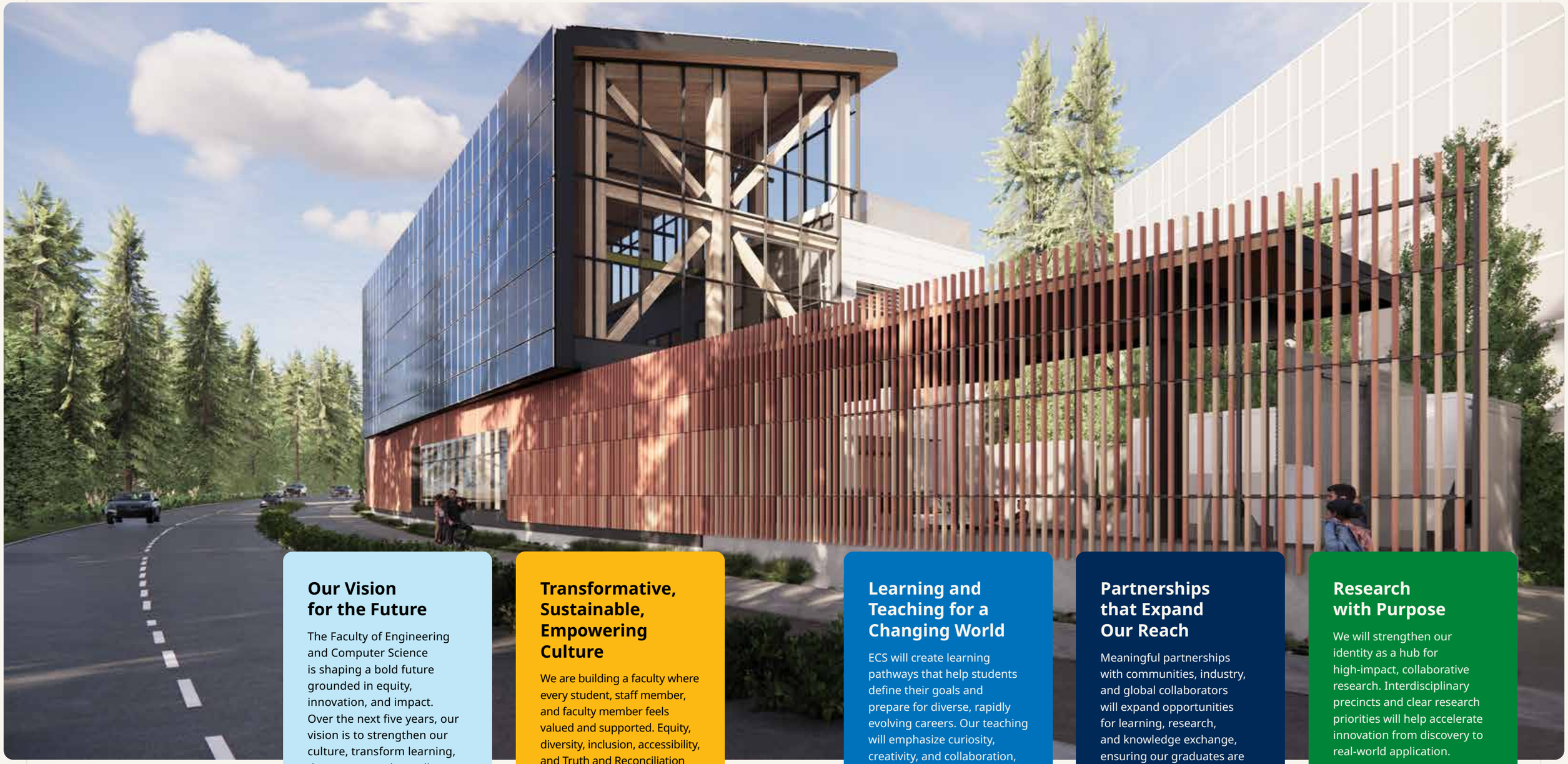
### AI Leadership

ECS is also formulating its role in advancing a human-centred, ethical approach to AI—not only in software, but in hardware, systems, and infrastructure. Our research and teaching in AI will expand in both size and scope, integrating technical advances with ethical frameworks, policy, and societal impact.

### Strategic Plan: January 2026

For the first time in our history, ECS is undertaking a faculty-wide strategic plan, set to launch in January 2026. Through extensive engagement with students, faculty, staff, industry, and community partners, we are defining our collective path for the next five years. This comes at a pivotal moment: a time of rapid technological change, global uncertainty, and pressing challenges in sustainability and equity. The plan will not only guide our internal priorities, but also signal to partners where their support can make the greatest impact to ensure that ECS remains a leader in innovation, education, and community engagement.

Together, these initiatives reflect a faculty that is growing in scale and quality, innovating in how we teach and research, and preparing graduates to lead responsibly in a rapidly changing world.



# Strategic Vision for the Future

## Our Vision for the Future

The Faculty of Engineering and Computer Science is shaping a bold future grounded in equity, innovation, and impact. Over the next five years, our vision is to strengthen our culture, transform learning, deepen research excellence, and expand partnerships that serve both people and the planet.

## Transformative, Sustainable, Empowering Culture

We are building a faculty where every student, staff member, and faculty member feels valued and supported. Equity, diversity, inclusion, accessibility, and Truth and Reconciliation will guide our decisions and shape how we teach, learn, and engage with communities. We aim to graduate ethical, socially conscious “Citizens of the Earth” who lead with integrity and care.

## Learning and Teaching for a Changing World

ECS will create learning pathways that help students define their goals and prepare for diverse, rapidly evolving careers. Our teaching will emphasize curiosity, creativity, and collaboration, supported by interdisciplinary approaches and the thoughtful integration of technologies such as AI to strengthen confidence and problem-solving skills.

## Partnerships that Expand Our Reach

Meaningful partnerships with communities, industry, and global collaborators will expand opportunities for learning, research, and knowledge exchange, ensuring our graduates are ready to lead in a shifting technological landscape.

## Research with Purpose

We will strengthen our identity as a hub for high-impact, collaborative research. Interdisciplinary precincts and clear research priorities will help accelerate innovation from discovery to real-world application.

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