



SUBJECT	Annual Sustainability Report FY 2021-22
SUBMITTED TO	Sustainability & Climate Action Committee
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REQUEST	For information only - No action requested
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PRIOR SUBMISSIONS

The Annual Sustainability Report is provided to the Board every winter; the last report was on December 7, 2021.

EXECUTIVE SUMMARY

The Annual Sustainability Report (ASR), attached as an Appendix, summarizes UBC’s significant actions in 2021-22 to advance sustainability priorities across both campuses in teaching, learning, research; operations and infrastructure; and community development.

The “Teaching, Learning and Research” section lists new sustainability degree and certificate programs. It contains profiles of 16 examples from UBC’s remarkable array of research programs, ranging from coastal adaptation to a cleantech hub, and from a wine research program to a mining microbe analysis platform. A spotlight on experiential and field-based learning programs highlights this unique and popular area of learning. Signature programs such as Sustainability Scholars, SEEDS and Campus as a Living Lab are also featured. An enhanced emphasis on climate education and research was evident this year, in part due to the Climate Emergency Task Force recommendations. Co-curricular activities with a climate focus expanded through multiple programs. The Sustainability Hub convened and coordinated a Climate Justice series of webinars and held UBC’s first Climate Emergency Week with many partners, and together these events attracted close to 4000 participants. The Sustainability Hub and the International Office conducted UBC’s first open selection process and chose eight faculty, staff, and student delegates to COP26, the climate treaty meeting.

The “Operations and Infrastructure” section charts many milestones in energy and emissions, waste and materials and green buildings. Following board endorsement in December 2021, year one implementation of Climate Action Plan 2030 (CAP 2030) resulted in significant operational GHG reductions from completion of the Bioenergy

Research & Demonstration Facility expansion project at UBCV, and implementation of demand-side management projects at UBCO through the Strategic Energy Management Plan. In addition, water use reductions and waste minimization initiatives continued. A new Zero Waste and Circular Economy Plan is under development. An array of measures is reducing the carbon footprint of campus buildings, and both operational carbon and embodied carbon of buildings are now quantified for new buildings and retrofits.

The “Community” section discusses key land use planning, community engagement, transportation, housing, and well-being developments. UBC’s Vancouver campus is over 100 years old, and this year a new campus planning process – Campus Vision 2050 – began to shape how it will grow over the next 30 years. Engagement with the university community has so far included a formation of a Community Advisory and other Committees, a 3-day design charrette, and multiple consultations and information sessions. UBC and *xwməθkwəy̓əm* (Musqueam) are also working together to co-develop a comprehensive framework to integrate *xwməθkwəy̓əm* values, interests and comments into planning. Work is beginning on a UBCO Campus Plan Update that will embody directions in the UBCO CAP 2030, support the creation of a complete campus community, and support reconciliation.

Finally, support for the SkyTrain extension to the UBCV campus is now stronger than ever and at UBCO, a new Transportation Plan will shift toward more sustainable modes of transport. New sustainable housing units were added to both campuses. The university increased its community engagement programs on both campuses and with UBC’s host Nations and neighbourhoods.

The climate emergency is a cross-cutting priority for sustainability on both campuses. The first Climate Emergency at UBC- Progress Report 2021-22 was recently published, building on UBC’s commitments in the 2019 Climate Emergency Declaration, and 2021 Climate Emergency Task Force report. The Executive Summary of this report is attached as an Appendix, and the full report is attached as Supplemental Materials.

PART ONE: 2021-22 HIGHLIGHTS

I. Teaching, Learning and Research

- New UBCO Bachelor of Sustainability: a four-year direct-entry program for students to address complex environmental challenges by integrating academic knowledge with community-based learning.
- UBC Climate Change Research Symposium led by VPRI brought together, virtually, climate researchers from multiple faculties at UBCV and UBCO.
- Launch of a new Certificate in Climate Studies and Action that can be added to any UBC undergraduate degree, co-led by Dr. Tara Ivanochko (Faculty of Science) and Dr. Jessica Dempsey (Faculty of Arts).
- Grant funding of \$109K went to support six new sustainability and climate education projects over the next 2 years, including a virtual/augmented reality field trip, focused on climate justice within Indigenous territories.
- UBCO joined the worldwide Climate / Justice Teach-In – faculty, students and staff came together for a dialogue on climate/justice and an introduction to the first-ever UBC Okanagan Climate Action Plan.
- The Centre for Climate Justice opened under the leadership of Co-Directors Naomi Klein and Candis Callison to support collaborative, interdisciplinary and intersectional research on climate justice.
- UBC Sustainability Initiative renamed to Sustainability Hub; launched a new 5-year strategic plan to inspire people to act upon the planet’s most urgent challenges through UBC’s academic and operational sustainability leadership.
- Sustainability Scholars Program graduate students supported progress on climate equity and social justice issues through applied research for cities including Vancouver, Surrey, and New Westminster, and

expanded to place a record number of graduate students in applied research internships with many new NGO mentors/partners.

- SEEDS Sustainability Program collaboration between students and faculty produced UBCV's first campus ecological connectivity map; informing planning related to climate adaptation and resilience.
- Four new Campus as a Living Lab projects were funded: a UBC E-Kitchen to repair electronics; new design thinking for student-family housing; remote monitoring of insects on campus; and 'close the loop' research on carbon, nutrients, and water in an urban campus context.
- UBCO funded two new Clusters of Research Excellence: Urban Indigenous Wellbeing – a community-led project prioritizing spiritual, mental, emotional and physical health; and Plastic Recycling – focused on scientifically and systemically reducing plastic waste. The Green Construction Research and Training Centre also received a funding renewal.
- Western Economic Diversification Canada announced \$1.9 million in funding to establish the Cleantech Hub research facility at UBCO, to advance clean technologies that convert industrial waste into high-quality components and new sustainable products.

II. Operations and Infrastructure

- Climate Action Plan 2030 (CAP 2030) for UBCV and UBCO is endorsed by the UBC Board of Governors.
- CAP 2030 goals target an 85% (UBCV) and 65% (UBCO) reduction in operational emissions, and a 45% reduction of extended emissions – associated with commuting, business air travel, food systems, materials and waste – by 2030, to exceed the Paris Agreement's target to limit global warming to 1.5°C.
- UBCV Bioenergy Research & Demonstration Facility 12-Megawatt expansion project completed – estimated operational GHG reductions (Scope 1 & 2) of approximately 60% below the 2007 baseline.
- UBCO Strategic Energy Management Plan demand-side management projects implemented this year are estimated to reduce energy and emissions by 655,000 kWh and 146 tCO₂e per year.
- New UBCV Water Pump Station meets 70% of campus demand for domestic cold water; increases campus resilience by ensuring a high-pressure water supply for firefighting and greater seismic resilience.
- New Zero Waste Action Plan to advance toward a Circular Economy undergoing stakeholder feedback.
- UBCO Skeena Residence achieves the first passive house dormitory in Canada and won BC's Net-Zero Energy-Ready Challenge and 2021 Canadian Green Building Awards.
- New Faculty & Staff Housing development 'Evolve' provides 110 faculty and staff rental homes; targets REAP gold plus and Passive House certification and aims to be UBC's first net zero energy building.

III. Community

- Campus Vision 2050 was launched to develop a 30-Year Vision and 10-Year Plan for the Vancouver campus and inform an updated Land Use Plan. Broad participation through the first phase of engagement included 3,300 people (33% staff; 26% students; 23% faculty; 11% residents; 5% alumni; 2% other) plus dialogue sessions with 13 specific equity-deserving groups, and meetings with *xwməθkwəyəm* and key advisory groups to gather further feedback and input.
- Campus Vision 2050 community feedback so far emphasized excellence in teaching, research and learning; co-developing the plan with *xwməθkwəyəm*; affordability and complete communities; improving inclusion and belonging; preserving campus ecology; responding to the climate emergency; strengthening campus and regional connectivity, and concern for ecological connectivity and biodiversity.
- As part of Campus Vision 2050, an update to UBC's Housing Action Plan is exploring how to expand housing choice and affordability for faculty, staff, students and other employers on campus.

- TransLink survey of over 15,000 people across Metro Vancouver found that 92% of respondents support the extension of the SkyTrain Millennium Line to UBC; SkyTrain is endorsed by the Mayors' Council on Regional Transportation and confirmed in TransLink's Transport 2050 Plan.
- New UBCO Transportation Plan completed; provides direction for a shift towards more sustainable modes of travel; implementation required to achieve the UBCO CAP 2030 commuting-related GHG reduction target.
- 225 new rental units at Wesbrook village at UBCV completed as part of the Evolve Passive House and Net Zero Ready project; 262 Faculty & Staff rental units under construction.
- UBCO completed Nechako Residence, increasing student housing by 220 beds.
- 1,600+ people registered for 'Kids Take Over UBC' with online and in-person activities; Thrive by the Fire pop-up concerts brought community members together to support mental health.
- 22 Inspiring Community Grants awarded to community members

PART TWO: 2022-23 STRATEGIC PRIORITIES

I. Teaching, Learning and Research

- Advance the 20-Year Sustainability Strategy and Climate Emergency Task Force recommendations in conjunction with related UBC strategic plans – Next Century, ISP, IAP, Student Strategic Plan etc.
- Expand and strengthen Campus as a Living Lab initiative via the launch of a new website, enhanced competition, and new programming to connect projects, people and resources across campus. Launch Campus as a Living Lab Initiative at UBCO.
- Continue to engage students, faculty and staff in Climate Action through UBCO Climate Teach-In and related activities on both campuses.
- Launch the first year of the Catalyst program for co-curricular sustainability engagement on campus leading to certification.
- Develop and launch the first UBC Extended Learning certificate in climate action planning led by Sustainability Hub, Campus and Community Planning and IRES.
- Advance 8 interdisciplinary faculty Fellow sustainability education projects.
- Collaborate with CTLT Open Educational Resources to expand the impact of sustainability education resources, and with Learning Exchange on a project to make climate research accessible.

II. Operations and Infrastructure

- UBCV and UBCO CAP 2030 Implementation

Both campuses: Commence Climate Resiliency and Adaptation Strategy

- UBCV—complete technical and feasibility analysis to identify the decarbonization pathway of the Academic District Energy System to achieve an 85% reduction target by 2030. Implementation of new Embodied and Operational Carbon Reduction Targets with supporting guidelines.
- UBCO – Continue to Implement Low Carbon Energy Strategy & Strategic Energy Management Plan, Develop Green Building Guidelines/Policy
- Transportation Planning

- UBCV- Continue Skytrain to campus campaign and planning; expand cycling infrastructure and other sustainable transportation options on campus
- UBCO – Implement Transportation Plan
- Capital Projects
 - UBCV-Continue to integrate UBC Green Building Action Plan sustainability performance measures into all major new capital projects and major building renewals.
 - UBCO – Develop new Capital Projects with a focus on high sustainability performance, Interdisciplinary Collaboration and Innovation (ICI) Building, UBCO Downtown UBCO Child’s Learning Centre

III. Community

- Continue to deepen engagement with xwməθkwəyəm (Musqueam) on UBC land use planning, including Campus Vision 2050.
- UBCV Campus Vision 2050 engagement continues and UBCO begins Campus Plan Update Scoping and Visioning
- Update UBC’s Housing Action Plan as part of the Campus Vision 2050 process, exploring more ways to confront the affordability crisis for faculty, staff and student housing.
- Continue to advocate for support from federal, provincial, regional and local governments for a SkyTrain connection to UBC on an accelerated basis such that construction flows uninterrupted from the Broadway Subway Project with a particular focus on fast-tracking the development of Business Case and Procurement Readiness activities.
- Launch a Neighbourhood Climate Action Plan for UBCV’s residential community, complementing the institutional Climate Action Plan.
- Continue to work with diverse partners to leverage campus and community assets to help support a vibrant community and extraordinary campus experience for students, faculty, staff, and residents.
- Work with campus partners to design and deliver new and exciting events, programs and projects for the campus community, that support institutional priorities around wellbeing, equity, inclusion, and public realm space activation.
- Launch Community Security Food Hubs across both campuses, a student-driven initiative supported by Wellbeing, the Sustainability Hub, and the CLL Fund Competition.
- Continue to dedicate space for a Syilx Okanagan Indigenous presence at UBCO through meaningful engagement partnerships on capital projects, public realm and land use projects.

APPENDICES

1. UBC Annual Sustainability Report 2021-2022. <https://sustain.ubc.ca/about/plans-policies-and-reports/2021-22-annual-sustainability-report>.
2. Executive Summary, Climate Emergency at UBC Progress Report 2021-2022. <https://bm-climate-emergency-2021-sandbox.sites.olt.ubc.ca/files/2022/10/CE-Progress-ExecutiveSummary-121022.pdf>

PRESENTATIONS

1. Presentation on Annual Sustainability Report.

SUPPLEMENTAL MATERIALS (optional reading for Governors)

1. Climate Emergency at UBC Progress Report 2021-2022. <https://bm-climate-emergency-2021-sandbox.sites.olt.ubc.ca/files/2022/10/CE-Progress-Summary-141022.pdf>
2. UBC Sustainability Dashboards <https://sustain.ubc.ca/dashboards>



THE UNIVERSITY OF BRITISH COLUMBIA

sustainability

2021/22

Annual Sustainability Report



About UBC

The University of British Columbia (UBC) is a global centre for teaching, learning and research, consistently ranked among the top 20 public universities in the world and recently recognized as North America's most international university.

We acknowledge that UBC's campuses are situated within the traditional territories of the Musqueam, Squamish and Tsleil-Waututh, and in the traditional, ancestral, unceded territory of the Syilx Okanagan Nation and their peoples.

Our Indigenous Strategic Plan advances our vision of becoming a leading university globally in the implementation of Indigenous peoples' human rights, and is our response to the Truth and Reconciliation Commission's 94 Calls to Action.



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Foreword

As campus life slowly resumed this year, UBC made major advances on sustainability. Highlights included endorsement by the UBC Board of Governors of ambitious new climate action plans for both campuses, progress on embedding climate justice through our Climate Emergency Response efforts, and the launch of Campus Vision 2050 – a comprehensive land use planning and engagement process that will shape how the Vancouver campus changes and grows over the next 30 years. But these accomplishments are only a small slice of this year’s sustainability story at UBC.



Students today face the twin crises of the climate emergency and biodiversity loss. To help prepare them, this year faculty launched a new Bachelor of Sustainability at our Okanagan campus, and a new Climate Studies and Action Certificate in Vancouver. In addition, the SEEDS program provided hundreds of students with research experience through on-campus projects, while the Sustainability Scholars program recruited more graduate students than ever to work on applied research for organizations across BC. Faculty support, including new Climate Education Grants and the Sustainability Fellows program, assisted faculty to develop new and revised climate action and sustainability courses, and the Campus as a Living Lab initiative funded new projects to test sustainability ideas on campus.

The breadth, depth, and innovation in UBC’s sustainability research is remarkable – and impossible to summarize comprehensively. But to take just two examples, a biodiversity solutions cluster – the Interdisciplinary Biodiversity Solutions Program (IBioS) – added five new faculty to produce world-class research, develop policy-relevant solutions, and build capacity through partnerships. And in news that attracted global coverage, the Department of Geography launched the Centre for Climate Justice, led by Professors Naomi Klein and Candis Callison.

UBC also continues to advance climate action and sustainability through our operations. Low carbon energy supply is increasing in Vancouver with the expansion of the Bioenergy Research and Demonstration Facility, while the Okanagan campus continues to invest in decarbonizing heating and cooling systems, reducing overall energy demand, and is revising green building and energy targets for all new capital and renewal projects.

High performance building requirements are exemplified by the Skeena Passive House residence at UBC Okanagan, and the Evolve Faculty and Staff Housing Project in Vancouver designed to Passive House certification and Net Zero Energy ready. UBC also introduced a new climate-friendly food production and procurement program system wide which aims to reduce waste and emissions while increasing food recovery for those in need. New performance dashboards featuring open data are increasing accountability.

UBC continues to advocate for and plan the Millennium Line SkyTrain extension to the Vancouver campus. An ambitious new Transportation Plan for the Okanagan campus includes a subsidised faculty and staff transit “Pro Pass”, a parking levy to fund sustainable transportation programs, and new technology to track and manage parking use in real time.

In summary, UBC demonstrates sustainability leadership in teaching and research, operations, and community life. But we know even more can be done. We hope this report inspires even greater action and commitment in the year ahead.

LINDA NOWLAN

Senior Director, Sustainability Hub

MICHAEL WHITE

Associate Vice-President, Campus + Community Planning

ROB EINARSON

Associate Vice-President, Finance & Operations (UBC Okanagan)

Teaching, Learning and Research

Across UBC, faculty and students are teaching, learning and exploring sustainability through hundreds of courses, programs and research projects. UBC's ambitious goals are for all students to have access to sustainability learning alongside their chosen degree program; to create diverse learning and co-curricular engagement opportunities for students; and to be global leaders in applied research on sustainable behaviour, infrastructure, and communities.

OPEN

New Centre for Climate Justice at UBC Vancouver

NEW!

Bachelor of Sustainability at UBC Okanagan

UBC

declared a Climate Emergency and committed to 9 areas in Task Force report

925

sustainability related courses across both campuses

48

climate change related courses at UBC Vancouver

393

faculty researching sustainability related topics at UBC Vancouver



Teaching and Learning

Each year, thousands of students learn about issues such as the climate emergency, biodiversity loss, unsustainable food systems, racial equity, and social justice through courses and programs offered by faculty from a variety of disciplines. To encourage students to explore sustainability, we curate and promote UBC's wide range of sustainability learning opportunities. And we catalyze teaching and curriculum innovation through grants, a fellowship program, and other resources.

UBC VANCOUVER

Sustainability Fellows pioneer Certificate in Climate Studies and Action

» Six interdisciplinary faculty teams advanced new sustainability education initiatives including a unique new Certificate in Climate Studies and Action that can be added to any UBC undergraduate degree, co-led by Dr. Tara Ivanochko (Faculty of Science) and Dr. Jessica Dempsey (Faculty of Arts).

» The Allard Law Executive Learning Program offers a novel framework for making business decisions — one that goes beyond “business as usual,” and considers human and Indigenous rights, climate change and anti-corruption laws and regulations that advance sustainability in the mining industry. Online instructor-supported format for industry professionals, offered in partnership with UBC Extended Learning.

» Curriculum now under development includes a virtual / augmented reality field trip focused

on climate justice within Indigenous territories, climate action through geomatics courses in Forestry, and new climate-focused content in medical, business, social work, and library courses.

UBC OKANAGAN

» A four-year direct-entry program that inspires students to address complex environmental challenges by integrating knowledge from different academic subjects, with hands-on and community-based learning. Students can choose from one of four concentrations: environmental analytics, environmental conservation and management, environmental humanities or green chemistry.

Offered by the Irving K. Barber Faculty of Science, Irving K. Barber Faculty of Arts and Social Sciences, and Faculty of Creative and Critical Studies.

Campus joins worldwide Climate / Justice Teach-In

» Students, faculty and staff came together for a dialogue on climate / justice and an introduction to the first ever UBC Okanagan Climate Action Plan, highlighting new targets to reduce operational emissions by 65% and emissions from food systems, waste & materials and commuting by 45% by 2030.

The teach-in event raised interconnected climate and justice issues, and featured over 20 faculty exploring related research in diverse disciplines. Feedback from participants indicated that their awareness of opportunities for climate action increased by 25% in food systems, 25% in waste and materials, and 19% in commuting.

FEATURE STORY

Nursing 290: Health impacts of climate change

Climate Education grants administered by the Sustainability Hub support faculty members to integrate new climate change course content, particularly in departments where climate change is not usually integrated into teaching and learning.

Ms. Raluca Radu, faculty lecturer in the Bachelor of Science in Nursing program, identified a knowledge gap related to the health impacts of climate change in a Canadian specific context, in particular learning grounded in a case-study pedagogical approach.

To support students with identifying the relationships between environmental changes and human health, Ms. Radu and a graduate student funded position developed new course content. The case study highlights local examples of how British Columbians are experiencing and responding to diverse climate change impacts, and supports students learning to apply an upstream, equity-based lens to these topics.

“The impact of this grant-funded project will be long-lasting, as it will allow students for years to come to learn about the intricate ways in which climate change affects human health in British Columbia, challenging them to engage with the topic through critical analysis and interdisciplinary collaboration.” - Raluca Radu.

VANCOUVER

\$109k

in funding to support climate and sustainability education

VANCOUVER

4,000+

students learning about climate in revised courses

VANCOUVER

779

sustainability-related courses

OKANAGAN

146

sustainability-related courses

Spotlight: Experiential and field-based teaching

UBC offers a variety of opportunities for undergraduate and graduate students to engage in sustainability learning and research through experiences offered outside the classroom. Experiential hands-on learning provides students with applied knowledge, and helps connect theory to practice in the field.

FEATURED COURSES AND PROGRAMS

ENVR 400: Community Project in Environmental Science » Students work in interdisciplinary teams to undertake a collaborative research project in this experiential course offered through the Department of Earth, Ocean and Atmospheric Sciences.

Through an instructor-guided collaboration between student teams and community partners, teams work together to articulate project questions and goals, devise methods, conduct research and communicate results. Based on field work and data collection, students learn to apply a subset of the major technical tools used in environmental science (e.g., models, statistical analysis, network monitoring, population surveys). Teams then communicate a coherent synthesis and analysis of environmental information, orally, graphically, and in writing, providing the community partner with applied knowledge and actionable ideas to pursue.

BIOL 371: Flora of British Columbia » A 10-day course held at UBC Okanagan, including daily field exercises that introduce students to the flora of BC, plant identification, and biogeoclimatic zones. The main aim is to equip students with an appreciation for and understanding of native vascular plant flora. Knowledge is developed through field excursions into as many habitats as possible, as well as through learning plant identification and herbarium processing skills.

Other aspects of the course include understanding the role of plants in our world, an overview of plant morphology, how to define habitats with respect to

their component plant species, the use of photography in botany, phytogeography, invasive plants, conservation, and a basic introduction to biogeoclimatic zones in British Columbia.

Collaborating with local partners develops complementary skills, and in some cases can produce immediate benefits to the community, academic and operational sustainability efforts, and contributes to enriched student, research and professional experiences.

GEOG/SUST 491: Rural Sustainability in Central Italy (UBC Okanagan) » Experiential 3-week course exploring the historic and contemporary connections between local food and wine and the tourism industry in the rural countryside of Tuscany. Within a framework of sustainability, students participate in local food and wine production and agritourism consumption.

This course fits with UBC's growing focus on sustainability and the international transferability of those concepts. Lessons from Tuscany, where traditional and typical food and wine systems have combined with tourism to sustain the rural countryside can inform local sustainability efforts in British Columbia.

ENVI551: Landscapes as Complex Social-Ecological Systems: Kluane Lake, Yukon (UBC Okanagan) » Prepares students to critically assess and analyze the challenges and opportunities related to sustainably managing human interactions with the environment at the landscape scale, within a diverse range of social, cultural, and economic contexts and in consideration of the inherent complexity of human-environment systems.

Using the Kluane Lake region, Yukon Territory as a study area, the program explores how historical and contemporary interactions between humans and the environment have shaped the present landscape.

The field component of the course covers present-day perspectives and visions of the landscape and use by different groups, as well as historical and contemporary natural resource management governance systems and approaches by First Nations, Parks Canada, and the territorial government.



FEATURE STORY

CELÁNENEL: A field course in the re-emergence of W SÁNEĆ law

Professor Robert YELKÁTTE Clifford of the Peter A. Allard School of Law, a member of the Tsawout First Nation – one of five communities that make up the W SÁNEĆ on Vancouver Island – is focused on the revitalization of Indigenous legal traditions, specifically as it relates to his own community of W SÁNEĆ.

“While my work speaks to the broader revitalization of Indigenous law, it has always been rooted in W SÁNEĆ and grounded by the teachings, responsibilities, and care taught to me by my family, as well as associated with the name I carry – YELKÁTTE,” explained Professor Clifford, whose name was passed on to him by his late grandfather, Dr. Earl Claxton Sr. (YELKÁTTE), a respected elder of the Tsawout First Nation.

Professor Clifford's innovative semester-long intensive field course provides students with the opportunity to engage as community-based learners. Students work directly with W SÁNEĆ elders and knowledge holders on projects such as place restoration and reclamation work, the creation of a W SÁNEĆ woman's land trust, a new W SÁNEĆ Southern Resident Killer Whale Guardian program, and a variety of other projects that seek to uphold W SÁNEĆ laws, interests, and responsibilities while also grappling with municipal, provincial and federal legal structures entangled with many of these initiatives. The field course advances seven different community projects per year in the spirit of service to the community. At the end of the course, students present and engage in discussions with one another and community members related to their eight-week placement experiences.

“I am interested in understanding W SÁNEĆ law and how it functions, on its own terms, as well as theorizing how the revitalization of W SÁNEĆ law can happen given the dynamics of colonialism and climate change,” said Professor Clifford. In addition, Professor Clifford also teaches Indigenous Law and Climate Change, Aboriginal & Treaty Rights, and Indigenous-Settler Legal Relations to JD students at UBC.

CELÁNENEL: A Field Course in the Re-emergence of W SÁNEĆ Law – offered in partnership with the W SÁNEĆ Nation and the University of Victoria, Faculty of Law – is an example of the important intersection between Indigenous rights and climate justice, and demonstrates the commitment in UBC's Climate Emergency Task Force report to supporting climate leadership and initiatives led by Indigenous, Black and People of Colour.

Climate Emergency Response

In response to the urgency of the global climate crisis and years of persistent student-led advocacy, UBC declared a Climate Emergency in 2019. Following a year of extensive community engagement, the UBC Board of Governors endorsed the Climate Emergency Task Force (CETF) final report and recommendations in February 2021 to advance justice-based climate action, equitable development, and resilient communities. A separate report on CETF Progress 2021-22 charts developments over the past year.

CETF Implementation Underway » While the implementation of the CETF report is a shared responsibility across UBC, the Sustainability Hub is responsible for coordinating and convening this work. Two new Senior Climate Emergency Co-Managers together with the whole team at the Sustainability Hub are collaborating with UBC's climate action leaders and many others to achieve greater impact.

Climate Emergency Fund inspires collective action » Grants from a \$1.5 million fund were awarded to seven projects based on student-chosen CETF priorities.

Centre for Climate Justice opens » An interdisciplinary initiative to advance transformative social, political, and economic changes necessary to address the climate crisis and other environmental injustices while advancing equity and addressing ongoing oppressions.

The Centre conducts collaborative, interdisciplinary, and community-engaged research across diverse knowledge systems and geographies to meet the demands for climate justice within and beyond UBC.

New applied research and teaching in the community »

As a result of the CETF report, additional activities by faculty and students to support climate action in the community include:

- A new 3-credit field course pilot, developed by Sustainability Fellows Dr. Rob Kozak and Dr. Stephen Sheppard, supports local residents and youth to design and install small climate action projects to tackle the climate emergency in their own neighbourhoods.

- 52 graduate students in the Sustainability Scholars Program delivered applied research projects supporting local municipalities to achieve their climate action goals.

Public engagement and outreach expands » Climate Emergency Response activities by the Sustainability Hub and many collaborators across UBC engaged student, faculty and staff audiences, in addition to national and international audiences.

- **Climate Justice Series** – A series of webinar, hybrid, and in-person public events to elevate climate justice literacy enjoyed by over 1,200 attendees.
- **UBC at COP26** – UBC's first open and transparent selection process for a limited number of observer badges for the United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP). From 72 applications, a selection committee agreed on a group of eight faculty, staff, and student delegates from a wide range of disciplines and backgrounds.
- **Association for the Advancement of Sustainability in Higher Education (AASHE) Webinar** – An interactive session to connect people from universities across North America on climate emergency activities.
- **Art and Advocacy** – Engaging an interdisciplinary cohort of scholars in climate story-telling during a weekend workshop by the UBC Climate Hub focused on the intersections between art, activism, and advocacy.
- **Climate Slamposium** – A student climate research slamposium featuring nine interdisciplinary graduate and undergraduate students sharing climate research in creative ways to over 80 attendees.

FEATURE STORY

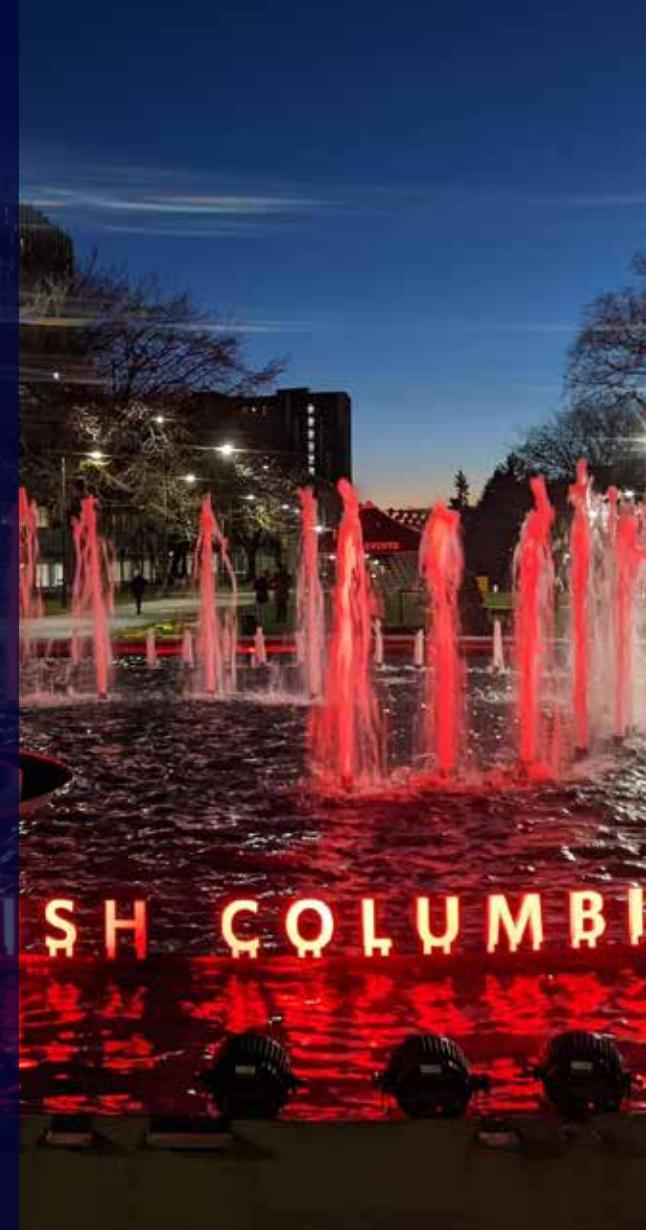
Climate Emergency Week

In the spirit of urgency, care, and community, the Sustainability Hub, Climate Hub, and Alma Mater Society (AMS) hosted a week of campus-wide engagement, action, and celebration events.

Lighting up Martha Piper Plaza fountain red for "Code Red" and #UBCClimateLove, over 1,000 students were engaged at outreach kiosks to promote a week of events including keynotes from Dr. Ingrid Waldron, HOPE Chair in Peace and Health in the Global Peace and Social Justice Program in the Faculty of Humanities at McMaster University, and Chief Dana Tizya-Tramm of Vuntut Gwitchin First Nation.

Panel and student engagement sessions included UBC administrative and student leaders, and openings and closings from x̣ẉṃə̣θ̣ḳẉə̣ỵəm Elder Larry Grant and knowledge keeper Victor Guerin. Student leaders Em Mittertreiner (Co-Student Director, UBC Climate Hub), Tashia Kootenayoo (President, Students' Union Okanagan of UBC), and Eshana Bhangu (VP Academic and University Affairs, AMS, and UBCV Student Senator) made impassioned pleas for full support of student initiatives and funding commitments on climate action.

Events throughout the week were made possible thanks to the generosity of our Host Nation the x̣ẉṃə̣θ̣ḳẉə̣ỵəm people, and funding from the Pacific Institute for Climate Solutions (PICS) and the UBC Wellbeing Strategic Initiatives Fund.



VANCOUVER

3,090

attendees at public climate education events

VANCOUVER

458

participants in climate action workshops

OKANAGAN

218

participants in Climate Action Plan 2030 engagement activities

OKANAGAN

100+

students, faculty and staff engaged at Climate Teach in Event



FEATURE STORY

Ripples of Transformation

The health and wellbeing of our planet is inherently linked to the availability of safe clean waters. And for Indigenous peoples, water has often been respected as a transformer: wielding the power to both harm and to heal. Many of the lessons for respecting the transformative power of water comes from stories, songs, prayers and ceremonies. These teach us ways for living and being in alignment with our more-than-human relations.

As a way to mark World Water Day and the connections between us – the Sustainability Hub and Centre for Sustainable Food Systems at UBC Farm invited guests from across the UBC community and our host Nation to the yurt at UBC Farm to collectively reflect on the songs and stories of transformation that will support the creation of new (and re-newed) pathways for sustainability and climate justice.

Three Indigenous scholars – Dr. Danielle Ignace, Dr. Shandin Pete, and Daqualama (Jocelyn Joe-Strack) – opened a circle in search of stories to help us restore and re-story our world and our relationships with it.

Dr. Shandin Pete, Assistant Professor, Earth, Oceans and Atmospheric Sciences, shared a story on learning, teaching, and growing in our role(s). Ending his story with a song from his people, Shandin explained that singing is a vital piece of data for understanding Indigenous land- and water-scapes.

Dr. Danielle Ignace, Assistant Professor, Forestry and Conservation Sciences, offered a reminder that we have everything we need inside of us. She reflected on the ability for a single seed to flourish with knowledge and information from its 'parents' and a nurturing environment, and the significance of water cursing through that growth.

Daqualama engaged the audiences in stories about answering the call from ancestors. From a story about a glacial lake in the Yukon from long ago, to one about visiting Kusawa Lake with her daughter, Daqualama illustrated her motivation to step forward in a way that honours the love for her people and her lands.

Participants in the circle spoke about their journey from head to heart, experience that drew attention to respecting multiple ways of knowing and being on the land, and the power of reconnection as climate action.

Sustainability Scholars Program

An innovative paid internship program that matches graduate students with on- and off-campus partners to work on applied research projects that advance sustainability. Projects explore topics such as emissions reduction, food security, sustainable transportation, green buildings, biodiversity, climate change, circular economy, and social sustainability.

Understanding Indigenous housing governance practices, principles, and policies

» Research that developed an open-access toolkit to serve First Nations across the Pacific Northwest as they navigate the creation and management of housing governance options for their communities. The toolkit includes an overview to better understand the housing system, a critical examination of why the current system does not work, and solutions for innovative community-centered housing governance models that are based in cultural wellbeing, economic security, and environmental sustainability.

Exploring project ownership models for renewable electricity generation in remote, Indigenous communities

» This project investigated different ownership models for renewable energy projects involving Indigenous communities in Canada. The ownership models are presented through case studies of past and current projects with the majority of cases focused on remote renewable energy projects. The report presents and explains different ownership models and their uses, and explores common themes important to the success of projects in partnership with a First Nation or Indigenous community.

Informing municipal progress on equity and social justice

» Over the past three years, the Sustainability Scholars program has added focus on addressing racial and social justice issues in tangible ways. Three of BC's largest cities have worked with Scholars to produce equity frameworks to mitigate the disproportionate climate impact on marginalized and vulnerable populations.

Building on work produced by Sustainability Scholars over the past 4 years, the City of Vancouver continues to develop and implement improvements to research related to 2SLGBTQQIA communities in ways that respond to decolonization, reconciliation and equity in research.

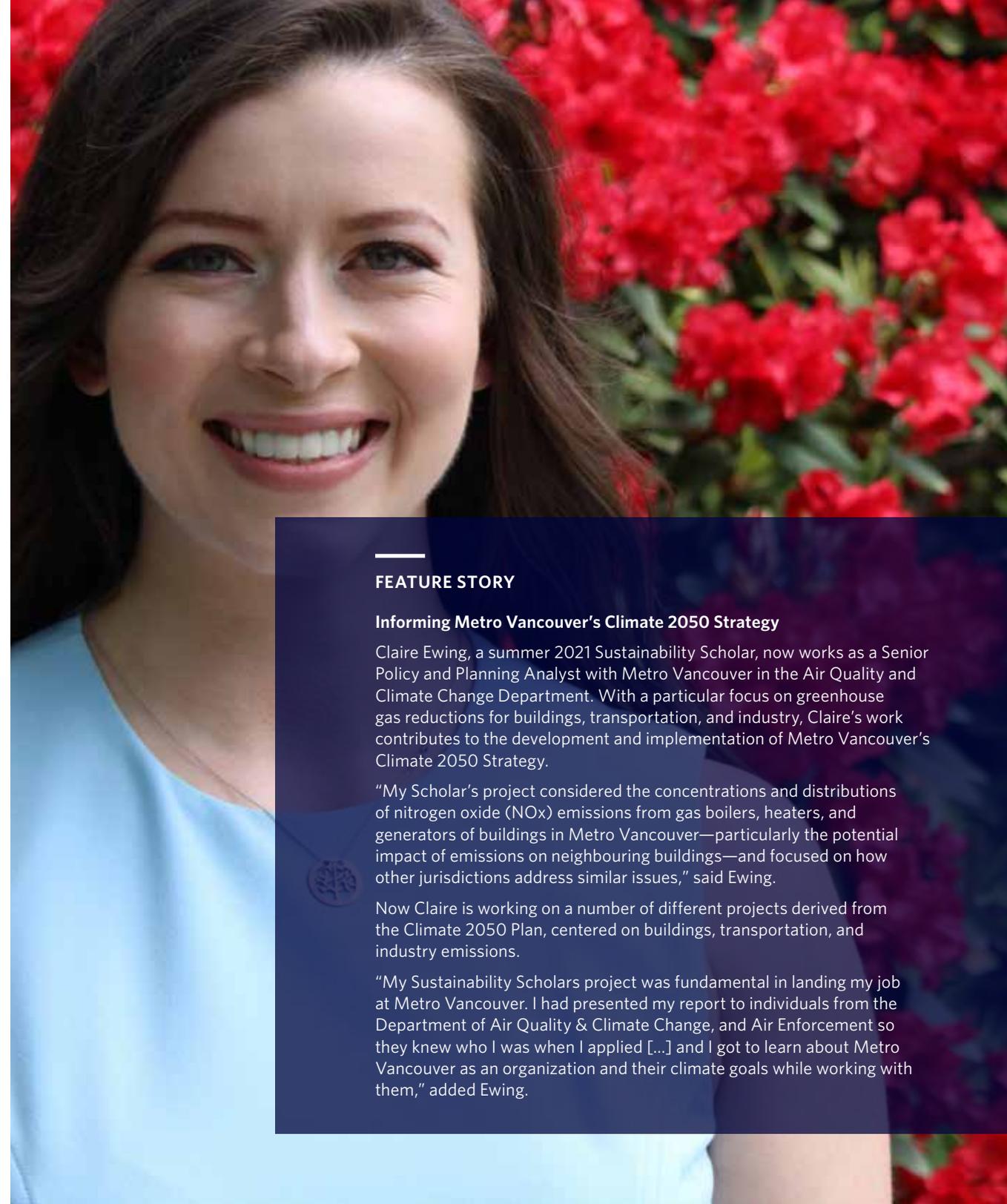
In New Westminster, Scholar's research is laying the foundation for a climate equity framework to guide municipal climate action and establish climate equity indicators. Energy poverty profiles for the City of Abbotsford and the District of Saanich will inform the development of new climate action plans and policies to reduce GHG emissions.

Accelerating Vancouver's economic transition to a zero-carbon future

» The Vancouver Economic Commission (VEC) was tasked by the City of Vancouver's Climate Emergency Action Plan to develop an economic plan that supports businesses and workers to successfully and prosperously decarbonize. A Scholar's research this year has directly informed VEC's response, most recently the Zero Emissions Economic Transition Plan (ZEETAP) - which includes implementing Scholar's recommendations to develop a regional Just Transition Council.



Sustainability Scholars reporting data represents the fiscal year 2021-22.



FEATURE STORY

Informing Metro Vancouver's Climate 2050 Strategy

Claire Ewing, a summer 2021 Sustainability Scholar, now works as a Senior Policy and Planning Analyst with Metro Vancouver in the Air Quality and Climate Change Department. With a particular focus on greenhouse gas reductions for buildings, transportation, and industry, Claire's work contributes to the development and implementation of Metro Vancouver's Climate 2050 Strategy.

"My Scholar's project considered the concentrations and distributions of nitrogen oxide (NOx) emissions from gas boilers, heaters, and generators of buildings in Metro Vancouver—particularly the potential impact of emissions on neighbouring buildings—and focused on how other jurisdictions address similar issues," said Ewing.

Now Claire is working on a number of different projects derived from the Climate 2050 Plan, centered on buildings, transportation, and industry emissions.

"My Sustainability Scholars project was fundamental in landing my job at Metro Vancouver. I had presented my report to individuals from the Department of Air Quality & Climate Change, and Air Enforcement so they knew who I was when I applied [...] and I got to learn about Metro Vancouver as an organization and their climate goals while working with them," added Ewing.

SEEDS Sustainability Program

Creates applied student-led research and interdisciplinary partnerships between students, faculty, staff and community. An internationally recognized Campus as Living Laboratory initiative, SEEDS helps advance UBC's sustainability and wellbeing commitments, supports the integration of academic and operational sustainability efforts, and contributes to enriched student, research and professional experiences through five research priorities representing key interconnected societal issues.

Campus research supports biodiversity, climate adaptation and resilience » Students from the Faculty of Forestry undertook a series of applied research projects aimed at increasing understanding of biodiversity at the UBC Vancouver Campus. Research resulted in the development of a new campus tree inventory database to classify and record the remaining campus urban forest. Additional student-led projects helped to improve the accuracy of the database, as well as incorporated biodiversity and social value data to inform the design and management of greenspaces.

UBC's first campus ecological connectivity map » In related research, students used climate and tree canopy cover data to model the relationship between climate change and urban forests in ways that can inform planning decisions related to climate adaptation and resilience, including the cooling effects of urban forests, while other teams completed research based on mycorrhizal fungal networks to assess the structural and functional connectivity of spaces, including ways and degrees to which spaces are connected or not,

and biodiversity levels in "green" spaces. Combined, these research projects resulted in the creation of UBC's first campus ecological connectivity map – a tool which can be used to improve structural and functional connectivity between campus green spaces.

The findings and deliverables will inform the future design and management of campus green spaces, including ways to preserve and enhance the diversity of ecological life on campus, as well as community climate adaptation and resilience.

Student-led research puts food systems at heart of climate action » A series of SEEDS student research and interdisciplinary collaborations directly informed commitments to reduce food system related emissions in UBC's new Climate Action Plan 2030 (CAP 2030).

Specifically, the Climate-Friendly Food System Action Team developed a target to achieve a 50% reduction in campus food systems emissions by 2030 vs. 2019, and seven supporting actions spanning climate change mitigation and adaptation.

Reducing Greenhouse Gas Emissions from UBC Intercampus Air Travel » To support UBC's net zero emissions targets at both campuses, research explored the behaviours and motivations of UBC staff and faculty who travel the intercampus corridor between Vancouver and Kelowna by air for university-related activities.

The study highlighted stakeholder's concerns about this issue which included climate impact, equity, social cues, productivity, accessibility, convenience/cost, networking, and technology challenges. Findings informed a CAP 2030 target to achieve a 50% reduction in business air emissions from pre COVID-19 levels by 2030, and included recommendations for a new UBC air travel policy.

VANCOUVER

19

UBC sustainability plans and policies advanced

VANCOUVER

739

students, faculty, staff and community partners engaged

VANCOUVER

104

applied research reports

VANCOUVER

7

knowledge mobilization and engagement events

SEEDS reporting data represents the academic year September 2021 to August 2022, not fiscal year 2021-22.



FEATURE STORY

Climate Friendly Food Label pilot launches

A SEEDS collaboration between students, faculty and staff resulted in UBC's first ever Climate-Friendly Food Label pilot. Launched to inform "climate-friendly" purchasing choices, the food labelling pilot features an innovative methodology to assess the GHG emissions, nitrogen and water use associated with over 1,600 campus menu items in order to indicate the climate-friendliness of meals.

The pilot also included an evaluation of consumer awareness, perceptions, and impact on knowledge and purchasing decisions, and work is ongoing to evaluate and optimize the labels based on customer feedback. Based on analysis of sales data and over 1,000 participant responses, results show that climate-friendly labelled "green" pizzas were chosen more, and that the majority of customers (84%) want to see the labels in all restaurants on campus.

According to Yu Luo, a PhD Candidate in the Department of Psychology who led the evaluation in Phases 1 and 2, food labelling shows significant potential.

"Given the positive evidence found in this project, it is promising that implementing the climate-friendly food system labels on campus can have a significant impact on lowering UBC's GHG emissions over the next 10 years to meet the target of achieving a 50% GHG emission reduction of food systems," said Luo.

Student Engagement

Student engagement is at the heart of sustainability learning at UBC. Through immersive, transformative, and experiential learning, our engagement programs provide opportunities to build leadership skills and professional competencies. Whether it's collaboration, connections, or peer mentoring, we offer diverse opportunities to meet a variety of student needs and interests.

Sustainability Ambassadors highlight climate justice, biodiversity, and waste issues » 25 Ambassadors from eight faculties and 21 different programs delivered events and programming including a hybrid online and in-person Sustainable Development Goals Week, a sustainability data visualization camp focused on waste and recycling, a social justice storybook website, and an educational video on climate change and biodiversity.

Workshops teach leadership skills to student groups across campus » The Sustainability Hub offered learning workshops and facilitated sessions to various communities on campus, including student residence, student groups, and student clubs. Topics included the Sustainable Development Goals; Power, Privilege and Sustainability; and Authentic Leadership in the context of Sustainability and Climate Anxiety.

Student Sustainability Council provides input on emerging plans » Leaders from 22 student groups gave input on eight staff-led projects and six student led-projects, including UBC's emerging new Zero Waste Action Plan and a student-led effort to implement a new textile collection and recycling service.

IBPOC student consultation informs new programming » In-person consultations and surveys with campus community members. The key outcomes and recommendations from this report will inform new engagement actions by the Sustainability Hub.

UBCO Go Global Sustainable Travel Seminars » New seminar series for students planning to study abroad, including focus on housing, wellness and sustainable travel. Students travelling abroad, or international students traveling to UBCO, have the option to calculate greenhouse gas emissions related to their travel and opt into carbon offset projects (e.g. investments in biomass as an energy source).



FEATURE STORY

Climate and Collective Liberation Project » Michelle Xie is an undergraduate sociology student, Sustainability Ambassador, and community organizer of Chinese descent who was born and raised on the traditional territories of the x̱məθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətaʔt (Tsleil-Waututh) peoples. As a young racialized and disabled woman, her perspectives are shaped by the intergenerational legacies of colonialism, war, and oppression she has witnessed within her communities.

As part of a team of three Sustainability Ambassadors, Michelle developed an online community resource for climate justice and collective liberation. Each section of this resource includes a research, storytelling, and action component, and offers a starting point to explore what it really means to say, 'climate justice is social justice.'

"Sarnia, in Ontario, which has been dubbed Cancer Valley, is home to one of the world's largest toxic waste sites and responsible for 40% of Canada's chemical industry. It's concentrated within this one area that's very close to racialized and indigenous communities.

We are bringing attention to the issue, and doing so in a way that relates to storytelling and the power that people's experience has in communicating things beyond statistics and news headlines to make things more real and more pressing." - Michelle Xie, Sustainability Ambassador.

Student Leadership

UBC students are leading change across our campus, and in our communities. By self-organizing and speaking out, student groups take the initiative to spark meaningful conversations - often about what UBC itself can do differently. Addressing issues like the climate crisis, social and racial justice, student wellness and more, student leaders at UBC are making a positive contribution to sustainability.

AMS opens new sustainability space in the LIFE Building » Features a dashboard of AMS environmental metrics, sustainability-related books, and furniture created from recycled chopsticks from a campus cafe.

Climate Cafés build community, connection, and hope around climate change » Safe spaces for students to have conversations about how they are experiencing climate change, and to share uncertainties. Hosted by the Sustainability Hub, UBC Climate Hub, and AMS.

Climate Ambassadors engage 900 school students » High school youth mentored by UBC Climate Hub delivered climate education workshops in 15 schools across BC, Alberta, and Ontario, reaching 900 pupils ranging from grade five to grade 12.

Climate Engagement Wellbeing Network expands » UBC Climate Hub offered 10 workshops to eight different departments and organizations including UBC Counselling, UBC Geography, and Parks Canada.

Student experts deliver new lectures through Climate Teaching Connector » Climate expert students delivered 31 guest lectures to more than 1,700 students across 18 UBC Vancouver and Okanagan departments, with positive feedback from instructors and students.

VANCOUVER

1,700

students received climate education through Climate Teaching Connector

VANCOUVER

900

school-age children taught by student Climate Ambassadors



FEATURE STORY

Climate Emergency Town Hall attracts community leaders » With momentum for climate action growing across UBC and beyond, a spontaneous emergency town hall asked, "With BC on the frontlines of climate breakdown and fossil fuel extraction, how do we keep us safe?" "What justice-based plans will shift us into emergency footing?"

Community leaders gathered at the AMS Nest at an event organized by the Centre for Climate Justice, student-group Climate Justice UBC, and the UBC Climate Hub. Guest speakers included Anjali Appadurai (Sierra Club BC), Avi Lewis (UBC Department of Geography), Naomi Klein (Centre for Climate Justice), Kanahus Manuel (Secwepemc / Ktunaxa / Indigenous Land Defender), Kai Nagata (Dogwood Initiative), and Chief Ninawa Huni Kui (President of the Federation of the Huni Kui people in Acre, Brazil).

"It's so important, in the midst of escalating climate crises, to be able to come together as a community and process it all. We hosted the town hall as a space for the community to process the devastating floods and violent attacks on Wet'suwet'en in light of the climate crisis. But we also hosted it as a way to find hope in our power. UBC as an institution has so much power - in its research capacity, in its funds, and in its social reach - to address the climate emergency, and this town hall gave us direction in how we can use it. I'm really grateful for the support of the Sustainability Hub in making this event, and student-led community events like it, a reality." - Anna Brookes, Climate Justice UBC

Campus Engagement

Engagement programs for students, staff, and faculty support the implementation of UBC's climate action and sustainability plans, and help advance a culture of sustainability. Our goal is to inspire and mobilize campus community members in order to build a resilient, interconnected community that is empowered to take climate action and create a more sustainable campus and world.

New and expanded programs to reduce emissions from commuting, food, waste, and business air travel »

For the first time, UBC's Climate Action Plan 2030 explicitly commits to reducing emissions from extended impact emission sources where UBC has indirect influence and control — these include emissions from UBC-related commuting, food systems, waste and materials and business air travel.

Supporting the campus community to achieve these reductions involves the creation of new – and expansion of existing – engagement programs, campaigns and resources to build capacity and strengthen networks of sustainability champions on campus. CAP 2030 engagement in Vancouver (764 participants) and in the Okanagan (218 participants) is fundamental to guiding this work.

UBC Reads Sustainability – free public events draw 300+ »

The Sustainability Hub organized free public events with authors in partnership with on-campus groups including the Morris and Helen Belkin Art Gallery, Centre for Community Engaged Learning, and Pacific Institute for Climate Solutions.

Readings from high profile authors included Dallas Hunt *Creeland*, and Aja Barber *Consumed*, and were enjoyed by over 300 attendees.

Training, funding and competitions for community members returning to campus » Activities to enhance campus sustainability this year included:

- Supporting over 100 Sustainability Coordinators from 67 departments, units and laboratories to promote sustainable practices and behaviours in the workplace
- Workplace Sustainability Grants to sustainable innovations in five departments, including the UBC

Library, Centre for Blood Research/OBMS, Go Global and the Office of the Vice Provost International, the School of Information, and Department of Asian Studies

- The relaunch of the Zero Waste Squad – a peer-to-peer student engagement program supporting waste reduction and the circular economy – included training 34 new members and a total of 279 volunteer hours contributed towards engaging the campus community about zero waste
- The Shut the Sash competition engaged labs in Chemistry D and E over six weeks to determine who could conserve the most energy from shutting fume hood sashes – saving an estimated 98,000 kWh
- A Green Labs Fund award to a lab in the Department of Cellular and Physiological Sciences to design, build and test a multi-nozzle cleaning system to clean plastic drosophila (fruit fly) vials, avoiding single use options
- An update to UBC Okanagan Undergraduate Chemistry curriculum to reduce hazardous waste from experiments with the use of simulations, apps and videos, funded by Green Labs
- The Amber Glass Recycling Program diverted approximately 3,000 kg lab glass from landfills
- Relunched in early 2021, the Lab Plastics Recycling Program engaged an additional 23 new labs this year
- Nitrile Glove Recycling Program collected over 450kg of gloves for recycling
- A Green Labs funded new Atomic Absorption Spectrometer in the Chemistry Department at UBC Okanagan saved 30% energy cost savings, reduced inputs and waste
- The Ice Pack Donation Program diverted over 5,000 ice packs from landfill through collaboration between the Life Sciences Centre, and local grocers Spud

The Power of You (Okanagan) » UBC Okanagan's behaviour change program, The Power of You, offered virtual and on-campus initiatives with a focus on energy conservation and sustainable, active modes of transportation. Engagement activities this year included:

- The 2nd Annual Shut the Sash Challenge saved 33,031 kWh, 123 GJ and 7.5 tCO₂e in energy and emissions, and engaged over 40 students
- A building audit resulted in over 1,735 lights and 10 projectors/ screens being turned off or powered down to conserve energy

FEATURE STORY

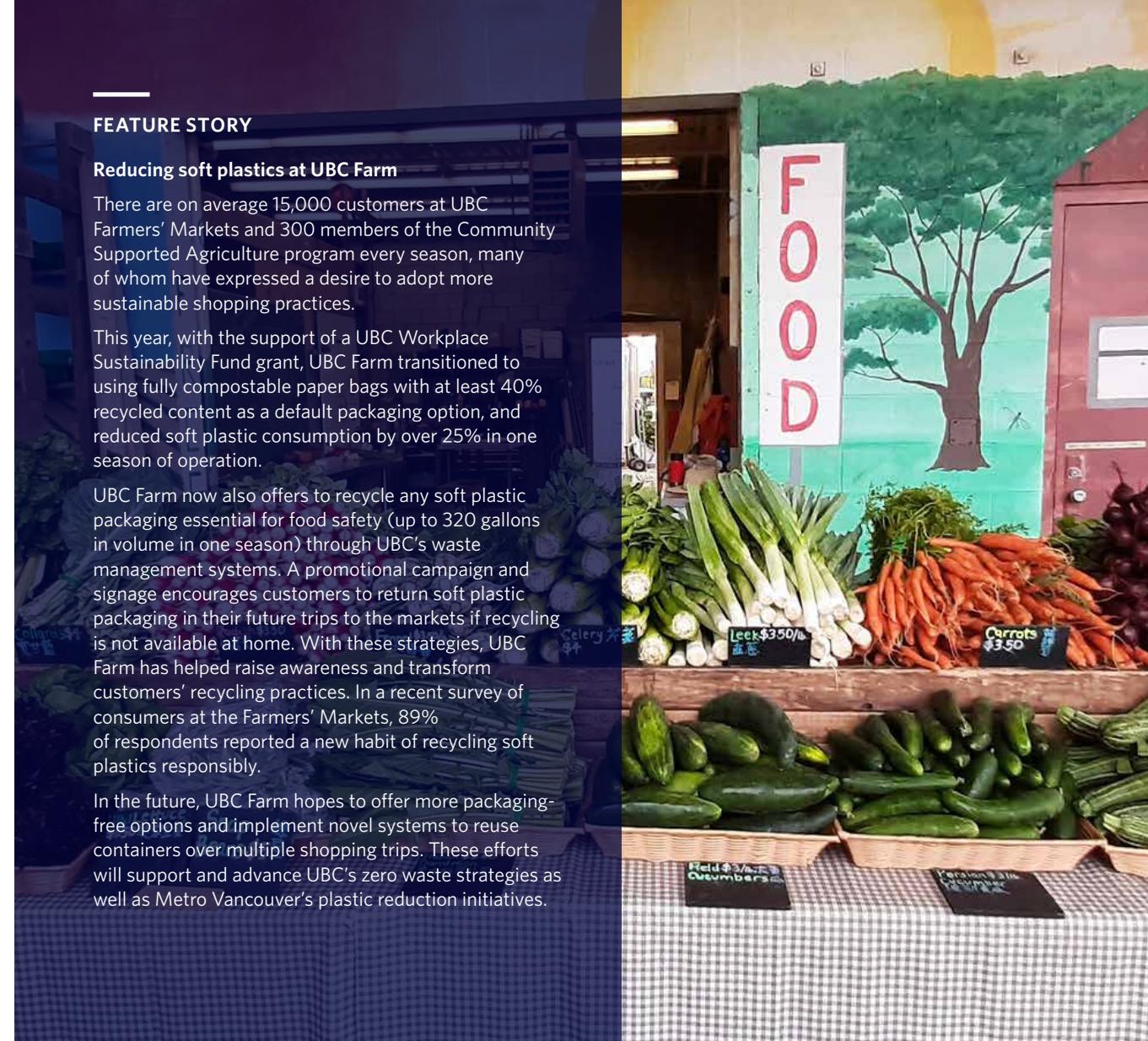
Reducing soft plastics at UBC Farm

There are on average 15,000 customers at UBC Farmers' Markets and 300 members of the Community Supported Agriculture program every season, many of whom have expressed a desire to adopt more sustainable shopping practices.

This year, with the support of a UBC Workplace Sustainability Fund grant, UBC Farm transitioned to using fully compostable paper bags with at least 40% recycled content as a default packaging option, and reduced soft plastic consumption by over 25% in one season of operation.

UBC Farm now also offers to recycle any soft plastic packaging essential for food safety (up to 320 gallons in volume in one season) through UBC's waste management systems. A promotional campaign and signage encourages customers to return soft plastic packaging in their future trips to the markets if recycling is not available at home. With these strategies, UBC Farm has helped raise awareness and transform customers' recycling practices. In a recent survey of consumers at the Farmers' Markets, 89% of respondents reported a new habit of recycling soft plastics responsibly.

In the future, UBC Farm hopes to offer more packaging-free options and implement novel systems to reuse containers over multiple shopping trips. These efforts will support and advance UBC's zero waste strategies as well as Metro Vancouver's plastic reduction initiatives.



VANCOUVER

67

operational and academic departments engaged over fiscal year

VANCOUVER

104

Sustainability Coordinators in offices and labs

VANCOUVER

72

homes worth of energy savings via Shut The Sash Competition

OKANAGAN

32,420

'Lights Off' during campaign since 2015

Research

UBC plays a leadership role among global post-secondary institutions that focus on researching, developing, and demonstrating sustainable practices. With over 400 faculty across two main campuses investigating sustainability, our goal is to excel across the spectrum of fundamental and applied research. The following pages include some examples of new groups and projects – just a small selection from an incredible breadth of work across the university.

UBC Climate Change Research Symposium » A 2-day symposium organized by a Task Group convened by UBC's Office of the Vice-President, Research and Innovation, that brought together, virtually, climate researchers from multiple faculties at UBCV and UBCO, to promote connectivity between clusters of relevant research. Featuring panel discussions and keynote speakers, the symposium helped make connections between clusters and enhance the potential of UBC researchers to impact climate change through research and innovation.

Featured Research Groups

UBC VANCOUVER

Biodiversity Research Cluster » Comprised of over 70 faculty and post-docs drawn from a broad variety of disciplines, this research cluster will identify global change impacts on biodiversity and suggest ways in which such changes can be ameliorated. An interconnected and interdisciplinary cluster, research covers diverse topics including marine ecology, evolutionary genetics, farming systems, food sovereignty, applied ethics, forestry, plant-insect interactions, fisheries sciences, and many more.

Diversified Agroecosystems Research Cluster » Aims to leverage research excellence at the Centre for Sustainable Food Systems and global partners to evaluate diversified agroecosystems. Using ecological and systems analysis perspectives for integrated research on bioenergy, water resources, and food production, members work to maximize crop yields,

improve soil quality and biodiversity, and minimize nutrient losses to the environment.

Public Humanities Hub » Established to foster, support and highlight public-facing collaborative research in the humanities in arts, law, and education. Through research cluster funding, seed grants, a speaker series, public scholarship programming, and networking opportunities, the Public Humanities Hub offers support for UBC scholars and external partners to mobilize knowledge in order to address the environmental issues of today.

Urban Forestry Hub » An interdisciplinary and applied approach to understanding the social, biophysical and technological aspects of urban forestry. Urban Forestry Hub members partner with non-academic agencies, organizations and communities to inform policy and practice; and consider the relationships between all human and non-human nature, regardless of social, physical, intellectual or sensory conditions.

UBC OKANAGAN

Plastic Recycling Research Cluster » Undertaking highly collaborative research to explore and address the issue of plastic waste from different technological, environmental, management, social and policy-making perspectives in British Columbia and beyond. This research cluster encompasses an interdisciplinary team of researchers from engineering, management, creative and critical studies, and psychology, who are working with industrial partners and municipal and federal government to manage plastic waste systematically.

Urban Indigenous Wellbeing Cluster » Responding to urban Indigenous community needs through a holistic approach to spiritual, mental, emotional and physical health. The Urban Indigenous Wellbeing Cluster is an interdisciplinary research collective of Elders, Community Members, partner organizations, and Indigenous and settler researchers and trainees. Team members have experience and expertise in community-led Indigenous research methodologies, Indigenous health, health promotion, identity and belonging, cultural safety, land-based healing, population health, geography, creative practices, occupational therapy, and mental wellness.

Featured Program

Campus as a Living Lab » As a public university, UBC has both a commitment and responsibility to leverage our academic and operational capabilities to respond to global challenges like climate change and the biodiversity crises.

The Campus as a Living Lab (CLL) program provides a collaborative framework for researchers, students, staff and external partners to use our campus to explore, develop and test new ideas, and share the knowledge and learning gained from these experiences for public benefit.

This year the Sustainability Hub managed the second annual CLL Fund Competition – an opportunity that provides seed funding for collaborative applied 'living lab' research projects on UBC's Vancouver campus. Projects must provide both research opportunities and operational benefits, be led by a faculty and staff team, demonstrate innovation, and respond to a sustainability challenge. Four new CLL projects were awarded funding through the competition in 2021.

The UBC E-Kitchen – The Repair and Reuse of Electronics at UBC to support the transition to a circular economy with reduced impacts on climate and the environment.

- Dr. Milind Kandlikar, Professor & Director, Institute For Resources, Environment & Sustainability
- Bud Fraser, Senior Planning & Sustainability Engineer, Campus + Community Planning
- Dr. Sathish Gopalakrishnan, Associate Professor, Electrical & Computer Engineering

Designing Student-Family Housing For Wellbeing – Research-based design charrettes involve residents in identifying the characteristics and qualities that make Acadia Park a successful community.

- Dr. Inge Roecker, Associate Professor, School Of Architecture And Landscape Architecture
- Andrew Parr, Associate Vice-President, Student Housing And Community Services
- Dr. Alina Mckay, Post-Doctoral, Researcher, Sociology

Digital Detection Web For On-Campus Insects – Integration of remote sensing, machine learning and the Internet of Things to improve insect monitoring and tracking as indicators of climate change and biodiversity impacts

- Dr. Juli Carrillo, Assistant Professor, Faculty Of Land And Food Systems
- Clare Cullen, Operations Director, Centre For Sustainable Food Systems, UBC Farm
- Dr. Quentin Geissmann & Dr. Pierre Girod, Postdoctoral Research Fellows, Microbiology & Immunology, Land & Food Systems

Nutrients, Energy, And Water Resource Recovery – A state-of-the art research and teaching facility to advance the development of sustainable technologies that 'close the loop' on carbon, nutrients, and water in an urban campus context.

- Dr. Ryan Ziels, Assistant Professor, Civil Engineering
- Jake Li, Green Infrastructure Engineer, Campus + Community Planning

VANCOUVER

393

faculty researching sustainability-related topics

VANCOUVER

66%

of departments have faculty researching sustainability-related topics

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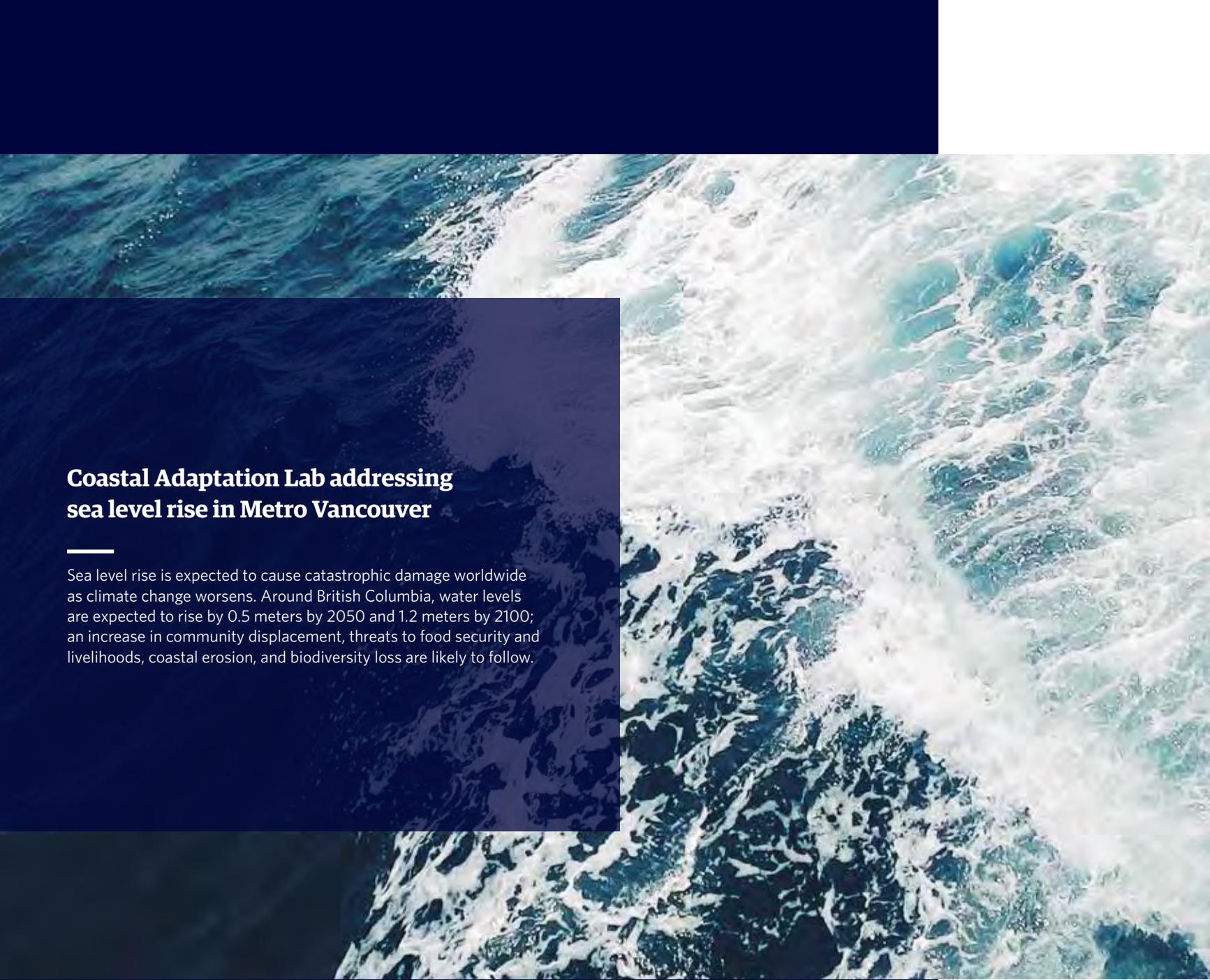
166

research groups exploring sustainability-related issues

VANCOUVER OKANAGAN

89.2

average score for research contribution to advancing the SDGs (THEUIR, 2022)



Coastal Adaptation Lab addressing sea level rise in Metro Vancouver

Sea level rise is expected to cause catastrophic damage worldwide as climate change worsens. Around British Columbia, water levels are expected to rise by 0.5 meters by 2050 and 1.2 meters by 2100; an increase in community displacement, threats to food security and livelihoods, coastal erosion, and biodiversity loss are likely to follow.

UBC's Coastal Adaptation Lab (CAL) aims to develop novel planning, design, and policy solutions for coastal adaptation based on the co-production of knowledge among researchers, decision-makers, and Indigenous communities. The lab integrates research areas including 1) critical infrastructures; 2) coastal habitat squeeze, 3) nature-based solutions, and 4) managed retreat, all within the overarching envelope of climate and spatial justice.

The Fraser River Delta, in particular, is a region where sea level rise could have severe consequences. The delta is home to an ever-growing human population of nearly 3 million, it hosts critical habitats for marine life and migratory birds, and has emerged as a key economic and logistical location within the Pacific Rim. A recent CAL initiative, known as the Fraser River Delta Collaborative, investigating the impacts of sea level rise in the area found that a single flood event could cause \$20 billion in economic loss, and put over 100 species at risk of extinction. The team, consisting of the Coastal Adaptation Lab and four Vancouver-based landscape architecture firms, analyzed how designers can support planners and policymakers and found that coastal adaptation will require both large-scale and localized planning and design efforts for both the short and long term.

Other UBC CAL projects include Clam Gardens, the Future of False Creek, Visualizing the Future Port of Vancouver, and the Living with Water project. The latter, supported by a \$1 million, four-year grant from the Pacific Institute for Climate Solutions, seeks to identify coastal erosion mitigation strategies by drawing on global case studies and conducting experiments along coastal sites at UBC's point Grey Campus.

"Coastal ecosystems such as wetlands and salt marshes provide natural buffers against waves and flooding, provide habitat for keystone species, and support coastal livelihoods. We need to develop frameworks to help coastal communities understand and evaluate the trade-offs associated with adapting in place (reinforcing/protecting existing shorelines), accommodating water or making a strategic retreat to higher grounds." Dr. Kees Lokman, professor in the School of Architecture and Landscape Architecture, and director of the UBC Coastal Adaptation Lab.



Canada Climate Law Initiative advises business and government leaders on climate change risks

For many organizations, responding to climate change requires an in-depth understanding of Canadian and international policies in order to meet the obligations of a dynamic regulatory environment.

In support, researchers at the Canada Climate Law Initiative (CCLI) and affiliated scholars generate interdisciplinary knowledge and provide accessible guidance through presentations on climate governance, conservation finance and management, corporate law and governance, Indigenous partnerships in sustainable business, and advancing a green recovery and circular economy.

Led by principal investigators Dr. Janis Sarra, Dr. Carol Liao and Terri-Lynn Williams-Davidson from the Peter A. Allard School of Law, and Professor Cynthia Williams and Dr. Barnali Choudhury from the Osgoode Hall Law School, York University, CCLI also makes recommendations to regulators and governments at the provincial and federal levels: for example consultation on Bill C-97 – amendments to the Canadian Business Corporations Act in March 2021.



LiteFarm application supports sustainable farming in 120+ countries

LiteFarm is a community-driven, free, not-for-profit, and open-access software application from UBC's Centre for Sustainable Food Systems (CSFS) that brings scientists and farmers together to address issues related to climate change, biodiversity decline, and the production of healthy and nutritious food.

The application was co-created by a coalition of researchers, farmers, designers, developers, and students at UBC as part of the Diversified Agroecosystem Research Cluster. Features include an ever-expanding crop catalog that provides farmers useful data, an organizer that helps farmers plan crop management at a day-to-day level, and a documentation generator that helps streamline the organic certification process.

Now used in 120+ countries, at 2,200+ farms, and by 2,600+ users, the app is built to both help individual farmers with their day-to-day operations, and to support the wider farming community by identifying more sustainable farm management practices.



Wine Research Centre supporting a healthy Canadian viticulture industry

How can wine production become more sustainable as climate change-related heatwaves and droughts intensify?

The UBC Wine Research Centre (WRC) supports Canadian winegrowers through cutting-edge research in enology, viticulture, management, and social sciences, combined with extended industry education and community engagement on climate change and other related issues.

Dr. Simone Castellarin, Associate Professor in the Faculty of Land and Food Systems and Associate Director of the WRC explains. "Irrigation is needed in many vineyards and is one of the strategies we have to mitigate the effects of heatwaves. But it uses freshwater – a vital resource. So the focus of my laboratory is to study how we can maintain the plant under what we call a regulated water deficit, in order to save water, but also to improve the quality of the fruit."

With grape production set to expand in BC, the careful use of irrigation as well as the adoption of new practices to manage soils and canopies will support a sustainable future for the industry.



Insect forecasting used to pilot pest alerts for growers in Vancouver

Advanced monitoring of insects is a relatively new technology. Entomologists traditionally catch insects in traps, then count and identify them by hand, which is time consuming and doesn't allow for real-time monitoring.

Now researchers are setting up 60-70 unique cameras - known as Sticky Pi - that combine optics and a sticky trap. They catch bugs and record images of them. Computers then use artificial intelligence to determine exactly what the insects are, and where and when they were trapped in real-time.

"By creating real-time data for the public, UBC will serve as an early alert system for monitoring insects pests – these maps and pest alerts will be communicated to growers and other agricultural stakeholders across Canada." Dr. Quentin Geissmann, postdoctoral research fellow in microbiology and immunology and the faculty of land and food systems, and co-lead of the Sticky Pi project.

Researchers plan to deploy the camera system across Vancouver in 2023.



Generating sustainable chemical fuels from sunlight for a Net Zero future

Inspired by natural photosynthesis, a team of researchers hope to develop low-cost semiconductors to produce hydrogen as a chemical fuel from water and sunlight. This artificial photosynthetic process – known as photocatalytic water splitting – offers a way to harness solar energy in chemical bonds, making storage and handling simple in comparison to traditional photovoltaic solar cells.

SolarSpec, a research lab at UBC Okanagan led by Dr. Robert Godin, aims to understand the photophysical and photochemical processes that dictate the efficiency of solar fuel producing systems. The team uses advanced time-resolved optical spectroscopy techniques that investigate the influence of key physical and chemical parameters, and using that knowledge, aim to optimize material synthesis.

The development and commercial viability of sustainable solar fuel production is critical to reduce emissions in hard to decarbonize sectors that still rely on fossil fuels, such as agriculture, aviation, and shipping.

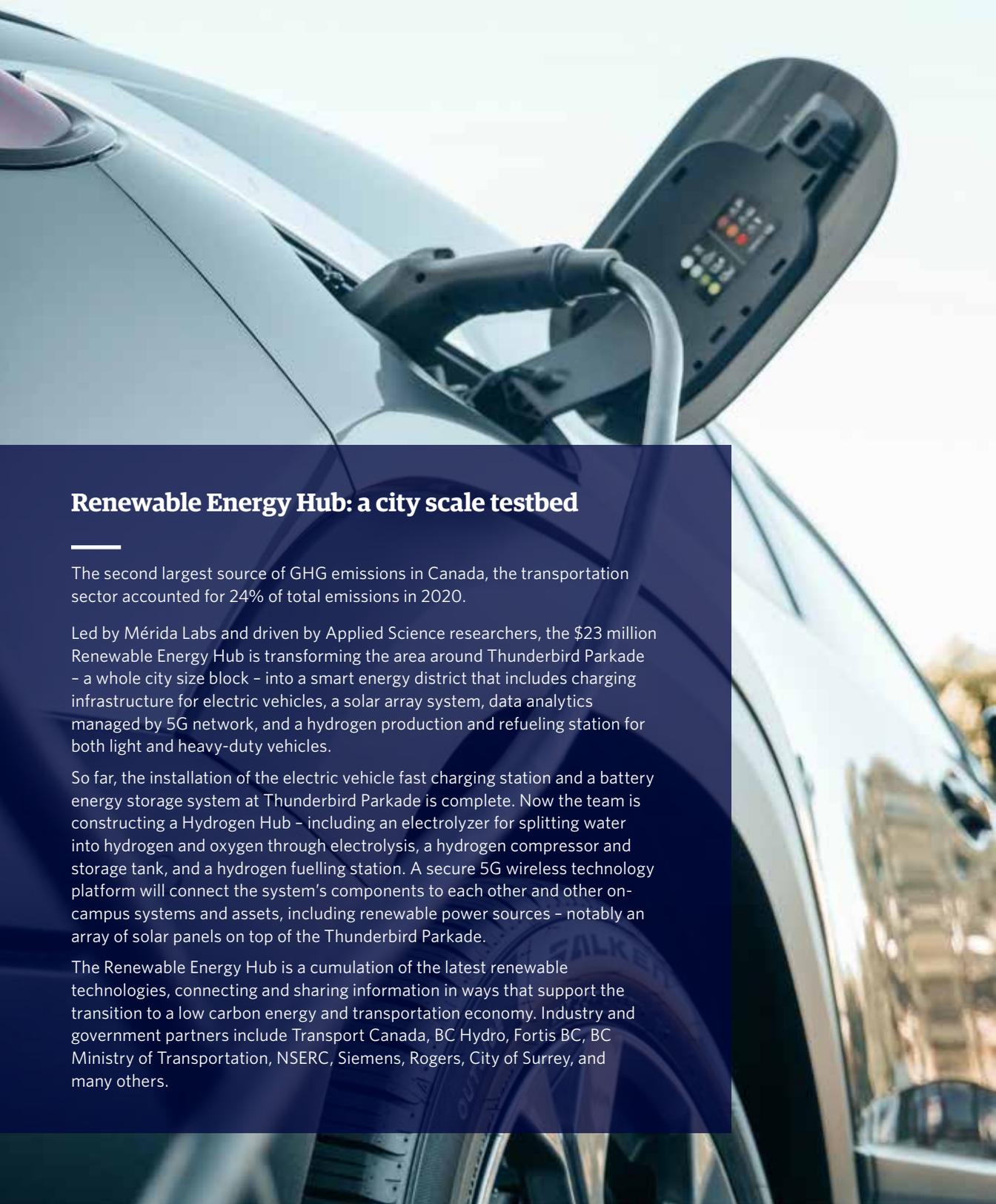


Improving the use of life cycle assessments (LCA) for quantifying embodied carbon

Embodied carbon refers to the GHG emissions attributed to materials throughout their entire life cycle – from extraction to end of life. As emissions from buildings' operational energy consumption falls, embodied emissions from construction materials are becoming more significant, however the industry lacks a standardized methodology to account for them.

To address this gap, the Urban Innovation Research team at the Sustainability Hub has completed a multiyear study, including 17 LCA assessments using a variety of data sources and tools on 11 buildings. The results will help establish consistent and reliable industry practice, and have the potential to inform policy on embodied carbon.

The team worked closely with key organizations with expertise on LCA and embodied carbon: partners including Athena Sustainable Materials Institute, Zero Emissions Building Exchange (ZEBx), the National Research Council Canada (NRC) (specifically through the LCA² initiative), UBC's Campus + Community Planning department, and the City of Vancouver.



Renewable Energy Hub: a city scale testbed

The second largest source of GHG emissions in Canada, the transportation sector accounted for 24% of total emissions in 2020.

Led by Mérida Labs and driven by Applied Science researchers, the \$23 million Renewable Energy Hub is transforming the area around Thunderbird Parkade – a whole city size block – into a smart energy district that includes charging infrastructure for electric vehicles, a solar array system, data analytics managed by 5G network, and a hydrogen production and refueling station for both light and heavy-duty vehicles.

So far, the installation of the electric vehicle fast charging station and a battery energy storage system at Thunderbird Parkade is complete. Now the team is constructing a Hydrogen Hub – including an electrolyzer for splitting water into hydrogen and oxygen through electrolysis, a hydrogen compressor and storage tank, and a hydrogen fuelling station. A secure 5G wireless technology platform will connect the system's components to each other and other on-campus systems and assets, including renewable power sources – notably an array of solar panels on top of the Thunderbird Parkade.

The Renewable Energy Hub is a cumulation of the latest renewable technologies, connecting and sharing information in ways that support the transition to a low carbon energy and transportation economy. Industry and government partners include Transport Canada, BC Hydro, Fortis BC, BC Ministry of Transportation, NSERC, Siemens, Rogers, City of Surrey, and many others.



\$1.9 million investment in Cleantech Hub to repurpose waste materials

In January 2021, Western Economic Diversification Canada announced \$1.9 million in funding to establish a state-of-the-art research facility at UBC Okanagan. The Cleantech Hub, led by Dr. Lukas Bichler, will advance clean technologies that convert industrial by-products into high-quality components and new sustainable products.

Researchers will work with manufacturing, mining and lumber companies in Western Canada to measure the structure, purity, high-temperature behavior and thermo-electric properties of materials. This understanding is key to developing new procedures and manufacturing techniques that enable materials originating from recycling, waste and by-product streams to be repurposed as high-value commodities. In one example, the carbon collected during the recycling process of heavy industry vehicle tires will be converted into battery electrodes to power electric vehicles.

This project will also support the creation of jobs that are inclusive to women, youth and Indigenous peoples through culturally appropriate recruitment and local community outreach activities.



Mining Microbiome Analysis Platform: a genetic database for sustainable mining

Demand is increasing rapidly for the minerals and metals that are the foundation for renewable energy generation, storage and broader use.

The Mining Microbiome Analysis Platform (MMAP), led by Teck Resources in partnership with UBC and Canada's Digital Technology Supercluster, aims to support more sustainable growth by creating the first integrative platform for collecting, storing, and analyzing the genomic data of water, soil and rock environments. Collecting samples from more than 15,000 mining sites, a microbes and geochemical online data library will be built over the next 2 years as scientists extract DNA from mining-site samples and identify microbes that can be used to implement microbial-based resource extraction and new mine-site bioremediation processes.

In the future, MMAP will enable Canadian and international mining companies to implement sustainable mining practices on a global scale, by replacing energy and chemical-intense resource extraction methods, and by improving the cleanup techniques used at mining sites.



Drones deliver more equitable healthcare to rural and remote Indigenous communities

A demonstration project uses drones to carry healthcare supplies and medications between the Village of Fraser Lake and Stellat'en First Nation and is acquiring accreditation to transport laboratory samples.

Currently, health care delivery requires the patient to travel to access care. Whereas, drones, along with virtual care, can provide timely health services to individuals so they can thrive in their homes and only travel as required. The project navigates the 'how tos' of integrating new technology into the local and regional health ecosystem, and supports the key partnerships and engagement activities necessary to promote implementation success.

The initiative was established by the UBC Faculty of Medicine, and the study is conducted in partnership with the local host communities and local and regional health system partners including First Nations Health Authority, the Rural Coordination Centre of BC, LifeLabs, Carrier Sekani Family Services, Village of Fraser Lake, Stellat'en First Nation.



FEELed Lab research community supports feminist environmental humanities

The FEELed Lab is a feminist environmental humanities field research lab located on unceded Syilx territory in Kelowna, BC, with the goal of creating a hub for researchers, students and community members who share common interests in environment and sustainability issues, specifically from feminist, queer, anti-colonial and disability justice perspectives.

Sustainability issues are also social justice issues. The FEELed Lab supports critical, creative and collaborative research to explore these connections in the Okanagan watershed and beyond.

Early areas of focus for the FEELed Lab include building community, both online and in person. For example, Littoral Listening is a monthly online reading group that encourages collective discussion on environmental issues and seeks to build accessible communities of care. In 2022, the FEELed Lab also hosted the first annual Feminist Environmental Humanities summer symposium on the topic of “Listening, Attuning.” This was an intimate, accessible eight-day online intensive for emerging researchers from nine different countries.

In person research events included the monthly Fringe Natures events, which are small-scale, COVID-safe outdoor gatherings. Cultivating a DIY “make-do” vibe, these events use informal conversation, “low stakes” activities and embodied practice (walking, listening, improv, weeding, writing haikus, games) to deepen collective understanding about the intersection of environment and social justice questions. In 2022 the FEELed Lab also convened a Traditional Knowledge/ Land Use Circle featuring a Syilx traditional plant use workshop guided by elders Pamela and Grouse Barnes. Another key event was the Fire and Water symposium – a full day public gathering showcasing Syilx and settler-migrant writers and artists who use arts-based practices and storytelling to explore urgent ecological issues from feminist, anticolonial and antiracist perspectives.

Many FEELed Lab events such as these take place at the Woodhaven Eco Culture Centre. For FEELed Lab researchers, understanding their responsibilities to this specific place –part of a compromised watershed at the edge of encroaching urban development on unceded Syilx territory–is an integral part of the research. The FEELed Lab is working in conversation with the traditional owners and present-day users of Woodhaven to learn how to care for it. This also involves research on place-based accessibility and inclusion.

As FEELed Lab’s Director and Canada Research Chair, Dr. Astrida Neimanis is hopeful that small-scaled actions can lead to big change, when guided by feminist practice-led methods.

“The relationship between some humans-in-general and the planet-at-large is too big for most of us to get our heads around. But we can tend to relationships in this community, and learn how to care for this place, guided by Syilx knowledge. And this work must be joyful and affirmative, too.”



Interdisciplinary Biodiversity Solutions research cluster

Interdisciplinary Biodiversity Solutions (IBioS) is an inter-departmental collaborative research cluster motivated by crises of biodiversity loss and degradation. The cluster emphasizes research, training, policy, and communication.

Expansion this year included a rigorous collaborative hiring process involving 8 departments in 4 faculties to appoint five new faculty. The new hires are joint-appointed in Botany, Zoology and the Institute for Resources, Environment and Sustainability (IRES) within the Faculty of Science.

Current projects include 'Anthropogenic Wilderness' – a proposed graduate course for understanding what constitutes "anthropogenic wilderness", and how Indigenous history and contributions are intertwined within it; a collaborative research proposal put forward by Land and Food Systems and IBioS on understanding human behaviours towards urban wildlife with a focus on bear conservation; and a podcast series 'Biodiversity Speaks' with faculty interviews on biodiversity conservation, restoration, and related issues.

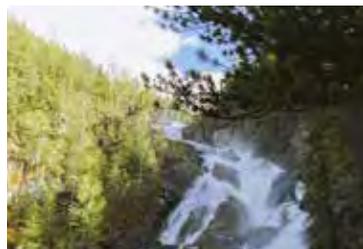


Optimizing solar energy systems at VEDA Student Residence

With one of the highest average temperatures in Canada at 14.3 °C, mild winters, and mean daily insolation of 3.61 kWh/m², Kelowna is an ideal location for solar power. A new 152 kW photovoltaic system has recently been installed on the roofs of VEDA Student Housing near UBC's Okanagan campus, which is predicted to produce over 158 MWh of electricity during its first year of operation, of which 97% is used directly on site.

Dr. Alexander Uhl, assistant professor at the School of Engineering and team will use this living lab to investigate the performance of various solar technologies and installation parameters to improve the accuracy of predictive models in the region. "We're excited to provide a platform to validate the technical and economic viability of solar systems in the Okanagan, inspire and train students in green technologies, and provide clean and renewable energy for the region," said Uhl.

The project was coordinated by the Green Construction Research & Training Centre, funded by Mitacs Accelerate and industry partner VEDA Exclusive Student Living, and installed by SkyFire Energy.



Waterways Past, Present and Future exhibit at Kelowna Museum

Waterways - the Past, Present and Future is a collection of interactive artworks that mobilizes knowledge accumulated over a four-year research project investigating and sharing stories and knowledge of the relationships between humans and water in the Okanagan Valley.

The artwork employs the creative and innovative use of interactive media and artistic software design to create a platform for dialogue across diverse community-based, poetic, traditional and scientific water knowledge. Two main sections include one focused on the Indigenous Syilx teachings, wisdom related to human-water relations and the value of water, and the other on sharing the stories of knowledge and importance of water and ecosystem management and stability.

"In keeping with Syilx environmental ethics, the Okanagan Waterways project reminds us that we all have a responsibility to work towards building and upholding the sustainability of water for healthy ecosystems and future generations." - Aleksandra Dulic, Associate Professor, Creative Studies, UBC Okanagan.

Providing DTES community with access to sustainability research

The Downtown Eastside (DTES) supports a disproportionate amount of sustainability-related research for its size and capacity, and the results of that research can be difficult for community members to access.

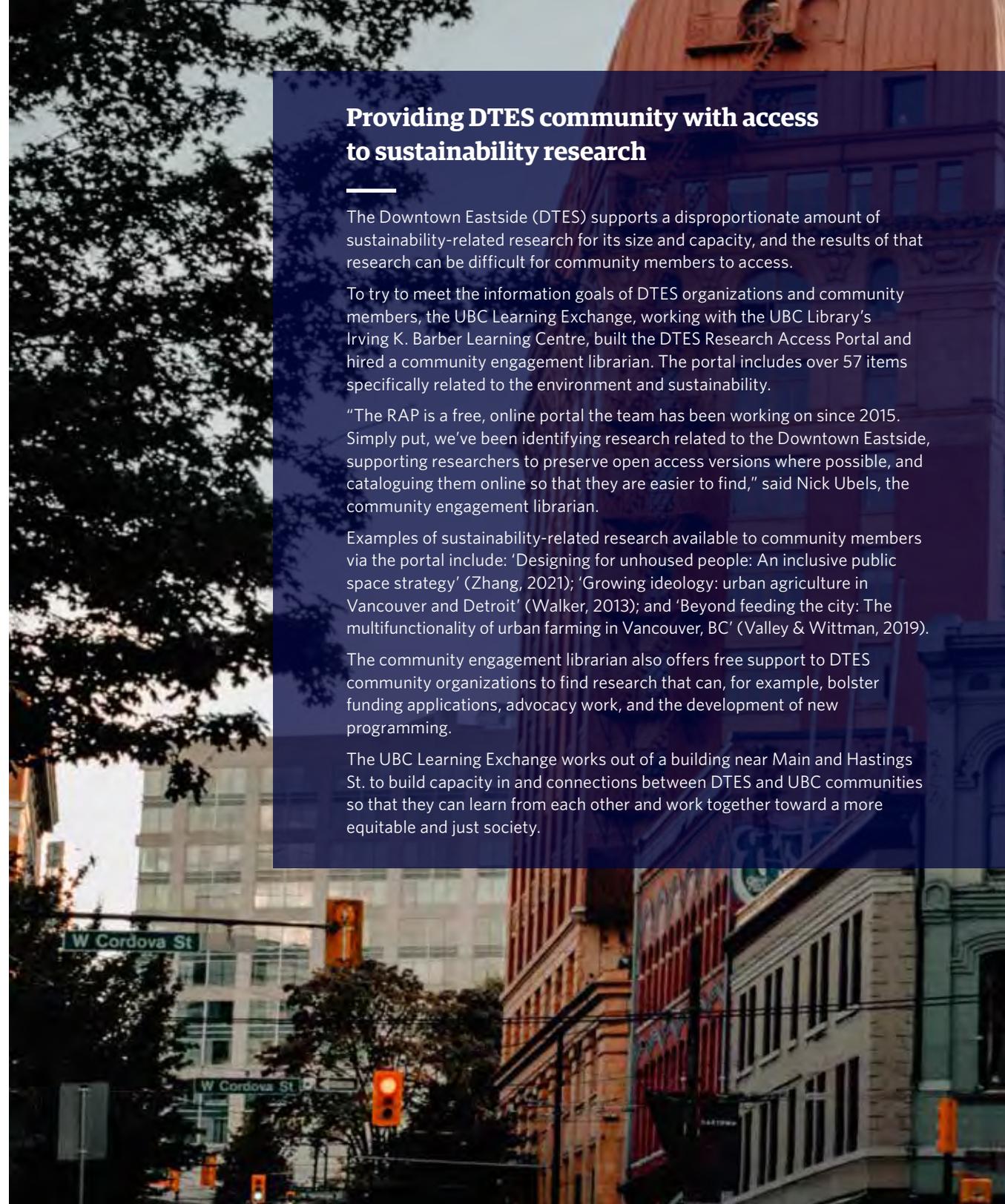
To try to meet the information goals of DTES organizations and community members, the UBC Learning Exchange, working with the UBC Library's Irving K. Barber Learning Centre, built the DTES Research Access Portal and hired a community engagement librarian. The portal includes over 57 items specifically related to the environment and sustainability.

"The RAP is a free, online portal the team has been working on since 2015. Simply put, we've been identifying research related to the Downtown Eastside, supporting researchers to preserve open access versions where possible, and cataloguing them online so that they are easier to find," said Nick Ubels, the community engagement librarian.

Examples of sustainability-related research available to community members via the portal include: 'Designing for unhoused people: An inclusive public space strategy' (Zhang, 2021); 'Growing ideology: urban agriculture in Vancouver and Detroit' (Walker, 2013); and 'Beyond feeding the city: The multifunctionality of urban farming in Vancouver, BC' (Valley & Wittman, 2019).

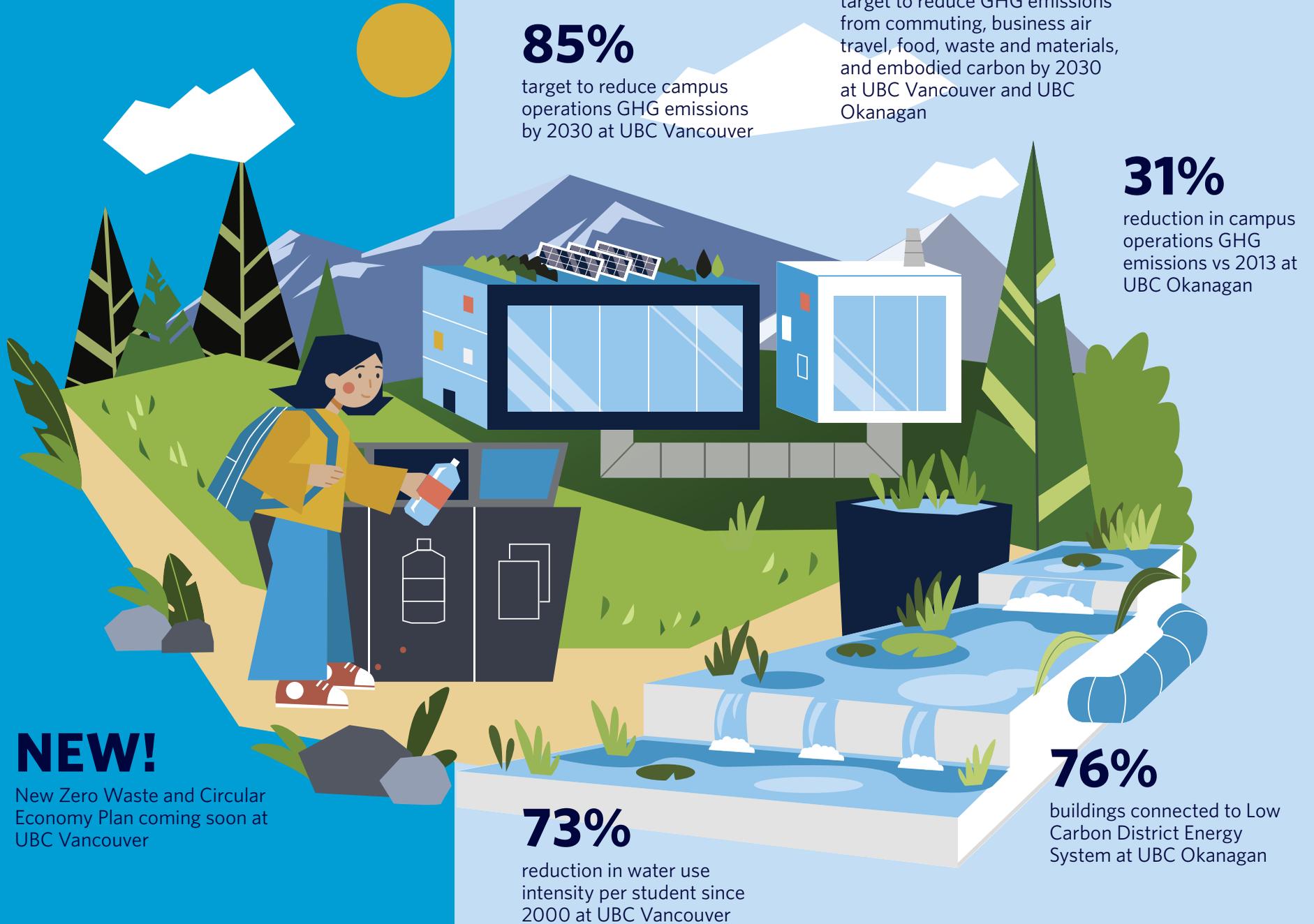
The community engagement librarian also offers free support to DTES community organizations to find research that can, for example, bolster funding applications, advocacy work, and the development of new programming.

The UBC Learning Exchange works out of a building near Main and Hastings St. to build capacity in and connections between DTES and UBC communities so that they can learn from each other and work together toward a more equitable and just society.



Operations and Infrastructure

As a large, research-intensive university, with considerable land, assets and utilities in Vancouver and the Okanagan, UBC is in a unique position to use our campuses as test beds for sustainability. Our goals are to enhance the efficiency of our operations, improve environmental performance, and achieve cost savings, while leveraging our campus infrastructure and built environment to demonstrate innovative sustainability solutions at a municipal scale.



NEW!

New Zero Waste and Circular Economy Plan coming soon at UBC Vancouver

Energy and Emissions

UBC's Vancouver campus now produces 25% fewer GHG emissions than it did in 2007, while our institutional floorspace increased by 25% during the same period. At UBC's Okanagan campus, a focus on sustainable buildings and low carbon energy supply has achieved a 31 percent reduction in absolute GHG emissions vs. 2013, simultaneous with a 22% rise in floorspace.

UBC VANCOUVER

Climate Action Plan 2030 (CAP 2030) – new and ambitious plan endorsed » CAP 2030 responds with urgency to the climate crisis by providing a decarbonization pathway to net zero operational emissions by 2035, and was endorsed by the UBC Board of Governors in 2021.

CAP 2030 establishes accelerated goals to achieve an 85 per cent reduction of operational emissions and a 45 per cent reduction of extended emissions – associated with commuting, air travel, food and waste – by 2030, in order to align with or surpass the Paris Agreement's target to limit global warming to 1.5°C.

Low Carbon District Energy System boosted » Many of UBC's buildings are heated using a district energy system. Significant reductions in operational GHG emissions have already been achieved by this system, especially by using local wood waste to provide a renewable source of energy.

In November 2021 the Bioenergy Research & Demonstration Facility gasifier was re-ignited as part of a 12-Megawatt expansion project, which once completed will help achieve operational GHG reductions (Scope 1 & 2) of approximately 60% from the 2007 baseline year. A study is currently underway to develop future low carbon pathways for the district energy system to achieve the bold 85% reduction target in CAP 2030.

Holistic building decarbonization » CAP 2030 contains specific targets for decarbonizing UBC's building energy and the embodied carbon from building materials, which represents a significant contribution to overall carbon emissions. The UBC Gateway building

project – awarded the 2021 Canadian Architect Award of Excellence – is being designed to target Zero Carbon Building Certification. It will co-locate the schools of nursing, kinesiology, language science and UBC health clinics, and the project team is working closely with the Musqueam community to meaningfully incorporate cultural values into the project.

New heat recovery projects » To achieve the energy conservation and climate targets set out by UBC, Energy and Water Services (EWS) reinvests half a million dollars of annual energy savings into new energy conservation capital projects. This year included installing a heat recovery chiller in the Chemistry Centre, and adding condenser heat recovery coils to Chemistry North. In addition to those capital projects, EWS also installed a demand control ventilation system in the Pharmaceutical Sciences building, and completed a suite of energy conservation automation measures in I.K. Barber Library.

UBC OKANAGAN

First ever UBC Okanagan Climate Action Plan endorsed » UBC Okanagan's first climate action plan also aligns with the Paris Agreement's target to limit global warming to 1.5°C. It does so by establishing an ambitious goal to achieve a 65 per cent reduction of operational emissions (vs. a low baseline) and a 45 per cent reduction of extended emissions – associated with commuting, air travel, food and waste – by 2030. The Plan further supports the longer-term goal of achieving a net positive performance in operational energy and carbon by 2050, as established in the UBCO Whole Systems Infrastructure Plan.

Low Carbon Energy Strategy and Strategic Energy Management Plan reduce consumption » Key plans that support energy and emissions reduction goals include the Strategic Energy Management Plan (SEMP), which provides a suite of demand-side management projects to reduce energy consumption and associated emissions, and the Low Carbon Energy Strategy, which guides future low carbon district energy system development and investments. SEMP projects implemented in 2021 are estimated to have reduced energy and emissions by 655,000 kWh, 2,800 GJ and 146 tCO₂e per year.

FEATURE STORY

Thermal energy recovery from computing cluster heats building

A server room in the basement of Chemistry D (Centre) Block currently holds a computer cluster in support of research and learning. In order to properly regulate the heat produced from the complex chemistry simulations performed on these servers, the room requires cooling at all times of the year.

The team at Energy & Waters Services identified an opportunity to recover the transferred heat from the server room—the output from the cooling—by installing a heat recovery chiller. The installed equipment is designed to convert the heat being rejected by the servers to usable thermal energy for space heating in other areas of the building.

After many years of project development, the heat recovery chiller was put into operation in the Chemistry D Block building in late 2021. Now heat recovered from these servers provides almost all of the space heating needs for the building year-round, and the project is expected to produce almost 5,000 GJ of annual thermal energy savings – reducing energy costs by almost \$50,000 per year.

VANCOUVER

25%

reduction in absolute
GHG emissions
since 2007

OKANAGAN

31%

reduction in absolute
GHG emissions
since 2013

VANCOUVER

46%

reduction in GHG
emissions per student
since 2007

OKANAGAN

52%

reduction in GHG
emissions per student
since 2013



FEATURE STORY

Energy savings realized despite increased ventilation due to COVID-19

Through the myriad ways that COVID-19 has affected our community, one potentially unforeseen consequence was the effect on energy use at UBC.

The health of building occupants was a key priority when general occupancy returned at the beginning of the 2021/22 academic year. However, increasing the proportion of outside air being provided into campus spaces, as well as increasing ventilation rates and running air systems for longer hours greatly increases energy demands from our ventilation systems. Despite these increases, UBC's Energy and Water Services department was still able to meet their energy reduction target of three gigawatt hours.

Thermal demand reductions were much less than expected, however, as increased ventilation rates eroded a significant portion of winter thermal savings. Existing and new demand reduction measures, such as reducing nighttime setbacks, ramping temperature setpoints, and longer preheat periods, have proven highly effective at maintaining energy savings and many will be permanent fixtures in UBC's building control systems.

Water

Climate change impacts related to water resources at UBC include increasing drought periods, heavy rainfall events, and potential disruptions to water supply due to emergencies. Multiple departments are collaborating to address these issues through interdisciplinary research, innovative and efficient buildings and infrastructure design, and developing a roadmap for climate adaptation and resilience.

UBC VANCOUVER

New Water Pump Station increases campus resilience

» The installation of a new Water Pump Station meets 70% of the campus demand for domestic cold water, with each pump capable of delivering 200 litres per second of water. It increases the resilience of the campus by ensuring high-pressure water is available for firefighting, and by increasing seismic resilience of the water supply system.

Unlike many older infrastructure systems, the station design also acts as a visually appealing and educational installation. Window glazing at ground level showcases the water supply systems, and wrap-around graphics help educate passersby about UBC's water supply infrastructure.

Focusing on water conservation and efficient usage

» Supported by UBC's Water Action Plan and Green Building Action Plan, the Green Labs program is working with researchers to identify new water conservation opportunities in labs. In addition, new building designs continue to strive for more and more water-efficient design, using LEED and UBC REAP green building rating systems.

SEEDS research develops emergency water supply strategies

» Groups of Civil Engineering students participating in a SEEDS research project to tackle the challenge of designing emergency water supply infrastructure for the campus. The students collaborated with one of UBC's senior civil engineering managers to develop different strategies and designs to provide alternative water supply using available groundwater resources in the event of an interruption to UBC's water supply.

UBC OKANAGAN

Achieving 100% rainwater diversion » Staff successfully achieved a goal of diverting 100% of the rainwater from municipal systems through ongoing adherence to the campus' Integrated Rainwater Management Plan. This year completion of the Nechako Residence and Commons Block building incorporated a raingarden to retain water, as part of an overall system designed to manage rainwater within the campus boundaries.

Landscape and irrigation projects support water conservation and biodiversity » UBC Okanagan continued to implement landscape and irrigation projects that support water conservation and the ecological biodiversity of the campus. These included:

- Leaf-mulching program in which autumn leaves are collected and shredded, then re-applied to our landscape beds as a mulch to help hold moisture in the soil and suppress weeds
- Replacing sprinklers in garden beds with drip irrigation lines to reduce water use
- Managing invasive species including the Siberian Elm (managed) and Myrtle Spurge (toxic, removed)
- Planting hardy and pest-resistant species of trees
- Installing a new low-maintenance, drought-tolerant and pollinator-friendly landscape at the Upper Campus Health building



VANCOUVER

73%

reduction in water use intensity per student since 2000

OKANAGAN

28%

reduction in water use intensity per student since 2013

VANCOUVER

54%

reduction in absolute water consumption since 2000

OKANAGAN

44%

reduction in water use intensity per student since 2007

Waste and Materials

UBC Vancouver's Climate Action Plan 2030 defined new targets – including a 50% reduction in waste disposal by 2030 vs. 2019. In the Okanagan, a closely aligned goal aims for a 50% reduction in waste (per capita) by 2030, while progressing toward a zero-waste community. Achieving these targets will require continued updating of infrastructure and operational processes, the commitment of the campus community, and collaboration with sustainable industry partners and government policymakers.

UBC VANCOUVER

Developing a new Zero Waste and Circular Economy Plan » This year work began on a new action plan that applies a circular economy lens to both reduce waste and life cycle GHG emissions associated with waste and materials in alignment with the Paris 1.5°C climate agreement target. Engaging a wide range of stakeholders across campus and linking with external policies and initiatives, the new plan is expected to be complete in late 2022.

SEEDS circular economy research informs community consultations » A series of SEEDS student research projects informed the planning of UBC's emerging Zero Waste and Circular Economy Plan, and related targets in UBC's Climate Action Plan 2030. Student-led research developed a review of circular economy and waste reduction concepts that provided the framework for public consultations, and developed recommendations for preliminary key performance indicators and gathering baseline data.

Partnering with RETURN-IT to increase container recycling » UBC and provincial non-profit Return-It partnered to launch an Express & GO station on campus – a first for the west side of Vancouver – allowing for the quick and easy recycling of empty beverage containers. Supporting UBC's zero waste targets and BC's beverage container product stewardship program, the station provides a convenient way for residents at UBC and surrounding communities to return beverage containers for a refund, and ensures that these containers are recycled.

Expanding the reuse of goods and equipment with REUSE-IT! » Revamping Reuse-it! – UBC's online platform for exchanging and reusing goods and equipment on campus – included providing users with a more powerful interface, along with launch of a promotional campaign to encourage greater usage.

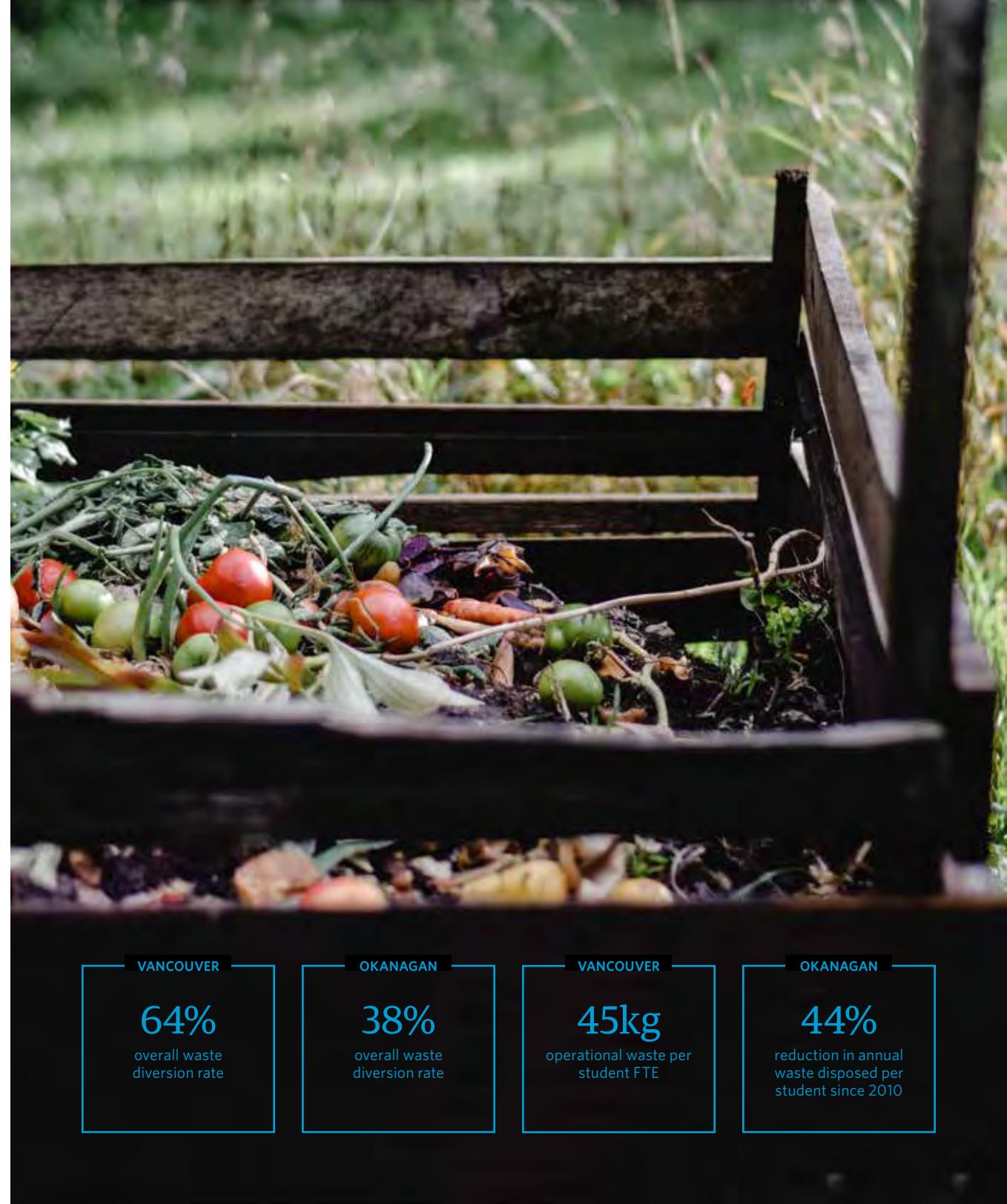
Since relaunching, monthly usage of the platform increased nearly fourfold. Over the coming year, UBC is pursuing further expansion, to increase reuse of furniture, IT equipment, and laboratory equipment, with the potential to reduce waste and materials life cycle emissions by hundreds of tonnes per year.

UBC OKANAGAN

Enhanced compost program avoids GHG emissions and improves waste diversion rate » UBC Okanagan's compost program successfully diverted 44 tonnes of fibrous and organic material from landfill waste this year, avoiding the release of 27 tCO₂e emissions and supporting a 7% increase in waste diversion vs. 2010. Recent program enhancements include revised sorting station placement, campus-wide signage updates, and the expansion of accepted items in compost – including all organics, bones, carbohydrates and proteins, along with single-use, compostable take-out containers and utensils, and fibrous materials, including pizza boxes and paper hand towels.

Pritchard Dining Hall Reduces Food And Material Waste » Reducing food and single-use waste while promoting sustainable food options are a priority in UBCO's newest 450-seat eatery. The Pritchard Dining Hall features an all-you-care-to-eat dining experience, and to minimize waste, the cafeteria provides no take-out containers - instead using reusable foodware - and provides patrons with full material sorting stations to ensure waste is diverted from the landfill.

Remote working and learning reduces paper use and emissions by 40% » The Okanagan campus achieved a second year of significant reductions in paper purchases and paper use, resulting in the campus purchasing 737 fewer packages of paper, equal to saving 368,500 sheets. Remote working and learning paired with the use of PaperCut™, a user-driven online based printing program, supported the achievement of a 40% reduction in paper-related greenhouse gas emissions.



VANCOUVER

64%

overall waste diversion rate

OKANAGAN

38%

overall waste diversion rate

VANCOUVER

45kg

operational waste per student FTE

OKANAGAN

44%

reduction in annual waste disposed per student since 2010

Green Buildings

UBC buildings create an exceptional and sustainable environment for teaching, learning and research, and places to socialize, live and play. In Vancouver, our vision is that by 2035, our buildings will make net positive contributions to human and natural systems. In the Okanagan, our whole systems plan approach to energy efficiency, low carbon district energy, and climate adaptive design supports an equivalent goal to achieve a net positive performance in operational energy and carbon by 2050.

UBC VANCOUVER

Reducing the total carbon footprint of buildings »

An array of measures are reducing the carbon footprint of campus buildings, and both operational carbon and embodied carbon of buildings are now quantified for new buildings and retrofits. For example the Gateway project is currently being designed to meet the Zero Carbon Building Standard. Not only will the operational emissions be very low, but UBC will pay offsets on the small remainder. The wood hybrid structure and careful attention to building materials will ensure low embodied carbon.

Integrated sustainable building design updated »

This year the approach to creating sustainable buildings has been improved at UBC with an updated process and guidelines that support integrated design. In addition to carbon reduction, integrated design supports creating a healthy and welcoming environment, and biodiversity on campus by encouraging a holistic approach early in design.

New faculty and staff housing: Evolve » Evolve is a new 6-storey faculty and staff rental building featuring 110 homes in Wesbrook Village. This project is targeting both REAP gold plus and Passive House certification, as well as aiming to be UBC's first net zero energy building. Research conducted on the building when occupied will be disseminated among the property development community to share knowledge and learnings.

SEEDS student research supports green roofs, biodiversity, and bird species » Applied student research analyzed potential locations on campus for green roof installations. Using LiDAR data to create

suitability criteria for campus buildings, students assessed the potential impact of green roofs on ecosystem services such as stormwater runoff and on ecological connectivity.

Other research identified 10 native species of birds associated with conservation issues. The research combined survey data from UBC community members and ecological data to determine species where feasible improvements could be made. Research resulted in key recommendations for developing and improving bird habitat on campus. The research is of considerable value for informing future landscape design projects, and providing data to create more biodiverse and bird friendly landscapes.

UBC OKANAGAN

Skeena Residence achieves first passive house dormitory in Canada » Achieving Passive House Classic Certification and winning BC's Net-Zero Energy-Ready Challenge – UBC Okanagan's Skeena Residence is the first Passive House Certified Dormitory in Canada. The project exceeded Passive House standards for airtightness and implemented a variety of measures to reduce heating demand. Skeena Residence was also a recipient of the 2021 Canadian Green Building Awards, which recognizes some of the best examples of sustainable, high-performance building designs in Canada.

Two new capital projects focus on reducing carbon footprint while serving the region » UBC Okanagan will focus on the development of two new major capital projects currently in design.

The Interdisciplinary Collaboration and Innovation (ICI) building will target a minimum LEED® Gold Certification, while aiming to reduce the carbon footprint of the building and its operations. Design strategies include an earth tube for passive air ventilation to reduce energy consumption, operating costs and GHG emissions.

With the aim to serve future regional needs, a new project - UBCO Downtown - will expand UBC's footprint in Kelowna while working to meet LEED® Gold Certification and Step 3 of the BC Energy Step Code. The design approach is rooted in passive principles to minimize both impact and the energy required to heat and cool the building.

FEATURE STORY

Arts Students Centre

The new three-storey, cylindrical building opened in November 2021 and is a meeting place for Arts students to interact, collaborate on projects, and host events.

Sustainability is at the forefront of the building's form, with metal fins on the exterior to prevent bird strikes and minimize heat solar gain, automated ventilation systems for the building to naturally cool itself, and an open concept with large windows for light, ventilation, and all-around visibility. The cylindrical form with a generous atrium between the second and third floors also honours the building's mission, allowing activity to continuously and serendipitously overlap, and encouraging interaction between Arts students across programs and activities.

The \$10-million space was primarily funded by Arts students through an annual fee, with the Faculty of Arts donating \$3-million and the university contributing \$1.5-million.

"The opening is a reminder of how effective student organizing can be on campus. It took almost 10 years of student planning and collaboration with the Faculty to get the project from a fun idea to being built. Let it show young, driven students that hard work and focus on big things can pay off." - Ben Foster, former Arts Undergraduate Society VP Administration.

VANCOUVER

27

LEED certified buildings

VANCOUVER

21%

LEED certified building area of the total area on campus

OKANAGAN

71%

of buildings connected to Low Carbon District Energy System

OKANAGAN

36%

less energy used in buildings per FTE since 2013



Community

UBC is home to a growing community of people that live, work, learn and take part in everything that UBC has to offer. Each year, we design and deliver quality programming and events that leverage our world-class assets and public spaces. Our goal is to foster an inclusive and welcoming campus by sparking the imagination of our community members to join us.

20%

target of all housing to be restricted rental for faculty and staff at below-market rates at UBC Vancouver

66%

planned increase in childcare spaces at UBC Okanagan

92%

in TransLink survey support the SkyTrain extension to UBC Vancouver

12,711

beds in student residences on-campus at UBC Vancouver

64%

of all trips to and from campus made by sustainable modes of transport at UBC Okanagan

841

faculty and staff rental units on-campus at UBC Vancouver



Campus Vision 2050: Planning the future of the Vancouver campus

UBC is preparing for the future by engaging the university community and xʷməθkʷəy̓əm (Musqueam) in a comprehensive land use planning and engagement process that will shape how the Vancouver campus changes and grows over the next 30 years.

Campus Vision 2050 will result in a long-term plan for the campus that supports the needs of the university and balances the multiple interests of xʷməθkʷəy̓əm and the UBC community.

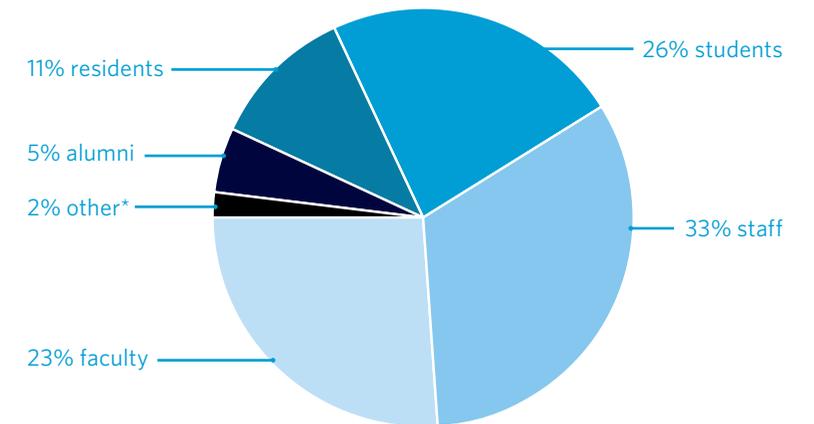


UNDERSTANDING NEEDS AND ASPIRATIONS

Campus Vision 2050 launched in early 2022 with two rounds of community engagement between January and April. During this time, Campus + Community Planning sought to better understand the campus community's 'Needs and Aspirations' for the future, and identify challenges and opportunities for Campus Vision 2050 to address.

Over 3,300 people participated and a breakdown of participation by primary affiliation can be seen below.

Participation by affiliation to UBC



*Includes participants such as emeritus professors, external stakeholders, and non-affiliated members from the Vancouver Region.

OUR APPROACH TO COMMUNITY ENGAGEMENT

Campus Vision 2050 engagement builds on Campus + Community Planning's Engagement Charter, and emphasizes principles of equity, diversity and inclusion, building trust, providing diverse ways to meaningfully engage, and ensuring clear communication and transparency.

Campus + Community Planning listened to a wide range of communities, units, departments, clubs and organizations through broad public engagement. In addition, there were 80 meetings with a variety of groups across campus, including 13 groups representing equity deserving communities. UBC and xʷməθkʷəy̓əm are working together to co-develop a comprehensive framework for engaging xʷməθkʷəy̓əm on land use initiatives, including Campus Vision 2050, seeking to integrate xʷməθkʷəy̓əm values, interests and comments into planning.

WHAT WE HEARD

Throughout the engagement process, we heard a call for the draft vision to be bolder and more aspirational.

Supporting excellence in teaching, research and learning — we heard participants emphasize that people are at the heart of academic mission, and that meeting the breadth of community needs is essential to the success of this principle.

xwməθkwəyəm and the Indigenous Strategic Plan (ISP) — we heard a strong call to co-develop the principles and strategies with xwməθkwəyəm and to provide transparency on how xwməθkwəyəm and campus Indigenous communities have been involved throughout the planning process.

Supporting affordability and everyday needs — we heard that affordable housing is a top community concern, as well as the need for more affordable and diverse food options on campus.

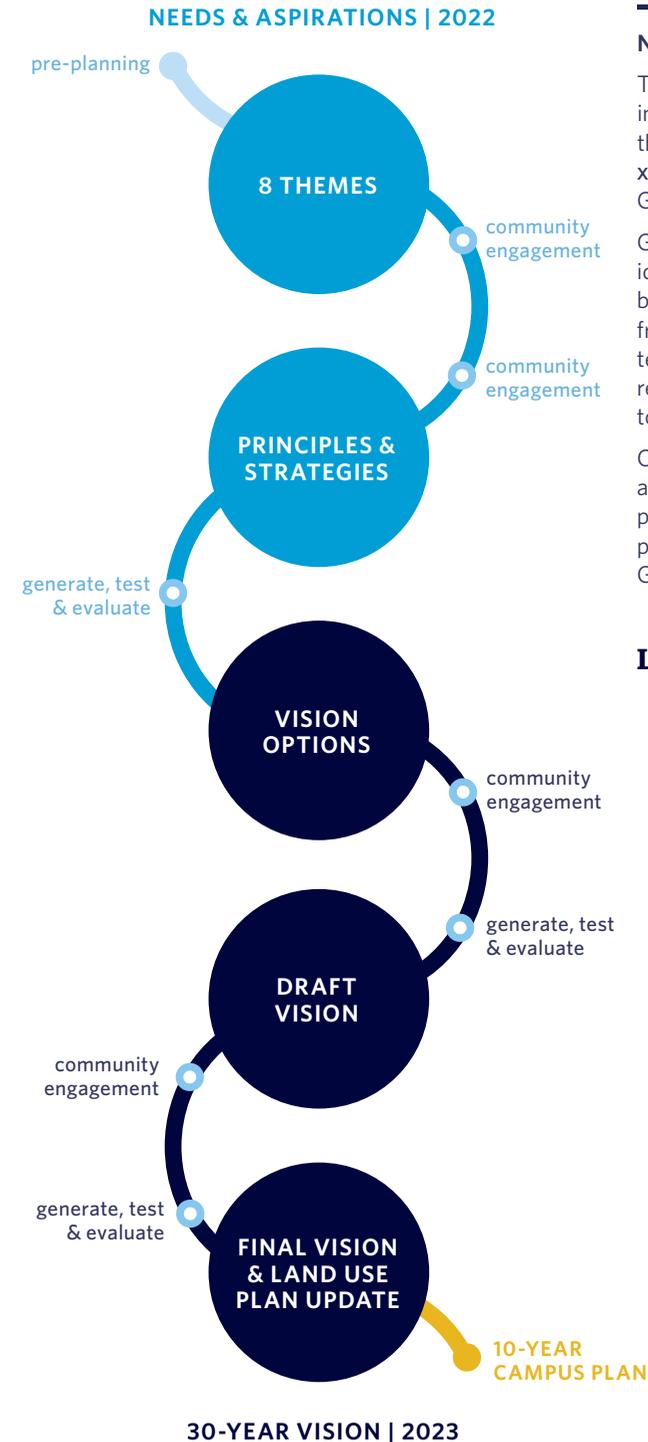
Inclusion, belonging and community building — we heard support for more gathering spaces and

improvements to safety on campus, and received suggestions to use more specific, inclusive and plain language in the strategies.

Campus ecology, livability and funding UBC's priorities — we heard strong feedback that funding and housing development does not fit within considerations of ecological stewardship, and that green spaces and forested areas should be preserved on campus.

Responding to the climate emergency — we heard a call for stronger language and targets to demonstrate institutional commitment to this principle, as well as support for climate adaptable and resilient buildings. We also heard a call for biodiversity loss to be considered under this principle.

Strengthen campus and regional connectivity — we heard support for the arrival of SkyTrain to UBC and concern around potential impacts that result from new transportation infrastructure investment. We also heard support for more cycling infrastructure on campus, and a call for ecological connectivity and biodiversity to be considered under this principle.



NEXT STEPS

The final Terms of Reference, which was shaped by input from the UBC community, advisory committees, the University Neighbourhoods Association Board and xwməθkwəyəm, was approved by the UBC Board of Governors in June 2022.

Guided by the approved Terms of Reference, a range of ideas and options that will shape the 30-Year Vision will be shared for discussion and input. Based on feedback from the UBC community and the university, and further testing and evaluation, a draft 30-Year Vision and recommended Land Use Plan updates will be presented to the community in early 2023 for feedback.

Once the 30-Year Vision and Land Use Plan is approved, a 10-Year Campus Plan and similar neighbourhood plans will be developed through a similar engagement process, before submission to the UBC Board of Governors in 2024.

Learn more: campusvision2050.ubc.ca

Community Programs

UBC's campuses and neighbourhoods are vibrant, sustainable, connected communities of students, faculty, staff, and residents – it is community members who help make UBC such an incredible place to live, work, and learn. Each year, we work with campus partners to design and deliver programs, events, and initiatives that leverage UBC's world class cultural and recreational amenities and public spaces with the goal of sparking imagination, providing opportunities for community capacity-building, and fostering an inclusive and welcoming campus for all.

As community members returned to in-person learning and working, we continued to provide creative opportunities for connection, vibrancy, and inclusion – both in-person, and online.

Thrive by the Fire pop-up concerts » In support of UBC's annual 'Thrive' campaign promoting mental health literacy, Thrive by the Fire brought community members together for an outdoor concert, featuring student performers from the Blank Vinyl Project. Guests gathered around cozy fire pits to listen to relaxing tunes and talk about how to thrive, even in the most challenging of times.

Lights in Lee Square support 'Move UBC' » To animate and activate the campus at night, a number of exciting lighting installations were projected onto Raymond and Money Lee Square throughout the year. UNA and UBC community members were invited to share what helps them "Thrive Together" with an illustration or animation in support of Thrive month, while an interactive dancing animation encouraged the community to have fun and "move more" during Move UBC month.

Kids Take Over UBC » After last year's online adventures, we were pleased to bring back Kids Take Over UBC in hybrid form. This annual event let kids take the lead in exploring many of UBC's cultural amenities and venues. Campus partners, including the Museum of Anthropology, Beaty Biodiversity Museum, Nitobe Gardens, First Nations House of Learning, and more provided safe, fun, family-friendly programming, while a number of online activities were hosted through a digital treehouse.

Movie on the Mall » To celebrate the start of the academic year, Campus + Community Planning partnered with AMS First Week to host an outdoor movie on Main Mall for all UBC community members.

UBC Botanical Garden hosts Biodiversity Days and SEEDS research » UBC Botanical Garden hosted a month-long celebration for Biodiversity Days featuring family nature walks, and provided the venue for the SEEDS Research to Action Showcase including research on campus bird conservation, biodiverse food procurement, climate adaptation prediction for maple species, and a public engagement strategy for biodiversity topics.

Return to in-person community programs » The return of many beloved in-person programs for families living on campus included the UTown@UBC Nature Club, Inspiring Community Grants, and Youth Leadership Group — comprised of teens from the UNA and Acadia Park.

VANCOUVER

22

Inspiring Community grants awarded to UBC and UNA community members

VANCOUVER

1,600+

people registered for Kids Take Over UBC online and in-person activities

VANCOUVER

14

departments at UBC partnered to provide Kids Take Over UBC programming

VANCOUVER

314

bikes registered through Project 529 to prevent bike theft

FEATURE STORY

Inspiring Community Grants

As provincial health orders shifted, the UBC community continued to share and celebrate their time and talents, explore opportunities for social connection, and support one another.

A total of 22 Inspiring Community Grants were awarded to a number of outstanding and inspiring capacity-building projects, including:

- **Sharing Indigenous teachings through song and dance:** Residents of Acadia Park learned about the teachings, story, and bear dance at this event, featuring Laura Grizzlypaws, Indigenous Woman, Mother, bear dancer, and fluent Státimcets language speaker.
- **x̣ẉṃə̣θ̣ḳẉə̣ỵə̣m (Musqueam) gets ready for winter:** Hosted by the Musqueam housing department, a community event called, "Game of Homes", featured games, presentations, and activities for families living on-reserve to learn about how to save energy during winter, improve indoor air quality, and enhance the health and safety of their homes.
- **Propagating Plants, Growing Community.** Led by a graduate architecture student, this project inspired connections between neighbours, by facilitating knowledge exchange on the propagation and exchange of plants.
- **Just for Kids Community Grants.** A special stream of community grants providing UBC's youngest residents with up to \$300 to implement their ideas for creating social connections between residents in their community, or sharing skills or talents with each other. Projects included a youth running club, an arts and craft workshop, and more.



Transportation

UBC's campuses in Vancouver and the Okanagan are a destination for students, staff, faculty, alumni and visitors from across the region, as well as home to many residents. This year on campus activities resumed, but many staff and some students and faculty continued to work and learn remotely thanks to COVID-19 policies — allowing UBC to maintain services while further reducing commuting emissions.

UBC VANCOUVER

SkyTrain to UBC advancing with strong public support » This year TransLink surveyed over 15,000 people across Metro Vancouver and found that 92% of respondents support the extension of SkyTrain Millennium Line to UBC. People who live further from UBC, beyond the City of Vancouver, were even more likely to say they support the extension (93% support).

Endorsed by the Mayors' Council on Regional Transportation, and confirmed as a regional priority in TransLink's Transport 2050 Plan, the SkyTrain connection to UBC could open as early as 2030, reducing transit commute times by as much as 20-25 minutes each way.

Campus bike share enjoys 30,000 trips » UBC's campus-wide bike share program continued to operate this year with 30,000 trips taken, covering over 37,000km. Throughout the COVID-19 pandemic, the program served an important role in providing a socially-distanced and sustainable mode of transportation for neighbourhood residents, students, workers and visitors to get around UBC Vancouver's 400-hectare campus.



*Sustainable modes of transport include walking, biking and transit.

UBC OKANAGAN

New transportation plan to reduce emissions » Completed in 2021, the UBCO Transportation Plan provides direction for a shift towards more sustainable modes of travel. To support ongoing campus growth and reduce commuting emissions, the Plan establishes a roadmap for meeting the transportation needs of the campus through 2040, describes the University's Vision for the future of transportation, and articulates related objectives, targets, strategies and actions.

Implementation of this plan is required to achieve the UBCO CAP 2030 commuting-related GHG reduction target.

Discount transit pass for staff and faculty » This year UBCO partnered with the City of Kelowna and BC Transit to offer a discounted transit pass to staff and faculty through the ProPASS program, a key recommendation of the new UBCO Transportation Plan. This year all staff and faculty were eligible to receive a 15% discount on monthly transit passes and next year UBCO is planning to increase the discount further.

Electric bike pilot launch » Getting to, from, and around UBC's Okanagan campus was made easier and more sustainable through the implementation of an e-bike pilot program in early 2022. UBC Okanagan joined the City of Kelowna's shared micro mobility pilot, enabling SPIN Mobility to operate their shared e-bike program on campus through August 2022.



FEATURE STORY

Remote work support increasing; productivity maintained

Although UBC policy has long accommodated remote work for eligible staff and faculty, workplace culture and logistical barriers meant there was very little take-up. However, during the COVID-19 pandemic technological barriers were overcome and staff and faculty demonstrated that productivity can be maintained, and even improved in some cases, when working from home.

Workplace experience surveys confirm that staff and faculty across many units at UBC are interested in continuing to work from home at least a few days a week post-pandemic. In the fall of 2021, with the return of campus activities, many departments offered support for working from home a few days a week.

Housing and Amenities

UBC is building a vibrant community by providing campus housing options to students, faculty, staff and residents, and by developing recreation facilities, community centres, parks, and open spaces and other community amenities within our neighbourhoods and academic spaces. Driven by UBC's vision to be a world-class community of scholars with access to a beautiful, and sustainable campus, we are committed to increasing housing choices and growing amenities.

UBC VANCOUVER

The UBC Vancouver campus now provides 841 faculty and staff rental units, and has expanded student residences to 12,711 beds.

225 new rental units in Wesbrook village » UBC's Housing Action Plan (currently being reviewed and updated alongside Campus Vision 2050), is part of the university's overall strategy for academic excellence and sustainability leadership, integrating the responsible management of our campus land with these goals.

Key targets and performance metrics related to improving rental choice and affordability for faculty and staff include:

- Creating 30% of future housing on campus for rental – with at least 20% restricted rental for faculty and staff at below-market rates
- Rental units currently make up 31% of all neighbourhood housing, with 262 more faculty and staff rental units under construction this year
- Faculty and Staff rental units now make up 41% of all rental units

Child care demand fluctuates in response » This year child care centres in the UBC community and neighbourhood housing areas provided 978 spaces, including spaces for ages 0-5 and out of school care. Due to low demand, 20 pre school spaces and 16 occasional drop in spaces were closed. These closures were partially offset by an increase in 14 out-of-school care spaces.

The Child Care Expansion Plan aims to create an inventory of approximately 1,200 spaces by 2041, with a focus on delivering more child care spaces for children under 3 years of age.

UBC OKANAGAN

Nechako Residences raises beds to over 2,100, adds dining, 24-hour amenities » The 2020 completion of the Skeena Residence, and 2021 completion of the Nechako Residence and Commons Block have increased student housing by 440 beds to just over 2,100 beds, a 26% growth from 2019. Nechako also offers residents 24-hour amenities, and provides a 450-seat dining hall for campus residents.

Future renovations to UBC Okanagan's existing childcare facility are anticipated to add 37 new spaces upon completion.

VANCOUVER

225

new housing units added in Wesbrook Neighbourhood

VANCOUVER

262

faculty and staff rental units under construction

OKANAGAN

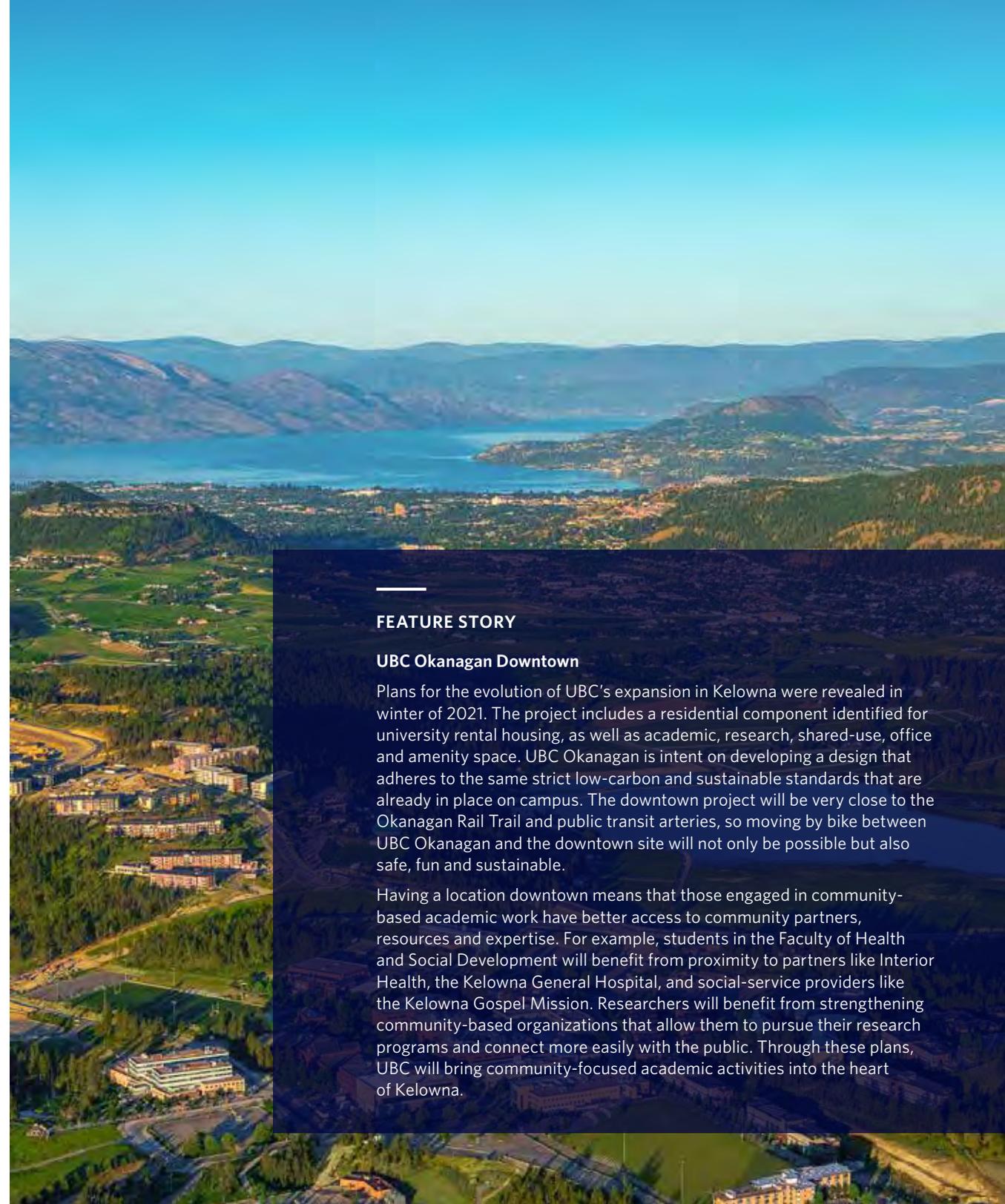
220

additional student beds

OKANAGAN

66%

planned increase in childcare spaces



FEATURE STORY

UBC Okanagan Downtown

Plans for the evolution of UBC's expansion in Kelowna were revealed in winter of 2021. The project includes a residential component identified for university rental housing, as well as academic, research, shared-use, office and amenity space. UBC Okanagan is intent on developing a design that adheres to the same strict low-carbon and sustainable standards that are already in place on campus. The downtown project will be very close to the Okanagan Rail Trail and public transit arteries, so moving by bike between UBC Okanagan and the downtown site will not only be possible but also safe, fun and sustainable.

Having a location downtown means that those engaged in community-based academic work have better access to community partners, resources and expertise. For example, students in the Faculty of Health and Social Development will benefit from proximity to partners like Interior Health, the Kelowna General Hospital, and social-service providers like the Kelowna Gospel Mission. Researchers will benefit from strengthening community-based organizations that allow them to pursue their research programs and connect more easily with the public. Through these plans, UBC will bring community-focused academic activities into the heart of Kelowna.



FEATURE STORY

tə šxʷhəleləm̓s tə kʷaλkʷəʔaʔt

tə šxʷhəleləm̓s tə kʷaλkʷəʔaʔt (The Houses of the Ones Belonging to the Saltwater) is the newest residence community at UBC Vancouver. The xʷməθkʷəy̍əm (Musqueam) Nation generously gifted the həh̓qəmiḥəh̓ language residence and house names to UBC in spring 2021. The marine animals, after which the houses at tə šxʷhəleləm̓s tə kʷaλkʷəʔaʔt are named, all reside in saltwater. Collectively, they convey themes of sustainability and biodiversity, along with individuality and cooperation.

Providing housing for nearly 750 students in a revitalized area of campus alongside Walter Gage, Brock Commons and Exchange residences, tə šxʷhəleləm̓s tə kʷaλkʷəʔaʔt is just steps away from the UBC bus exchange, Aquatic Centre, and Student Recreation Centre. The AMS Nest, UBC Life Building and many other campus amenities are also nearby.

In September 2021, q̓əłtələm̓əcən leləm̓ (Orca House) and qʷta:yθən leləm̓ (Sturgeon House) opened, followed by stəwəł leləm̓ (Herring House) in January 2022 and təməs leləm̓ (Sea Otter House) and sqiməkʷ leləm̓ (Octopus House) in April 2022, completing 940 new student beds.

Wellbeing

UBC Wellbeing is a collaborative effort to make the university a healthier and more inclusive place to live, work, learn, and play. As UBC communities continued to navigate the global pandemic and shifts between remote and in-person classrooms and offices, this year reinforced our belief that good health and wellbeing for people, places, and the planet are the foundation of our success as individuals, a university, and a community.

UBC VANCOUVER

Developing the Wellbeing Strategic Framework Roadmap »

To meet the 2025 targets outlined in the Wellbeing Strategic Framework, the development of a four-year Roadmap with key milestones is underway with Wellbeing Priority Area Committees and key stakeholders. The Roadmap has begun to identify lead and contributing units, timelines, and status updates, indicating if milestones are on track, need attention, or are on hold. Over the next four years, several key units – as well as many supportive partners across UBC – will work to strengthen collaboration and align efforts on identified health and wellbeing priorities.

Thrive: Supporting wellbeing in the face of the climate crisis »

As part of UBC's annual Thrive month, the Climate Hub presented the "Acknowledging Climate Grief - Activating Hope & Action" workshop to address and respond to climate-related challenges that have impacted the mental health of our community. This engaging session encouraged participants to share their climate feelings, expand UBC's climate community, and provide climate mental health and wellbeing resources, coping strategies, research and more.

Food Hub Market pilot at Centre for Interactive Research on Sustainability »

In February, the Food Hub Market opened its doors to provide low-cost groceries for the UBC Vancouver campus in a welcoming community space. A collaborative pilot project led by the Office of Wellbeing Strategy, UBC Food Services, and the Sustainability Hub with funding from UBC's Student Directed Initiative Fund, this initiative addressed campus food security and inspired conversation about what a future Food Hub at UBC could look like.

Health promotion leaders establish global commitment to wellbeing »

In December 2021, UBC was among thousands of international health promotion leaders who met virtually for the World Health Organization's 10th Global Conference on Health Promotion and to establish the "Geneva Charter for Well-being" — a global commitment to achieving equitable health and wellbeing outcomes for people and the planet based on input from 5,000 people from 149 countries.

Building on the 1986 Ottawa Charter for Health Promotion and nine global conferences on health promotion, this foundational document aims to inspire policy-makers and global leaders across diverse sectors towards concrete action.

Visions for A Just, Food Future on Campus: IBPOC Students' Stories of Food »

A collaboration between UBC's Health Promotion & Education, the Office of Wellbeing Strategy, the University of Guelph and University of Waterloo, engaged eleven students in a participatory digital storytelling workshop exploring diverse food security experiences.

UBC OKANAGAN

Voice research tackles food security » The goal of Voice research is to improve the way our campus is designed so that it's healthier for all. Researchers use community-based participatory action research methods to explore factors that influence campus wellbeing and support collective action for systemic change. One of the latest projects focused on food security.

Drawing on Voice findings concerning student experiences related to food security, the team began a collective action phase to address identified needs. The Voice team worked in collaboration with the campus community to build partnerships to bring more local food on campus, launch a farmers market pilot project, and offer food skills workshops that incorporated practices to support sustainability goals. The team also garnered support for establishing a food hub on campus to expand these initiatives, and provide space for continued collaborative visioning and actions to support sustainable food practices.

FEATURE STORY

Move UBC: Moving for our minds, bodies and the planet

Move UBC is an annual, university-wide campaign to increase physical activity and reduce sedentary behaviour among UBC students, faculty, staff and community. Each February, the campaign invites UBC communities to explore ways to move that feel comfortable, empowering, and motivating for them.

Recognizing the intersectional nature of movement and its connection to sustainability, this year's campaign incorporated new messaging around "moving for the planet" to align with campus-wide sustainability and climate action strategic plans by promoting movement as a means to reduce emissions and support our environment.

In addition, with Move UBC coinciding with Climate Emergency Week, stakeholders from the Wellbeing Physical Activity Committee, Sustainability Hub and Climate Hub partnered on various events, including the annual "Research Roundtable: Physical Activity & Climate Action". This event highlighted the intersections between physical activity, climate action and social justice, encouraging UBC communities to explore ways of moving that positively impact our minds, bodies and the planet.

VANCOUVER
OKANAGAN

15

wellbeing projects supported by Wellbeing Strategic Initiative Fund

VANCOUVER

31,658

healthy \$3 student meals sold by UBC Food Services' Food outlets

VANCOUVER
OKANAGAN

35,290km

cycled during Go By Bike Week saving 7,650 kg GHGs

VANCOUVER
OKANAGAN

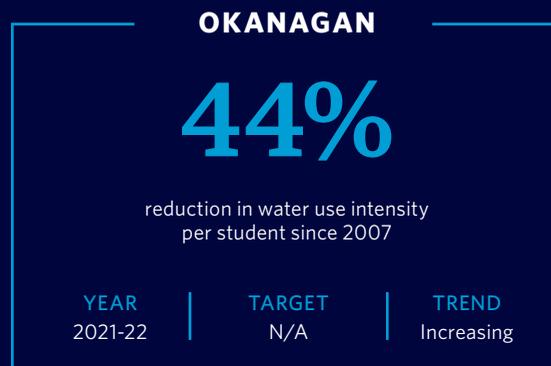
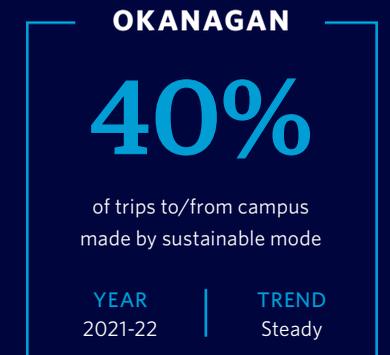
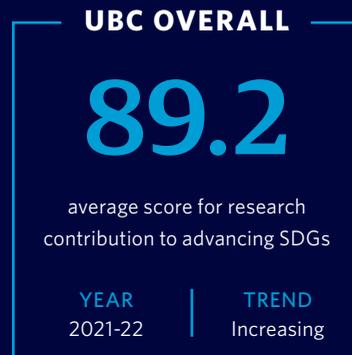
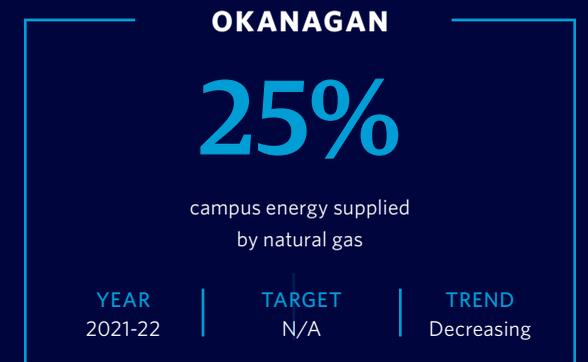
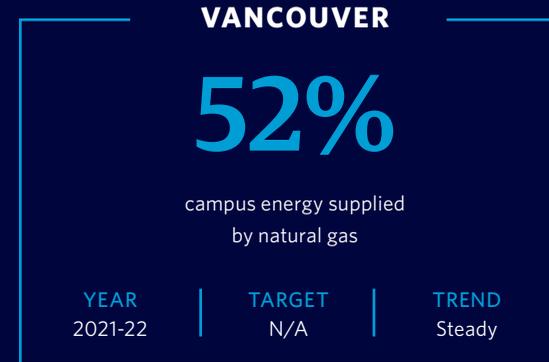
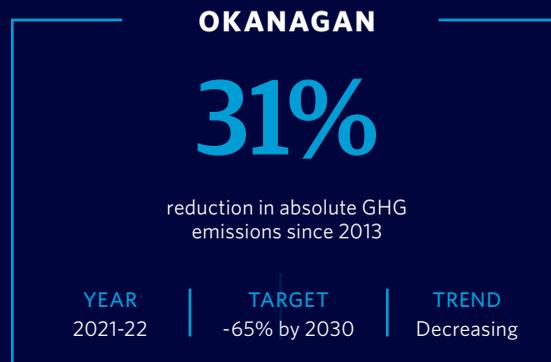
10th

World Health Organization conference attended



PERFORMANCE METRICS

Below is a snapshot of some of the metrics we use to measure performance against our sustainability goals. See more online at: <https://sustain.ubc.ca/dashboards>





THE UNIVERSITY OF BRITISH COLUMBIA

sustainability



Climate Emergency at UBC

Executive Summary 2021-22



Land Acknowledgment

UBC is situated within the traditional, ancestral, and unceded territory of the x^wməθk^wəy^əm (Musqueam), Sk̓wxwú7mesh (Squamish), Sel̓íl̓wítulh (Tsleil-Waututh) and Syilx (Okanagan) Nations.

COVER IMAGE

There is no planet B / Respect your mother

Credit:  Chris Yakimov

Introduction

UBC's response to the climate emergency has grown in 2021/2022 across its operations, academic initiatives, and partnerships.

Progress includes material reductions in UBC's direct greenhouse gas emissions and ambitious new plans to tackle indirect emissions. New hiring, hiring clusters, courses, certificates, programs, public events and faculty-led action show the increased academic emphasis on the defining challenge of our age. Climate-related partnerships and collaborations are flourishing within the university community and between UBC and the wider world. Work to embed climate justice within the university's fabric is proceeding.

That said, there is still much to do in implementing the recommendations made in the 2021 Climate Emergency Task Force (CETF) report. As the climate crisis continues apace, exacting its toll locally here in BC, and globally — most brutally on those who have done the least to contribute to global warming — the timeline for action must be accelerated if we are to make enough of a difference in time. As António Guterres, the United Nations Secretary-General of the United Nations, [says](#), "We need decisive action now to avert climate catastrophe. And for that we need solidarity. Saving this and future generations is a common responsibility."

This executive summary is the tip of the iceberg, a distillation of scores and scores of climate-change related initiatives across UBC. Climate change has been a priority for UBC for many years, and many initiatives began well before the CETF and its report. Many other initiatives are a direct result of the added urgency from the Declaration and CETF. For a more comprehensive view of work being done at UBC in response to and related to the climate emergency, please read the full report [Climate Emergency Task Force Report: Report on Progress 2021-22](#).

Summary of Progress

UBC declared a Climate Emergency in 2019, after which an independent Climate Emergency Task Force (CETF) made up of students, faculty, and staff from both campuses undertook an extensive community consultation process and produced the CETF report. This report identified nine strategic priorities and 28 recommendations. Select examples of 2021-22 actions for each priority area are listed below, drawn from the full report.

STRATEGIC PRIORITY I - Operationalize UBC's commitments to climate justice: Support climate leadership and initiatives led by Indigenous, Black, and People of Colour (IBPOC)

- UBC intensified its work on a suite of anti-racism actions, including the establishment of an Anti-Racism and Inclusive Excellence Task Force.
- Multiple public events from the Climate Hub and Sustainability Hub showcased IBPOC climate initiatives on and off campus.
- The Sustainability Hub's Climate Emergency Senior Co-Managers strengthened relationships and collaborations with IBPOC community members.

STRATEGIC PRIORITY II - Demonstrate institutional leadership on climate justice

- UBC Investment Management Trust developed the Responsible Investing Strategic Plan with the goal to reduce the portfolio's carbon emissions by 45% by 2030, and increased fossil fuel free and low carbon investment strategies to over \$400 million — representing approximately 40% of the portfolio's public equity holdings.
- Disbursement of a \$1.5 million Climate Emergency Fund accelerated seven student focused projects including a new Climate Emergency Scholars Group in the Public Scholars Initiative; a new Collaborative PH.D. on the Climate Emergency; and an expanded Social Impact Lab at the Centre for Community Engaged Learning. An enhanced climate focus was developed for existing programs such as SEEDS, Sustainability Scholars and Sustainability Fellows. Grants also supported student led work at the Climate Hub and Climate Justice UBC.
- The Department of Geography unveiled the Centre for Climate Justice led by noted activists and climate leaders Naomi Klein and Avi Lewis.

Summary of Progress

STRATEGIC PRIORITY III - Establish mechanisms and processes that ensure Indigenous perspectives, communities and worldviews shape the development and implementation of climate-related initiatives and policies

- Inaugural Indigenous Strategic Initiatives (ISI) Fund launched to implement the UBC Indigenous Strategic Plan (ISP), increasing capacity for Indigenous perspectives to shape climate policies through new grants.
- Sustainability Hub's Strategic Plan 2022-27 weaves ISP Actions throughout, highlighting intersections between Indigenous rights and climate justice, one example of how to integrate these linked issues.

STRATEGIC PRIORITY IV - Expand, strengthen and centre climate research at UBC

- Climate Emergency research initiatives from faculty included a 2-day symposium and the UBCO Climate/Justice Teach-In.
- Student Climate Emergency research initiatives included the Student Climate Research Slamposium and Climate Justice Research Collaborative.
- More and more research groups and centres addressed climate change and climate justice.

STRATEGIC PRIORITY V - Foster a culture of engagement & advocacy on climate action

- UBC conducted its first open delegate selection process for the climate Conference of the Parties (COP), and hosted public events before and during COP26.
- UBC's first Climate Emergency Week organized by the Sustainability Hub, Climate Hub, and AMS engaged the Vancouver campus with a pop-up tent, webinars, nature and wellness walks, art events and seminars.
- The Sustainability Hub launched the popular Climate Justice Series examining climate justice from local and

global perspectives and reaching thousands of students, faculty, staff, and community members. A spectrum of students, professors, alumni, elected politicians, writers, and activists spoke at ten webinars.

STRATEGIC PRIORITY VI - Support community wellbeing in the face of the climate crisis

- UBC Climate Hub's climate anxiety work included a Climate Wellbeing Engagement Network, Community Chats, Climate Wellbeing Resource Kit and a Climate Wellbeing Series.
- UBC Wellbeing's annual Move UBC campaign highlighted the intersections between physical activity, climate action and social justice, encouraging UBC communities to explore ways of moving that positively impact our minds, bodies, and the planet.

STRATEGIC PRIORITY VII - Expand climate education opportunities and resources for the UBC community and broader public

- Sixteen Climate Education Grants were awarded in 2021 - 2022 to UBC Vancouver faculty members, Climate Teaching Connectors completed its second successful year, and new online resources became available including the Sustainability Dashboards, Climate emergency course listing, and a Climate Justice Toolkit.
- A new Climate Studies and Action Certificate, available to all undergraduates in all disciplines, was approved and started in the fall of 2022.
- An Interdepartmental Climate Action Team was formed, building on and uniting Climate Action Committees or Teams in the UBC Library and Departments of Earth, Oceans and Atmospheric Sciences, Geography, and Asian Studies.

Summary of Progress

STRATEGIC PRIORITY VIII - Develop new and strengthen existing partnerships to tackle the climate emergency

- UBC's President and Vice Chancellor, Santa J. Ono, led the University Climate Change Coalition (UC3), and created a new UC3 Fellows network.
- Community partnerships on the climate emergency significantly expanded through Community-University Engagement Support projects; Living Lab (LL) competition awardees and the first off-campus LL project with Vienna House in east Vancouver; a Build Back Better in the Climate Emergency Roundtable with multiple partners; and expansion of the Sustainability Scholars graduate student internship program with numerous NGOs led climate action projects.

STRATEGIC PRIORITY IX - Accelerate emissions reductions at UBCV and UBCO in response to the climate emergency

- In 2021, UBC achieved a combined 25% reduction in total offsettable greenhouse gas (GHG) emissions at both campuses since 2007. The Vancouver campus recently invested in an expansion of the Bioenergy Research and Demonstration Facility (BRDF). Once the BRDF is fully functional, it is forecasted that campus operational GHG (Scope 1 and 2) reductions will achieve an estimated 60% reduction from the 2007 baseline.
- UBC's two ambitious Climate Action Plans 2030 (CAP 2030) are aiming for an operational GHG (Scope 1 and 2) reduction of 85 for the Vancouver Campus and a 65% reduction for the Okanagan Campus by 2030. Both plans also include a 45% reduction in emissions from extended impact sources (Scope 3 - including commuting, food, business air travel, embodied carbon, waste and materials, and paper) to align with the intent of UBC's Climate Emergency Declaration.

ANNUAL SUSTAINABILITY REPORT

Fin. year 2021-22

LINDA NOWLAN, SENIOR DIRECTOR, SUSTAINABILITY HUB
MICHAEL WHITE, AVP CAMPUS AND COMMUNITY PLANNING
ROB EINARSON, AVP FINANCE AND OPERATIONS, UBCO



What would you like to see
in next year's report?



TEACHING, LEARNING, STUDENT ENGAGEMENT

- **Enhanced academic offerings** incl. new Bachelor of Sustainability (UBCO, 4 yr.) and Certificate in Climate Studies and Action (UBCV, any undergrad degree)
- **UBC Sustainability Initiative renamed Sustainability Hub**; new 5-year strategic plan, mission to ‘inspire action’ through UBC’s academic and operational leadership
- **Grant funding of \$109K to support** six new sustainability and climate education projects over 2 years
- **Record number of Sustainability Scholars** in applied research internships with many new external partners
- **SEEDS Sustainability Program produced UBCV’s first campus ecological connectivity map**; informing future planning related to climate adaptation and resilience



Sustainability Hub launch on Main Mall



Sustainability Scholars working with Fraser Estuary Research Collaborative





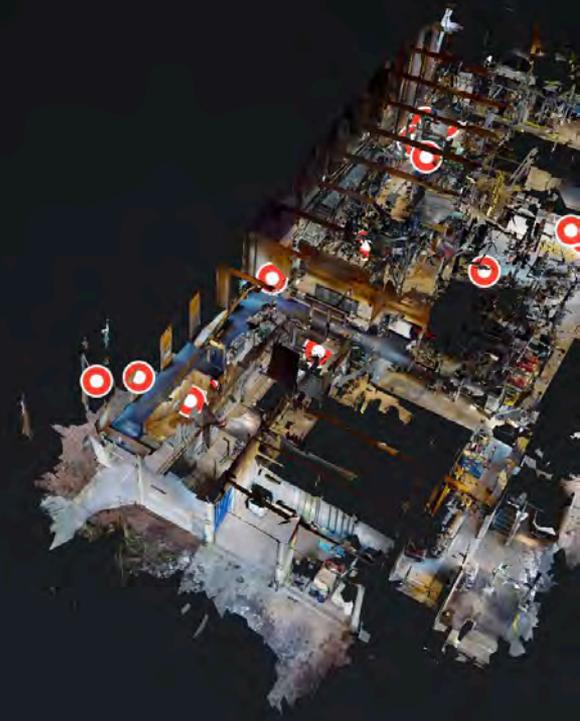
RESEARCH

- **Annual Sustainability Report includes 16 examples** from a remarkable array of research programs, including spotlight on experiential and field-based learning
- **Centre for Climate Justice open**, Co-Directors Naomi Klein and Candis Callison; collaborative, interdisciplinary and intersectional research on climate justice
- **\$200k four new Campus as a Living Lab projects** repairing electronics; design student-family housing; remote insect monitoring; ‘close the loop’ on carbon/nutrients research
- **UBCO two new Clusters of Research Excellence;** Urban Indigenous Wellbeing and Plastic Recycling
- **Western Economic Diversification Canada \$1.9 million** to establish the Cleantech Hub research facility at UBCO



OPERATIONS AND INFRASTRUCTURE

- **CAP 2030 goals of 85% (UBCV) and 65% (UBCO) reduction** in operational emissions endorsed by BoG and implementation is underway
- **BRDF12-Megawatt expansion project completed**, estimated operational GHG reductions (Scope 1 & 2) of approximately 60% below the 2007 baseline
- **UBCO demand-side management projects implemented this year** are estimated to reduce energy and emissions by 655,000 kWh and 146 tCO₂e per year.



360 Virtual Tour of BRDF



OPERATIONS AND INFRASTRUCTURE

- **New UBCV Water Pump Station meets 70%** of campus demand for domestic cold water; increases resilience
- **New Zero Waste Action Plan** to advance toward a Circular Economy at UBCV undergoing stakeholder feedback.
- **UBCO Skeena Residence achieves the first passive house** dormitory in Canada; awards incl. won BC's Net-Zero Energy-Ready Challenge
- **New Faculty & Staff Housing development 'Evolve'** provides 110 faculty and staff rental homes; targets REAP gold plus and Passive House certification



New Water Pump Station at UBCV

COMMUNITY

- **Campus Vision 2050 launched to develop a 30-Year Vision** and 10-Year Plan for Vancouver campus
- **Participation so far incl. 3,300 people**, plus dialogue sessions with 13 specific equity-deserving groups
- **Community feedback so far captured** in 'Needs and Aspirations' report; x^wməθk^wəy'əm and UBC co-developing a process for deeper land use engagement
- **TransLink survey found 92% of respondents** support the extension of the SkyTrain to UBC; endorsed by the Mayors' Council on Regional Transportation and confirmed in TransLink's Transport 2050 Plan.
- **New UBCO Transportation Plan completed**; provides direction for a shift towards more sustainable modes of travel



Campus Vision 2050 engagement

2022-23 PRIORITIES

- **Advance 20-Year Sustainability Strategy and Climate Emergency Task Force recommendations** in conjunction with related UBC strategic plans
- **Expand and strengthen Campus as a Living Lab**, including expansion to UBCO
- **Enhance learning opportunities, particularly on climate**, via new Extended Learning certificate, Catalyst program for co-curricular engagement, UBCO Climate Teach-Ins
- **UBCV and UBCO CAP 2030 implementation**, commence Climate Resiliency and Adaptation Strategy at both campuses to identify decarbonization pathways to meet 2030 targets
- **Skytrain to UBCV campaign**, expand cycling infrastructure, UBCO Transportation Plan
- **Deepen engagement with xwməθkwəy̓əm (Musqueam)** via Campus Vision 2050; dedicate space for a Syilx Okanagan Indigenous presence at UBCO





THE UNIVERSITY OF BRITISH COLUMBIA



Climate Emergency at UBC

Report on Progress 2021-22



Land Acknowledgment

The Sustainability Hub office is located at the UBC Point Grey campus situated within the traditional, ancestral, and unceded territory of the xʷməθkʷəy̓əm (Musqueam). As part of the larger UBC community, we are guests and settlers on the traditional, ancestral, and unceded territories of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), Sel̓ílwitulh (Tseil-Waututh) and Syilx (Okanagan) Nations. In our pursuit of sustainability, climate action and climate justice, we understand that protecting human rights is indelibly woven into the fabric of environmental protection and sustainability. As guests and settlers on Indigenous lands, we share an important responsibility for learning with and about our host Nations and strengthening these relationships.

One of the most prominent climate teachings we've learned from our hosts is that the ancestors of these lands fortified this area to "raise our warriors to protect Mother Earth..."¹ In our pursuit of climate justice, we remain committed to our collective responsibility to honour these teachings and adhere to the guiding principles and protocols shared with us from xʷməθkʷəy̓əm (Musqueam) elders and leaders. We respect and practice our shared responsibilities to engage in meaningful dialogue with our hosts and continue to build relationships grounded in mutual respect, trust, and reciprocity.

1 Morgan Guerin, 2021 CETF Report.

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Introduction



Credit: Sustainability Hub

This is the first progress review on the climate emergency at UBC since the Board of Governors and Senates unanimously endorsed in principle the Climate Emergency Task Force (CETF) report in early 2021. The Sustainability Hub is responsible for convening and coordinating people across UBC to make progress on the report's recommendations. Transparency and accountability are key to addressing its nine strategic priorities.

We applaud the university's leadership, and acknowledge UBC President Santa J. Ono, the UBC Board of Governors, the UBC Senates, and the entire student body for championing this work. We're proud of the record so far, including two new ambitious Climate Action Plans 2030 for both campuses to dramatically

reduce operational and embodied emissions; progress on divestment of fossil fuels from UBC's portfolios and the new Responsible Investment Strategic Plan; the climate justice initiatives we and so many others have led; and the wide array of new courses, grants, partnerships, projects, public events, living labs, student and faculty programs, artistic, scientific, industrial innovations, and other unique initiatives happening throughout UBC.

In this progress report, we celebrate the creativity and diversity of climate emergency related actions at UBC to inspire further action. More is yet to be done to bring key initiatives to life from the CETF report, especially increasing climate change teaching and research, the university's primary activities. More needs to be done to address the disproportionate impacts of climate change on Indigenous and racialized people, and on vulnerable groups such as the elderly and those living with a disability, in poverty, or in ill-health. Nature itself is also at grave risk from human-caused climate change. Collective action will support the systems level change needed for a just and sustainable future.

The progress listed here is a snapshot of UBC's emerging response to the climate emergency. The Sustainability Hub team compiled this report with help from many. Special thanks to Campus + Community Planning, the Centre for Community Engaged Learning, the UBC Climate Hub, UBC Finance, the Pacific Institute for Climate Solutions, and UBC Wellbeing.

It's impossible to be comprehensive about climate related activity across two campuses with over 70,000 students and close to 19,000 faculty and staff, and we welcome your input to make future reports more complete. If you don't see your story here, we invite you to share your research, classes, programs and projects, and your perspective on what you'd like to see happen at UBC to truly tackle the climate emergency.

LINDA NOWLAN
Senior Director, Sustainability Hub

Background

“Together, the strategic priorities highlight UBC’s mutually reinforcing roles as a leader, enabler, and partner in addressing the climate crisis. Collectively, the priorities outline a vision for UBC’s existing leadership in reducing local emissions to be paired with efforts to drive collective impact in local, regional, and international climate action. Efforts to advance a just and sustainable society must be embodied in how UBC acts at an institutional level, supports, and empowers its communities, and engages with its partners.” - 2021 CETF Report

UBC’S CLIMATE EMERGENCY TASK FORCE REPORT

In 2019, spurred by student advocacy, [UBC declared a Climate Emergency](#). This declaration recognized UBC’s fundamental responsibility to foster a culture of engagement and advocacy on climate action.

Following the declaration, a Climate Emergency Task Force (CETF) made up of students, faculty, and staff from both the Vancouver and Okanagan campuses undertook an extensive community consultation process and produced a public report. The CETF was co-chaired by Michelle Marcus, a UBC undergraduate student and activist with Climate Justice UBC, and Professor Walter Mérida, Associate Dean of Research and Industrial Partnerships in the Faculty of Applied Science, and a Senior Advisor on Climate Change to UBC President Santa J. Ono. The final [CETF report](#) was published in January 2021, featuring climate justice and Indigenous engagement as key themes. Nearly 4,000 UBC community members helped shape the report, whose recommendations span community,

academic (teaching, learning, and research), and operational dimensions of the University. One month after the CETF report was published, it was endorsed unanimously in principle by UBC President Santa J. Ono, the UBC Board of Governors, and the UBC Senates.

THE CETF’S NINE STRATEGIC PRIORITIES

The CETF report identifies nine strategic priorities and 28 recommendations for effective climate action by UBC. According to the report, any climate-themed activity stemming from its recommendations must serve at least one of the following three commitments: (1) addressing the impacts of climate change; (2) addressing past and ongoing contributions to climate change and shifting to practices and policies at UBC and beyond that minimize or eliminate human-related climate change (keeping warming within 1.5°C); and (3) embedding a lens of climate justice.

CETF REPORT STRATEGIC PRIORITIES



Operationalize UBC's commitments to climate justice: Support climate leadership and initiatives led by Indigenous, Black, and People of Colour

1. Support fair compensation and representation for UBC's IBPOC community leading climate initiatives
2. Support off-campus IBPOC-led climate initiatives
3. Engage further with Black and POC Communities
4. Examine and transform institutional practices and policies that reproduce inequalities for IBPOC communities at UBC



Demonstrate institutional leadership on climate justice

1. Establish climate justice standards for the university's activities
2. Demonstrate and advocate for justice-based climate action
3. Enact commitments to divestment and sustainable investment



Establish mechanisms and processes that ensure Indigenous perspectives, communities, and worldviews shape the development and implementation of climate related initiatives and policies

1. Leverage UBC's Indigenous Strategic Plan and Inclusion Action Plan as a basis for long-term engagement with Indigenous communities
2. Provide resources that support staff to work on Indigenous engagement around UBC plans, policies and initiatives
3. Create a standing Indigenous community advisory committee on the climate emergency
4. Welcome and develop greater institutional capacity for engaging with the full range and complexity of Indigenous perspectives



Expand, strengthen and coordinate climate research at UBC

1. Establish a body for climate research
2. Start a climate emergency fellows program
3. Conduct climate-focused faculty hiring
4. Recognize and reward community engaged scholarship

CETF REPORT STRATEGIC PRIORITIES



Foster a culture of engagement & advocacy on climate action

1. Encourage civic engagement
2. Increase capacity and resources for engagement



Support community wellbeing in the face of the climate crisis

1. Build capacity for mental health, resilience and community care strategies
2. Update emergency preparedness and response plans
3. Collaborate to expand public discourse around climate change and public health impacts



Expand climate education opportunities and resources for the UBC community and broader public

1. Advance climate education opportunities across disciplines
2. Support climate education pedagogy and curriculum development
3. Expand climate education and professional development for UBC community members and UBC partners



Develop new and strengthen existing partnerships to tackle the climate emergency

1. Coordinate a climate knowledge to action central contact
2. Scale up Living Lab research collaborations with diverse partners beyond campus
3. Community Councils - expand and deepen external engagements
4. Develop a strategic partnership framework



Accelerate emissions reductions at UBCV and UBCO in response to the Climate Emergency: Climate Action Plan 2030

1. Support the forthcoming recommendations and new interim emission targets emerging from the Climate Action Plan 2030 process, which establish specific emissions targets responding to UBC's alignment with 1.5°C

Background

The Intergovernmental Panel on Climate Change (IPCC) defines [climate justice](#) as: “Justice that links development and human rights to achieve a human-centred approach to addressing climate change, safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its impacts equitably and fairly.”



Credit: [Jon Tyson](#)

CLIMATE JUSTICE GLOBALLY AND LOCALLY

Examples of climate injustice are found everywhere. Globally, the [richest 1%](#) of people produce more than double the carbon emissions of the world's poorest half. Close to one quarter of cumulative fossil fuel CO₂ emissions over the past 250 years [came](#) from the United States, compared to just 2.8% from the continent of Africa.

Compared to other wealthy nations, [Canada](#) is among the highest per-capita carbon emitters. The changing climate will exacerbate the health and socio-economic inequities already experienced by [First Nations, Inuit, and Métis peoples](#), including respiratory, cardiovascular, water and foodborne, chronic and infectious diseases, as well as financial hardship and food insecurity.

Children and youth in poorer countries will experience disproportionate health impacts. Between 2030 and 2050, according to the [World Health Organization](#), climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhea, and heat stress.

In British Columbia the [disproportionate impacts of climate change](#) are widespread. UBC researchers are at the forefront of analyzing the health and justice impacts of climate, illustrated in part by this report's stories about the School of Population and Public Health's Professor Michael Brauer and his research team's mapping of [four regional climate hazards](#) and the work of Associate Professor of Geography Naomi Klein's [Centre for Climate Justice](#).

FEATURE



Credit: [Murray Foubister](#)

Climate Change in the Real World: BC's Heat Dome

People across BC directly experienced climate change and climate injustice in the deadly heat dome, devastating wildfires, and destructive floods that struck in 2021. At the end of June 2021, the village of Lytton set a Canadian temperature record of 49.6°C, before burning to the ground. [Peer reviewed science](#) found that this heat dome was “virtually impossible without human-caused climate change.” Tragically, the 2021 heat dome was associated with [740 excess deaths](#) in British Columbia. Elderly people, Indigenous Peoples, people with disabilities, immigrants, precariously housed, and low-income people were

disproportionately impacted, according to the Death Review Panel on [Extreme Heat and Human Mortality: A Review of Heat-Related Deaths in BC in Summer 2021](#) commissioned by the BC Coroner.

UBC researchers documented extreme ecosystem impacts in BC from the 2021 heat dome. More than a [billion sea creatures perished](#) due to the heat. In addition to the mass-mortalities of marine life, UBC researchers [documented](#) how the heat dome reduced crop and fruit yields, exacerbated river flooding from rapid snow and glacier melt, and contributed to a rapid increase in 13 wildfires, which contributed to devastating landslides in the fall of 2021.

Background



Credit: Julia Kidder

“The approach to UBC’s Climate Emergency Response must be both distributed and coordinated. It must be distributed, so that the principles of the climate emergency declaration are embedded within UBC’s wide-ranging activities and priorities. It must also be coordinated to ensure the climate emergency remains a top institutional priority and those responsible for implementation are supported.”

- 2021 CETF Report

THE SUSTAINABILITY HUB AND THE CETF REPORT: SHARED AND DISTRIBUTED IMPLEMENTATION

The [Sustainability Hub](#) has a mission to inspire the UBC community to act on the planet’s most urgent challenges through UBC’s academic and operational sustainability leadership

Confronting the climate emergency is a shared responsibility and requires coordinated action and commitment to affect systems level change. Everyone has a role to play in addressing climate change from the Board of Governors to the President to the Vice-Presidents to Deans, faculties, staff and students. The latest [UBC organizational chart](#) shows who is involved.

Working together with, and inspired by, the diverse array of climate leadership from all corners of the university, the Sustainability Hub is the office at UBC primarily responsible for convening and coordinating the implementation of the CETF report’s recommendations.

Initial Impacts of CETF Report

“UBC acknowledges the urgency of the climate crisis and we must directly face the coming challenges. At this pivotal moment, the decisions and actions we take today will reverberate beyond our own borders and lifetimes,” – Santa J. Ono, President and Vice-Chancellor, UBC



Credit: Julia Kidder

YEAR ONE OF CETF REPORT IMPLEMENTATION AT UBC: INITIAL IMPACTS

The work of the CETF report has already made a significant impact by accelerating UBC Vancouver’s Climate Action Plan 2030, developing UBC Okanagan’s first Climate Action Plan, and divestment from fossil fuels, spawning further investment into new and expanded learning and research activities, and educating the community on the disproportionate impacts of climate change on systemically marginalized groups.

This report on progress in the first year of implementation covers the period from February 2021 to March 2022. Action directly linked to the implementation of the CETF report’s nine strategic priorities is included, as well as more organic and grassroots initiatives across the university in response to the climate emergency.

- Addressing the climate emergency is now a University commitment: The CETF report was unanimously endorsed in principle by UBC President Santa J. Ono, the UBC Board of Governors, and the UBC Senates.
- Targeted climate funding: The CETF report triggered increased allocations of resources across the University, supporting new UBC Climate Hub and Sustainability Hub staff positions. Student advocacy resulted in the creation of a one-time \$1.5 million Climate Emergency Fund from incremental student tuition revenues, which has been earmarked for seven initiatives that foster climate action engagement and advocacy, support community wellbeing, and expand climate education opportunities.
- Increased accountability: UBC is accountable under BC’s Climate Change Accountability Act to achieve carbon neutrality, and file an annual public report on its actions. UBC’s 2021 report states: “ By establishing the UBC Climate Emergency Task Force and endorsing the new climate action plans, the UBC Board of Governors has confirmed that climate action continues to be a top strategic priority for the University.” The CETF report tracks and documents the broad actions being taken by the UBC community beyond campus operational improvements to address the climate emergency, increasing the transparency and accountability of overall progress.

CALLING IN ACTION

Want to be involved directly? Want to help hold the university and its institutions accountable to climate emergency policies? Want to make climate change teaching a priority in your department? Want to build urgency around the creation of a university Climate Institute as recommended by the CETF Report? Or want to ensure that all UBC graduates leave the university with climate justice literacy?

Here are some key pathways for students, faculty, and staff to advocate for change.

LEARN

- Attend or watch past recordings of events such as the [Climate Justice Series](#) and [Climate Solutions Showcase](#). Look for upcoming events, and suggest topics and speakers.
- **Students:** focus on climate in your studies and co-curricular activities. Look at the [Climate Course listing](#). Consider the [Climate Certificate](#) or the UBC Climate Hub's [Climate Justice Research Collaborative](#).

ACT

- [Advocate](#) to your professors, deans, faculties, and senior administrators for more climate education, training, and community engagement courses, activities, and opportunities.
- Help implement [UBCV Climate Action Plan 2030 \(CAP 2030\)](#) and [UBCO CAP 2030](#) by learning its details, communicating its targets, and participating in engagement campaigns to reduce emissions.
- Call on the UBC Board of Governors to keep the climate emergency at the forefront of UBC by letting your elected student and faculty Governors know this is a top priority for you.
- **Students:** Let your student elected representatives at the UBC Alma Mater Society know this is a priority.

CONNECT

- **Faculties:** Consider forming a Climate Action Committee and join the Interdepartmental Climate Action Team (ICAT).
- **Staff:** Participate in your faculty or unit's Climate Action Committee. Organize events to raise awareness.
- **Students:** Join a [student group](#) on climate, participate in programs like [SEEDS](#) and [Catalyst](#), or apply to be a [Sustainability Scholar](#) as a graduate student or to the [Public Scholars Initiative](#) as a doctoral student.

ACCESS FUNDING AND RESOURCES

- **Faculty:** Consider how to add climate to your courses and curricula and apply for a [Climate Education Grant](#) to help you do this. Invite a paid guest lecturer from the [Climate Teaching Connector](#) to your class. Encourage your department to organize climate-related events and share them with the Sustainability Hub who can amplify them through our networks. See page 44 for ideas.
- Use examples from other places at UBC and from Climate Justice Toolkits to start a climate action plan for your department.

Looking for more ways to connect and act?
Reach out to [the Climate Emergency Team](#)
at climate.emergency@ubc.ca.

Strategic Priority I

Operationalize UBC's Commitments to Climate Justice: Support Climate Leadership and Initiatives Led by Indigenous, Black, and People of Colour

Compounding the crisis of a deteriorating planet are the troubling and persistent inequities in society. The people most impacted by climate change in BC (for example, those who died during the 2021 heat dome) did the least to cause many of the problems – in general, their emissions and ecological footprints are a fraction of the average British Columbian. Acting on these inequities is at the heart of this priority, met in part by UBC's many initiatives on anti-racism, equity, inclusion, and diversity.

When UBC made its Climate Emergency Declaration in 2019, it made a bold commitment to advance, “just and inclusive climate solutions that work towards dismantling historic and existing barriers faced by marginalized communities.” Building on priorities laid out in other UBC strategic plans, the CETF report states that UBC is committed “to honour and amplify the labour and leadership of Indigenous, Black, and People of Colour (IBPOC) community members through adequate compensation and integration of their ongoing feedback throughout UBC's climate emergency response.” The CETF report recommends that UBC focus on increasing representation of its IBPOC community, and support off-campus IBPOC-led climate initiatives.

ANTI-RACISM ACTION

- Addressing the social inequities laid bare by the climate emergency demands a new approach. To avoid perpetuating deeply harmful practices, it's necessary to, “remain vigilant and take concrete steps towards including the voices of those who are most vulnerable to climate change impacts,” as [Carbon Brief](#) writes.

UBC is combating racism, which is a key dimension of climate justice strategies. In 2021, President Santa J. Ono's [initiative on anti-racism](#) included the appointment of a Senior Advisor to the President on Anti-Racism and Inclusive Excellence and the establishment of an Anti-Racism and Inclusive Excellence Task Force. Other initiatives include the appointment of two Executive Co-Leads to, “... provide a critical bridge between the UBC Executive and the members of the UBC community who self-identify as Indigenous, Black, and People of Colour (IBPOC),” the creation of an [Anti-Racism Initiatives Fund](#), administrative support for IBPOC students to develop anti-racist initiatives, and a webinar series on systemic racism.

I. IBPOC-Led Climate Justice



Credit: [☞ Rachel Topham Photography](#)

INCREASING IBPOC HIRING AT UBC

- Work continues implementing the [☞ Indigenous Strategic Plan \(ISP\)](#) and its action to increase Indigenous hiring. Increased IBPOC faculty hiring is also a priority of the [☞ Anti-Racism and Inclusive Excellence Task Force](#). A number of new IBPOC faculty were hired in 2021/22.

Employment equity reports show that in 2019 new hires included 312 professors, with 4.3% Indigenous people and 24.7% racialized people; in 2020 new hires included 242 professors with 4.8 % Indigenous people and 36.5% racialized people; and in 2021 new hires included a renamed group of 578 University Teachers (now including post-docs) with 5.2% Indigenous people and 32.0% Racialized people.

SHOWCASING IBPOC CLIMATE INITIATIVES ON- AND OFF-CAMPUS

- The UBC Climate Hub's Climate Solutions Showcase focused on the themes of 'climate, race, and intersectionality' and the disproportionate affects of the climate crisis on Black and Indigenous communities through multiple events hosted in the time frame of this report with IBPOC guests from UBC and beyond. Details of the events are in the UBC Climate Hub's 3rd [☞ Annual Report](#). For example, 'Climate Justice: Reparations and Migration' featured noted scholar Dr. Maxine Burkett from the University of Hawai'i.

- The UBC Indigenous Strategic Plan (ISP) guides meaningful reconciliation with Indigenous communities and the implementation of Indigenous Peoples' rights across both campuses. The inaugural [☞ Indigenous Strategic Initiatives Fund](#) is the first of its kind at UBC – an Indigenous-led fund for Indigenous-focused projects. Several proposed projects connect Indigenous rights to the climate emergency.

- The Sustainability Hub's two Climate Emergency Senior Co-Managers have developed new and strengthened existing relationships with IBPOC community members and collaborated on ideas to transform inequitable institutional practices and policies and embed IBPOC perspectives into UBC's Climate Emergency response and future climate plans, policies, and initiatives.

- Recognizing the lack of diverse perspectives in climate conversations, Sitashma Thapa and UBC student Simone Rawal launched [☞ Anthropause](#), a podcast amplifying voices from the Global South. Born and raised in Nepal, they decided on a podcast as a platform for important voices that often remain unheard. South Asia has deeply rooted systemic inequalities, as well as rich and diverse cultures, values, and religions. Anthropause guests shared stories throughout 2021/22 about South Asia's holistic approaches to climate problems, including why it is important to include children's voices in climate change discussions, and a conversation with a United Nations Development programme expert about Bhutan, 'The Carbon-Negative Kingdom.'

- The Sustainability Ambassadors program's IBPOC Engagement Consultation project held community listening sessions and issued a survey to IBPOC community members at UBC on engagement issues, and is collaborating with the Community Engagement Network, the Office of Equity and Inclusion, and UBC Wellbeing to transform institutional practices and policies that reproduce inequalities for IBPOC communities at UBC.

Strategic Priority II

Demonstrate Institutional Leadership on Climate Justice

Demonstrating institutional leadership on climate justice means embedding climate justice throughout UBC's activities and addressing the inequities associated with the causes, impacts, and solutions to climate change.

The CETF report's recommendations on this priority include enacting commitments to divestment and sustainable investment and demonstrating and advocating for justice-based climate action. Short-term actions include embedding climate justice values into investment screening, investing in just community projects, and publicly reporting on progress.

DIVESTMENT AND RESPONSIBLE INVESTMENT

- UBC signed the [UN Principles of Responsible Investing](#) and [Investing to Address Climate Change: A Charter for Canadian Universities](#). This commits UBC to incorporate environmental, social, and governance issues into investment decisions, and to encourage other universities to do the same.
- UBC's Board of Governors endorsed UBC Investment Management Trust's (UBC Investment Management) comprehensive [Responsible Investing Strategic Plan](#). The Responsible Investing Strategy sets priorities to reduce climate change related risk in UBC's portfolios while continuing to uphold fiduciary duties. Key pillars of the Strategy are (i) Divestment; (ii) Active

Ownership; (iii) Disclosure; (iv) Measurement; and (v) Leadership and Advocacy.

- UBC Investment Management published its inaugural [Responsible Investing Report](#) in May 2022 that outlines the Responsible Investing Strategy in detail and achievements made in executing the Strategy through December 2021 .
- A new 45% Carbon Emissions Reduction target is now in place. As part of the Responsible Investment Strategy, UBC Investment Management set a goal to reduce the portfolio's carbon emissions by 45% by 2030. This ambitious goal put UBC at the forefront of Canadian universities, and spurred similar commitments by other universities. Through December 31, 2021, the UBC endowment's public equity carbon footprint - a measure of UBC's share of the carbon emissions owned through its equity investments - has decreased by 47% versus a baseline established in 2019. UBC Investment Management is actively working on expanding its portfolio of carbon measurement and reporting beyond public equities as robust data becomes available and common measurement methodologies are established in the investment industry.
- Over \$400 million transitioned: Since the beginning of 2020, UBC Investment Management has helped

II. Demonstrate Institutional Leadership



Credit: David Tindall

UBC grew its exposure to fossil fuel free and low carbon investment strategies to over \$400 million — representing approximately 40% of its public equity holdings. These investments include strategies that seek to invest in opportunities to help transition to a more sustainable global economy, as well as investments that are benchmarked against a Paris-aligned low carbon index that embeds an annual carbon reduction glidepath needed to achieve a 1.5 degree target by 2050.

- **Endowment Climate Risk Study:** In 2021 UBC Investment Management, in partnership with Ortec Finance, conducted a climate risk analysis on the UBC Endowment Fund that incorporated “climate aware” investment return assumptions and climate pathway scenario analysis to understand risks to future portfolio returns and make more informed decisions on the strategic asset mix. Ortec Finance is

a Netherlands-based firm with extensive expertise in climate risk modelling, developed in conjunction with Cambridge Econometrics, Duke University, and the Potsdam Institute for Climate Studies. UBC Investment Management is one of the first institutions in Canada to incorporate in-depth climate risk analysis into the strategic asset allocation decision-making process.

STUDENT-LED CLIMATE EMERGENCY PROGRAMS

- UBC continues to fund the [UBC Climate Hub](#), a unique student-led initiative with both student and non-student staff that empowers students to take systemic action on climate justice through a variety of innovative student-developed and led programs.
- The UBC Climate Hub provided advice on integrating a climate justice lens into the UBC Climate Action Plan 2030 and the UBC Campus and Community Planning District Energy System transition pathway analysis.

II. Demonstrate Institutional Leadership

“When UBC passed the current emergency declaration, that really got my attention. I think a lot of us are sort of waiting to figure out what that means, in real terms. I see the Centre as a place where we really figure that out.” - Naomi Klein, *the National Observer*, June 2021

NEW ACADEMIC CENTRE FOR CLIMATE JUSTICE

World-renowned climate activists and journalists Naomi Klein and Avi Lewis joined as faculty at UBC’s Department of Geography in the new [Centre for Climate Justice \(CCJ\)](#) in the fall of 2021, co-leading this work with an interim executive committee to bring together activists, policy makers, elders, scholars and frontline communities. Klein is a best-selling author known across the globe for her work in climate justice and critiques of globalized capitalism. She has written eight critically-acclaimed books, including *The Shock Doctrine*, *On Fire*, *No is Not Enough*, and *This Changes Everything*. She was appointed as the inaugural Faculty of Arts Chair in Climate Justice in September. Canadian documentary filmmaker Lewis joined the university as a part-time faculty member and will teach courses focusing on social and political change, communication, and documentary filmmaking.

The UBC CCJ was approved by the Faculty of Arts on November 25, 2021 with support from Academic Excellence Funds, and the departments of Anthropology, Critical Indigenous Studies, Geography, History, the School of Public Policy and Global Affairs, Sociology, English Languages and Literatures, and the Institute for Gender, Race, Sexuality and Social Justice. The Centre for Climate Justice is an interdisciplinary initiative that aims to advance transformative social, political, and economic changes necessary to address the climate crisis and other environmental injustices while advancing equity and addressing ongoing oppressions. The Centre will directly support the

strategic priorities in the UBC Climate Emergency Task Force report, as well as the UBC 20-year Sustainability Strategy, Shaping UBC’s Next Century (UBC’s strategic plan), UBC Indigenous Strategic Plan, and the UBC Inclusion Action Plan, by supporting collaborative, interdisciplinary, and community-engaged research across diverse knowledge systems and geographies to meet the demands for climate justice within and beyond UBC.

- The CCJ’s mission directly serves the goals laid out in UBC’s Declaration on the Climate Emergency to “effect change beyond our institutional boundaries,” and to enact, “climate solutions that reflect our commitment to UNDRIP and the human rights of Indigenous Peoples.”
- The CCJ secured a Cluster Research Grant to support Climate Justice Partnerships to facilitate collaboration between frontline communities experiencing climate impacts and the UBC research community. As a research arm of the CCJ, this transdisciplinary collaborative conducts community-driven research focused on unequal impacts of warming and develops innovative policy responses to advance equitable and just climate action.
- Faculty with the CCJ secured three Community-University Engagement Support grants for emerging partnerships with First Nations and other research partners.

For more information contact: Sara Nelson, Research Manager, sara.nelson@ubc.ca

II. Demonstrate Institutional Leadership



Credit: UBC Okanagan Communications and Marketing

NEW UBC OKANAGAN DEGREE PROGRAM

UBC Okanagan has launched its new [Bachelor of Sustainability \(BSust\)](#), a first of its kind in Canada. The new degree is interdisciplinary to the core because no single academic discipline can address issues like climate change and biodiversity loss in their entirety. Students will choose from one of four concentrations: environmental analytics, environmental conservation and management, environmental humanities, or green chemistry. All students in the program are required to take an Indigenous Studies course that introduces them to concepts of Indigenous knowledge, which will contribute to advancing reconciliation with Indigenous Peoples.

INTERNATIONAL LEADERSHIP IN UNIVERSITY NETWORKS

UBC's President Santa J. Ono led the [University Climate Change Coalition \(UC3\)](#), a group of 22 large research universities across Canada, US, and Mexico collaborating to accelerate climate action at campus, regional, and international scales from 2020 to 2022. Under his leadership, a Climate Fellows program was created with one cohort focused on climate justice.

FEATURE



“But solving climate change isn’t easy. It requires challenging the status quo and completely transforming how we get our energy and sustain our economies. But what is the purpose of the university if not to forge new ways of doing things?” – Michelle Marcus, *The Talon*, November 2019

Student protestors at the 2019 UC3 Conference at UBC. Credit:

Student Activism and the Push for Divestment

The story of how UBC finally agreed to divest its nearly \$2 billion endowment from fossil fuels is an example of the momentous change that students on campus — in this case the student group Climate Justice UBC — can drive through perseverance, planning, and activism.

“We wanted to show students and other community members that we could leverage our collective power to create systemic change, change much bigger than what an individual can do alone,” said Michelle Marcus, an organizer with Climate Justice UBC who led the successful campaign for UBC to declare a climate emergency and commit to fully divesting from

fossil fuels, and went on to co-chair the UBC Climate Emergency Task Force. Michelle also noted: “The purpose of divestment is not to directly bankrupt the fossil fuel industry financially; it’s to politically bankrupt it by taking away social license.”

UBC’s endowment is the second largest of any Canadian university at nearly \$2 billion and as of 2016, the Sustainability and Education Policy Network estimated UBC to have the most endowment funds invested in fossil fuels – over \$120 million. In 2020, UBC announced plans to divest the endowment of fossil fuel investments entirely by 2030 and to reduce the emissions of its portfolio by 45% in ten years. Student groups are now calling on the university to speed up that timeline and complete their fossil fuel divestment by 2025.

FEATURE

\$1.5M awarded from Climate Emergency Fund Magnifies UBC's Climate Emergency Response

A major boost to UBC's climate emergency response has come from the [Climate Emergency Fund \(CEF\)](#). Elected UBC student leaders in the Alma Mater Society and Graduate Student Society with advocacy from the UBC Climate Hub, created the fund, mobilizing \$1.5 million in incremental funding from tuition for grants for student-chosen priorities from the CETF report. The CEF grants are for two years and expire in fall 2023.

Funds were awarded to seven groups, all of which significantly enhanced UBC's climate emergency response.

\$362,100 for the student led [UBC Climate Hub](#) provided core funding for two full-time staff and multiple part-time student staff positions, and increased its ability to provide climate-related community building, advocacy, and justice services.

\$323,500 for the [Interdisciplinary Collaborative Research PhD](#) supported the development of a new pilot collaborative PhD cohort on the climate emergency, the first of its kind at UBC.

\$281,143 for the [Sustainability Hub](#) went to accelerating and amplifying its core programs for students and faculty – Sustainability Ambassadors, Scholars, and Fellows – to concentrate more on climate action. New initiatives from this funding enabled student assistance to prepare an online [Mindful Consumption Guide](#) to help the UBC community be conscious about their consumer choices to reduce waste, pollution, GHG emissions, and unfair labour practices. This funding also supported one of UBC's UC3 Fellows, doctoral student Jenalee Kluttz, who developed a [Climate Justice Toolkit](#) intended for a broad range of institutions and organizations seeking to embed equity and justice approaches to their climate emergency responses.

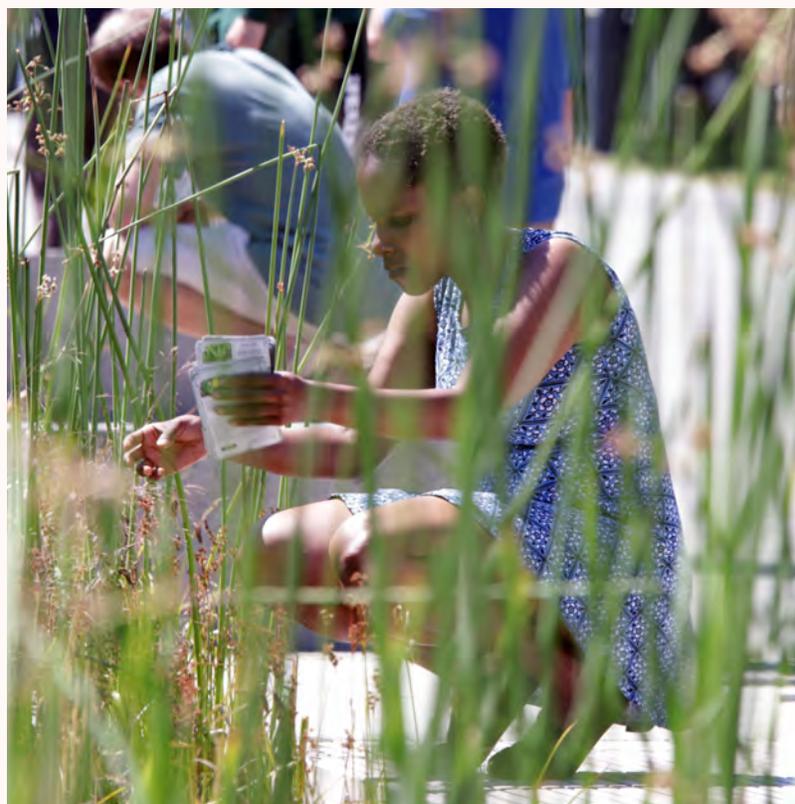
\$201,762 for the [Centre for Community Engaged Learning](#) allowed for the expansion of its Social Impact

Lab with a new focus on [Activating Student Change Agents on the Climate Emergency](#).

\$162,435 for [Campus and Community Planning](#) went to [SEEDS](#) student-led Interdisciplinary applied research, engagement, and knowledge mobilization.

\$143,500 for the [Public Scholars Initiative \(PSI\)](#) spurred the creation of a Climate Emergency Scholars Group. This group of UBC doctoral students' research extends beyond the academy and beyond traditional disciplinary approaches, to have a tangible impact for the public good through collaborative, action-oriented, and/or creative forms of scholarship in their dissertation work.

\$24,460 went to the student group [Climate Justice UBC](#) for funding to support coordination of their activities on divestment of fossil fuels, community reinvestment, and student engagement.



Credit: Sustainability Hub

Strategic Priority III

Establish Mechanisms and Processes that Ensure Indigenous Perspectives, Communities, and Worldviews Shape the Development and Implementation of Climate-related Initiatives and Policies

“The negative impacts of climate change disproportionately affect Indigenous Peoples, amplifying the need for Indigenous perspectives, communities, and worldviews to inform the development and delivery of institutional climate emergency plans, strategies, and activities. In addition, Indigenous peoples’, “legal position in settler societies and institutionalized colonialism limit their ability to adapt to and cope with climate change. This amplifies the need for Indigenous perspectives, communities, and worldviews within broader institutional climate emergency plans, strategies, and activities.”

- 2021 CETF Report

The scale of action needed to address the climate emergency requires new ways of thinking and doing that bridges Indigenous ways of knowing with science. This priority ties closely to UBC’s Indigenous Strategic Plan (ISP), and its rights-based approach to acting on the Truth and Reconciliation Commission’s Calls to Action, the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), and the National Inquiry into Missing and Murdered Indigenous Women and Girl’s report. When the ISP was adopted in 2020, UBC became the first university in North America to commit to implementing UNDRIP.

Students, faculty, and staff throughout UBC are exploring opportunities to apply UBC’s ISP and embed Indigenous perspectives into climate-related policies and initiatives.

III. Ensure Indigenous Perspectives Shape Climate Policy



ACTION 8: Provide free and publicly accessible educational tools, events and resources that promote the local and global implementation of Indigenous peoples' human rights. Sustainability Hub response: Climate Justice Series invited perspectives from a cross-section of UBC's Indigenous students and scholars, community leaders, and members of our Host and Partner Nations.

ACTION 10: Create dedicated strategic programming to catalyze research that is co-developed with and led by Indigenous communities locally and globally. Sustainability Hub response: Climate Emergency team exploring intersections between Indigenous Rights and Climate Justice, with a long-term goal of creating a standing Indigenous advisory climate committee, as CETF report recommends.

ACTION 22: Identify and make visible the generational connections of Indigenous peoples to culturally significant places across UBC campuses. Sustainability Hub response: Exploring a xʷməθkʷəy̓əm (Musqueam) Artist Residency at the Centre for Interactive Research on Sustainability, to create visual art to address climate change and the human relationship to the "more than human" world.

ACTION 23: Implement an Indigenous procurement strategy which prioritizes the provision of goods and services from Indigenous businesses and vendors. Sustainability Hub response: Developed a unit-wide Diverse Procurement policy.

The progress reported on this page relates to the Sustainability Hub's work to implement both the ISP and the CETF, and is just one example of these intersections.

Many others across UBC work along the intersections of Indigenous rights and the climate emergency. We invite you to share your experience of a broader UBC perspective by contacting climate.emergency@ubc.ca.

ACTION 12: Support research opportunities for students to become global leaders in the advancement of Indigenous knowledge systems. Sustainability Hub response: Expansion of Sustainability Scholars applied research internships program to embed Indigenous perspectives into climate policies in multiple projects.

ACTION 13: Co-develop research protocols and community-specific ethical research guidelines with interested community partners. Sustainability Hub response: Working with the Indigenous Research Strategic Initiative and others to respond throughout our work.

FEATURE



A photo of a Tsilhqot'in drum. The Tsilhqot'in National Government and UBC signed a memorandum of understanding in December 2021. Credit: [Laureen Carruthers](#)

Tsilhqot'in National Government and UBC sign [memorandum of understanding](#)

The Tsilhqot'in National Government (TNG) in central British Columbia is comprised of six First Nation communities: Xeni Gwet'in (Nemiah Valley), Tl'etinqox (Anaham), Tl'esqox (Toosey), Yunešit'in (Stone), ʔEsdilagh (Alexandria), and Tšideldel (Redstone). The Tsilhqot'in Nation was the first Nation in Canada to secure a court declaration of Aboriginal Title to a portion of their homelands after prolonged litigation.

The TNG and UBC signed a memorandum of understanding (MOU) at UBC's Vancouver campus in December, demonstrating their commitments to lighting new paths towards reconciliation and recognition of Indigenous self-determination with support from the Indigenous Research Support Initiative. The MOU is not related to the CETF report, but is an indication of UBC's support for Indigenous rights and the broad range of research priorities identified by the Nation.

A key feature of the MOU is to ensure that research is undertaken with cultural safety, an approach that recognizes and addresses systemic power imbalances and fosters a culture free of racism and discrimination,

thus creating a safe arena for Indigenous partners. In addition, the MOU establishes a foundation for future research collaborations that incorporate Tsilhqot'in knowledge, community needs and sustainable environmental practices and opportunities within Tsilhqot'in Nən (lands).

UBC has been working with TNG for several years on multiple research collaborations including on Indian day hospitals, unmarked graves and residential schools, and fisheries. Climate emergency collaborations, the focus of this report, includes development of a housing design prototype with UBC faculty and students to be built on the Tsilhqot'in plateau, responding to the increasing threat of climate change-induced wildfires faced by the community, Indigenous-led impact assessment, wildlife monitoring in the face of climate change, innovations in Indigenous housing governance practices, and project ownership models for renewable electricity generation in remote, Indigenous communities. This past summer, three UBC graduate students worked as Sustainability Scholars on applied research internships with TNG focussed on habitat management; wildlife management for bears & ungulates; and soil amendment.

Strategic Priority IV

Expand, Strengthen, and Centre Climate Research at UBC

UBC is globally recognized as a hub of climate research and action. Its climate researchers and scholars collaborate with government, industry, academic, and community partners to deepen understanding of the climate emergency.

The university is further developing the capacity of faculty members, students and postdoctoral fellows to engage with climate change research and scholarship. One of the specific CETF Recommendations, put forward by several CETF Working Groups, was to establish a body to expand, strengthen and coordinate comprehensive, cross-campus and interdisciplinary climate research that would provide new opportunities for community engaged scholarship, prioritizing IBPOC individuals. The CETF report also recommended this body should have an attached Climate Emergency Fellows program for PhD students and postdoctoral researchers.

A two-day [Climate Research faculty symposium](#) led by the Office of the Vice President, Research and Innovation in the fall of 2021 was a first step to better connect UBC climate researchers and initiate a conversation about next steps.

FACULTY CLIMATE EMERGENCY RESEARCH INITIATIVES

Numerous research programs at UBC relate to the climate emergency and myriad faculty members are involved in climate research. Cataloguing all relevant research is beyond the scope of this report. The following is a sampling of these initiatives:

- Applied Science researchers have launched a new \$23 million [renewable energy hub](#) to transform an entire city block at UBC into a smart energy district, including the province's first-ever hydrogen refueling station for light and heavy-duty vehicles, which will utilize clean-renewable electricity from an adjacent solar parkade. The energy hub will become a city-scale "living laboratory" that explores critical links between energy, transportation, and urban design.

The Sustainability Hub invites you to share your climate research initiatives and achievements: email climate.emergency@ubc.ca.

IV. Expand Climate Research



Credit: Amandine Drew

- Energy and technology are key climate research topics at UBC Okanagan. The [Laboratory for Solar Energy and Fuels](#) is developing innovative solar energy conversion tools and processes that incorporate photovoltaics, solar fuels, and thin film semiconductors to achieve emissions reductions. The [Green Construction Research and Training Centre](#) provides multi-disciplinary research and training for students and researchers focused on green construction. UBC Okanagan's Sustainable Transport Safety Lab, Hydrogen in Motion Inc., and Southern Railway of BC are developing the [first in-service hydrail locomotive](#) in North America – using a zero-emission fuel cell/battery hybrid to replace a traditional diesel internal combustion engine.

- Many faculties have research groups focused on climate emergency issues, as the examples below illustrate.

Faculty of Applied Science's [MÉridaLabs](#) on energy systems and [BIM TOPiCS Lab](#) on building information modelling

Institute for Resources, Environment and Sustainability's (IRES) multiple research groups include a focus on climate change

Psychology's [Behavioural Sustainability Lab](#)

The [Centre for Environmental Assessment Research \(CEAR\)](#)'s [Adaptation Working Group](#)

Geography's [research groups](#) include the Climate and Coastal Ecosystem Lab, Climate and Cryosphere Lab, and the Schwartz Geospatial Ecology Lab

School of Architecture and Landscape Architecture (SALA) [ElementsLab](#), an applied urban design and environment research group

Forestry's [Urban Nature Lab](#) and [Collaborative for Advanced Landscape Planning](#)

[Okanagan Institute for Biodiversity, Resilience and Ecosystem Services \(BRAES\)](#)

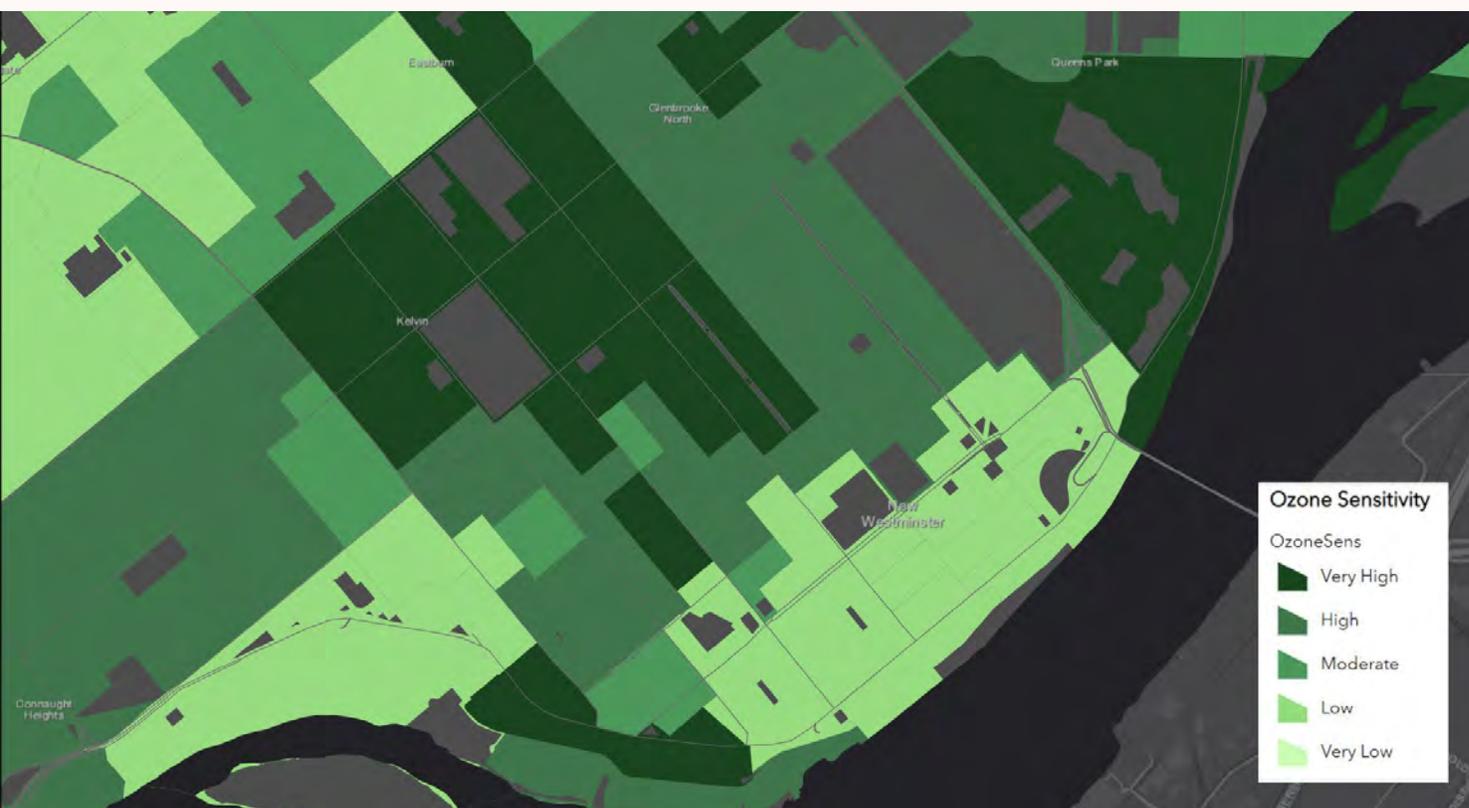
Sauder School of Business's [Centre for Social Innovation and Impact](#)

School of Community and Regional Planning SCARP's [Indigenous Planning Practicum](#) and [Housing Research Collaborative](#)

The [Urban Data Lab](#) aims to develop an integrated data platform to facilitate the use of UBC campus building and infrastructure data for research purposes with faculty from Sauder, SALA, and SCARP.

Institute of Fisheries and Oceans' groups include the [Changing Ocean Research Unit](#), [Hakai Coastal Initiative](#), and [Climate and Coastal Ecosystem Lab](#)

FEATURE



Credit: Vancouver Coastal Health

Illustrating Regional Health Disparities from Climate Hazards in Metro Vancouver

UBC's School of Population and Public Health led by Professor Michael Brauer produced a vulnerability assessment of four climate-related health hazards with the Vancouver Coastal Health (VCH) and Fraser Health (FH) regions and multiple partners. VCH and FH commissioned the series of [story maps](#) that spatially represent community vulnerability to four important climate hazards: higher summer temperatures, wildfire smoke events, ground level ozone pollution, and coastal and river flooding, which can lead to several negative physical and mental outcomes, including injury, illness, and death, as well as mental health impacts like stress, anxiety, and trauma.

A major goal of this work was to show that climate hazards do not affect all people equally and that

efforts to support and protect health outcomes need to consider the social determinants of health. This broad range of personal, social, economic, and environmental factors determine individual and population health and include things like income and social status, access to health status, housing, and other factors.

These vulnerability maps are a key tool that can be employed to: raise awareness of the climate hazards that communities are facing and advance conversations about climate change and health; mobilize multi-sectoral efforts to improve community health outcomes; help pinpoint some of the physiological and social determinants of health that play key roles in climate vulnerability; and help identify the neighbourhoods or communities that may need more resources or support to help cope with current and future climate-related stresses and shocks.

IV. Expand Climate Research



Credit: UBC Farm

STUDENT CLIMATE EMERGENCY RESEARCH INITIATIVES

Numerous student research initiatives from UBC's student body of 66,000 individuals relate to the climate emergency. Here are some examples from 2021/22.

- Brainstorming how to include student researchers and use a wider range of techniques to talk about research, the Sustainability Hub and the UBC Climate Hub organized the first-ever [☑ Student Climate Research Slamposium](#) as a companion event to the faculty Climate Change Research Symposium, described on p.29, in partnership with Campus + Community

Planning and the Centre for Community Engaged Learning. With student presenters sharing podcasts, haiku, colourful visual art, and many more creative expressions, the Slamposium generated exhilaration, a welcome antidote to the climate anxiety that haunts so many students today. More than 80 attendees joined to hear nine UBC students from undergraduate and graduate programs give engaging 5-minute presentations.

- Students in the [☑ Climate Justice Research Collaborative \(CJRC\)](#), a program developed and run by the UBC Climate Hub, collaborate on for-

IV. Expand Climate Research

credit interdisciplinary climate research projects with community partners under the supervision of faculty and the mentorship of graduate students. In 2021, the CJRC hosted a cohort of 18 students on seven interdisciplinary, community-engaged research projects, mentored by five graduate students.

- Run by staff in Campus + Community Planning, the ☑SEEDS program pairs students with an operational staff “client” who has a project that needs research, and a faculty member willing to supervise the student on the research project for credit in a course. SEEDS instigated a two-year pilot project to inform UBC’s Climate Action Plan 2030 through Community-Based Action Research. The pilot project will focus on two key interconnected research clusters: 1) ecological and human health and wellbeing, and 2) sustainable, just, and secure food systems.

PACIFIC INSTITUTE FOR CLIMATE SOLUTIONS RESEARCH AT UBC

The ☑Pacific Institute for Climate Solutions (PICS) convenes solution seekers and research partners to co-design, co-develop, and co-deliver impactful climate solutions in British Columbia. The UBC PICS Manager works out of the Sustainability Hub office and is integrally involved in collaborating on climate work at the Hub, publicizing PICS, and supporting PICS-funded projects at UBC. Since 2021 there have been nine UBC PICS projects, including three Theme Partnership projects (each funded at \$1,000,000 over four years); five Opportunity Projects Program projects (each funded at \$180,000 over three years); one Fast Track Initiative (\$25,500 over one year); and one Covid/Climate project (\$25,000 over six months).

Examples of PICS projects are described below.

- UBC led research to inform adaptation and mitigation strategies for a multifamily building tool was developed for BC Housing, called the ☑Integrated Building Adaptation and Mitigation Assessment (IBAMA) Framework.

- UBC’s ☑Living with Water research team, a project of the UBC Coastal Adaptation Lab, is developing inter-jurisdictional governance frameworks for adaptation to sea level rise and flooding, integrating community values and Indigenous knowledge and perspectives in coastal flood risk assessment, and developing decision-support tools for alternate flood adaptation solutions (e.g. multifunctional dikes and nature-based solutions).

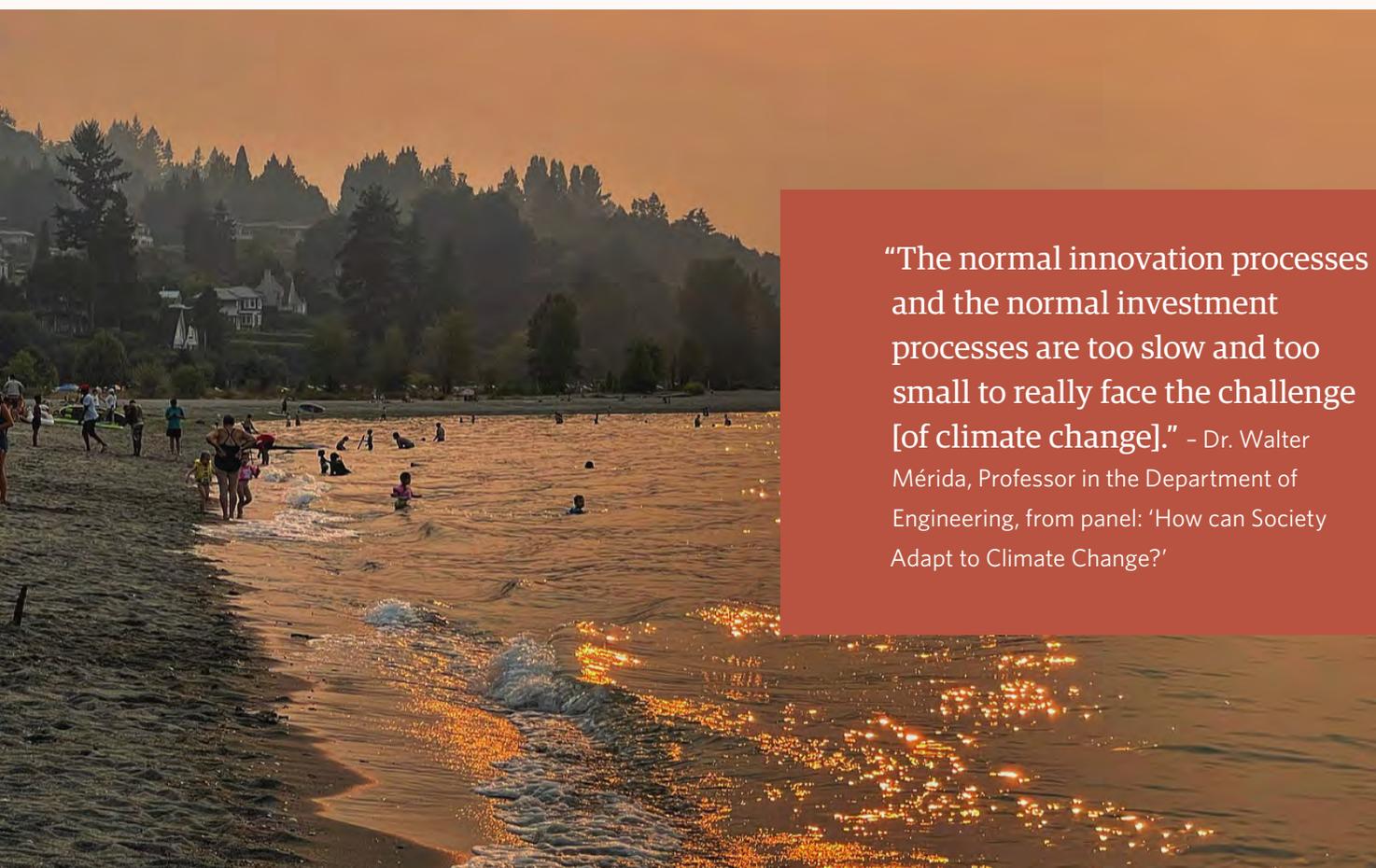
- The ☑Tellurium Boosted Li-S Batteries for Zero Emission Vehicles project aims to develop a solid-state, lithium tellurium-sulfur (Li-TeSx) battery with doubled energy capacity and higher safety than the conventional lithium-ion batteries powering electric vehicles today.

COLLABORATIVE CLIMATE EMERGENCY RESEARCH INITIATIVES

- Inspired by the Worldwide Teach-In for Climate/Justice, the ☑UBC Okanagan Climate/Justice Teach-In was developed as a chance for all community members – faculty, staff, students, and alumni – to learn how UBC Okanagan faculty members are tackling this challenge, and to discuss how to successfully implement the newly launched UBC Okanagan Climate Action Plan 2030, especially in the areas of campus food, waste, and transportation. This event was the first activity of the newly formed UBC Okanagan Climate Action Plan 2030 – Engagement working group.

- The ☑Building a Carbon Capture and Conversion Ecosystem project was awarded funding from the inaugural Campus as a Living Lab (CLL) competition. It will connect a collaborative cluster of Carbon Capture and Conversion (CCC) researchers with local governments in the region such as Metro Vancouver and Small-Medium Enterprises to develop CCC technology and enhance knowledge exchange. Through this work, the project will build capacity in the CCC industry to address emission reductions on the campus scale.

FEATURE



“The normal innovation processes and the normal investment processes are too slow and too small to really face the challenge [of climate change].” – Dr. Walter Mérida, Professor in the Department of Engineering, from panel: ‘How can Society Adapt to Climate Change?’

Credit: Julia Kidder

“If we, as scientists, are seeking solutions about how communities can adapt to climate change, are we actually involving the community in the process of finding solutions?” – Dr. Danielle Ignace, Indigenous Natural Sciences Professor, UBC Department of Forest and Conservation Sciences, member of the Coeur d’Alene tribe on her father’s side and the Menominee tribe on her mother’s side, from panel: ‘How can Society Adapt to Climate Change?’

Two-Day Faculty Research Symposium

A Task Group from UBC’s Office of Vice-President Research & Innovation organized a two-day online [Climate Change Research Symposium](#) that brought together climate researchers from multiple faculties in October 2021. The goal was to enhance the impact UBC researchers can have on climate change through collaborative research and innovation. The symposium’s panel discussions and keynote speakers featured the voices of over 40 UBC researchers on topics ranging from ‘Breaking the Energy/Climate Change Logjam’ to ‘How Can Society Achieve a Fair and Responsible Transition?’

Strategic Priority V

Foster a Culture of Engagement and Advocacy on Climate Action

“Success or failure is not an act of nature. It’s in our hands. The path of progress is not always a straight line. Sometimes there are detours. Sometimes there are ditches.” – António Guterres, United Nations Secretary-General, 2021 UN Climate Change Conference of the Parties (COP26)



Antonio Guterres, Secretary-General of the United Nations, speaks at the Opening Ceremony for COP26 at the SEC Glasgow. Credit: [Karwai Tang/UK Government](#)

This strategic priority focuses on creating a culture that empowers climate justice action by students, staff and faculty, and encourages advocacy efforts to accelerate a just climate emergency response on UBC’s campuses and beyond.

To succeed in fostering this culture, UBC’s community members need tools, resources, and support. The university must further engage systemically marginalized communities, uphold space for difficult conversations, invest in rebuilding relationships, and create spaces for feedback of all kinds.

MUNICIPAL, PROVINCIAL, NATIONAL, AND INTERNATIONAL ADVOCACY AND ENGAGEMENT

- [UBC Engagement at COP26](#): UBC sent a delegation of seven to the 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow in November 2021. As official observers, UBC delegates deepened their understanding of how global climate negotiations work, shared UBC’s work on the climate emergency, and shared their experiences with the wider UBC community. In connection with this event, the Sustainability Hub produced [‘COP26: A UBC Guide for Citizens and Delegates.’](#)
- Submission to the BC Climate Preparedness and Adaptation Strategy: UBC, led by the Sustainability Hub, prepared an institutional response to the Province

V. Foster Culture of Engagement and Advocacy

of BC's consultation process on the province's capacity to prepare, adapt, anticipate, and respond to climate change. It highlighted UBC's research programs and expertise and recommended greater collaboration on issues such as devastating heat domes and wildfires.

- Involvement in Vancouver's Climate Emergency Action Plan: UBC faculty and staff participated in a City of Vancouver academic briefing to provide feedback on climate emergency strategies under consideration by City Council. Many faculty and staff are part of the City's Amplifier Network, focusing on ways to participate in and amplify opportunities that are part of the Vancouver [Climate Emergency Action Plan](#).

FACULTY IMPACTS BEYOND THE CLASSROOM

- Members of faculty are advisors to Canadian governments on climate change. For example, Professor Simon Donner is a member of Canada's Net-Zero Advisory Body, which advises the Ministry of the Environment and Climate Change, and Professor Kathryn Harrison was appointed by the BC Minister of Environment and Climate Change Strategy to the province's 20 member Climate Solutions Council.
- Members of faculty hold United Nations posts related to the climate emergency. The UN Human Rights Council appointed UBC Political Science Professor Sheryl Lightfoot as a member of the UN expert Mechanism on the Rights of Indigenous Peoples, which advises member states on the United Nations Declaration on the Rights of the Indigenous Peoples. The UN Human Rights Council extended the appointment of UBC Professor David Boyd as the Special Rapporteur on Human Rights and the Environment for a second three-year term.
- Faculty have contributed to numerous IPCC reports.

STUDENT ENGAGEMENT

- In the spirit of community-building, the Sustainability Hub, the UBC Climate Hub, and AMS hosted UBC's first [Climate Emergency Week](#) featuring conversations, actions, and celebrations. These events coincided with AMS Sustainability Week, February's Move UBC campaign, and Black History Month.
- A [Student Academic Climate Advocacy Toolkit](#) and other resources and workshops have been developed by the UBC Climate Hub to support every undergraduate student to understand and engage with climate change and climate justice, no matter their degree program.

CAMPUS ENGAGEMENT

- Campus + Community Planning has new and expanded communications, engagement, and outreach programs. In both Climate Action Plans 2030 (CAP 2030 and UBCO CAP 2030), UBC has set a target that "by 2030, three quarters (75%) of UBC faculty, staff, and students will be aware of UBC's climate action goals and participating in UBC's evolving and expanding culture of sustainability." UBC's climate-related engagement and outreach programs have demonstrated successes in reducing energy and emissions from UBC operations through energy conservation initiatives and campaigns delivered by programs including Green Labs, Sustainability Coordinators, and UBC residence hall engagement. Get involved at [UBCV](#) and [UBCO](#).
- Students at UBC, SFU, and the University of Victoria launched the [People's Endowment Campaign](#) on active community reinvestment in late 2021. AMS endorsed the campaign and asked the UBC Board of Governors to take its Five Calls to Action into consideration.
- The Sustainability Ambassadors organized events including: [Visual Storytelling for Climate Justice](#), which was a workshop to foster climate justice action, and [Sustainability and Society: A Resource for Collective Liberation](#), which highlighted stories of

V. Foster Culture of Engagement and Advocacy



Yasmina Seifeddine presenting at 2021 Climate Emergency Town Hall 'From Declaration to Transformation.' Credit: Sustainability Hub

social change and action to build community amongst marginalized groups and empower young people to act in their communities.

- The Sustainability Ambassadors, AMS Sustainability, SDG Alliance, and Global Lounge organized [SDG Week](#) in March in 2021 and 2022, featuring a week-long series of events including a Hack-Earth-On and Career Connections panel, among other events, with several hundred participants.
- A snap Climate Emergency Town Hall, [From Declaration to Transformation](#), presented by Climate Justice UBC and the UBC Climate Hub included speakers Anjali Appadurai, Avi Lewis, Naomi Klein, Kanahus Manuel, Kai Nagata, Yasmina Seifeddine and Chief Ninawa Huni Kui, was held in 2021 following the devastating floods in BC. Panelists considered the following: With BC on the frontlines of climate breakdown and fossil fuel extraction, how do we keep safe? What justice-based plans will shift us into emergency footing?

FACULTY ADVOCACY

- Several faculties at UBC have formed Climate Action Committees or Teams, including: [UBC Library](#), [Earth, Oceans and Atmospheric Sciences](#), [Geography](#), and [Asian Studies](#). The Sustainability Hub assists these Committees and supports them with sharing their experiences, disseminating materials, and advises faculties exploring committee formation.
- The Inter-departmental Climate Committee (IDCC) is an informal group that began meeting in 2021 with a desire to connect with other units and departments and share best practices, inspire each other, and leverage collective passions and capacities to prioritize the climate emergency in our departments and across the University. These bi-monthly meetings are open to all and provide an opportunity for participants to share progress on and find support for climate work.

FEATURE

“Now, the problem is that the realm of the supernatural beings, the earth and the oceans, is threatened by climate change today... and I’m encouraged and am happy that there are so many people here today who can step in and find ways together to find a solution to climate change.”

– Terri-Lynn Williams-Davidson, Artist, Counsel to the Haida Nation, Masters student, Peter A. Allard school of law, citizen of the Haida Nation, from panel: ‘Just Is ≠ Justice’



Credit: David Tindall

Climate Justice Series viewed by thousands across the UBC community

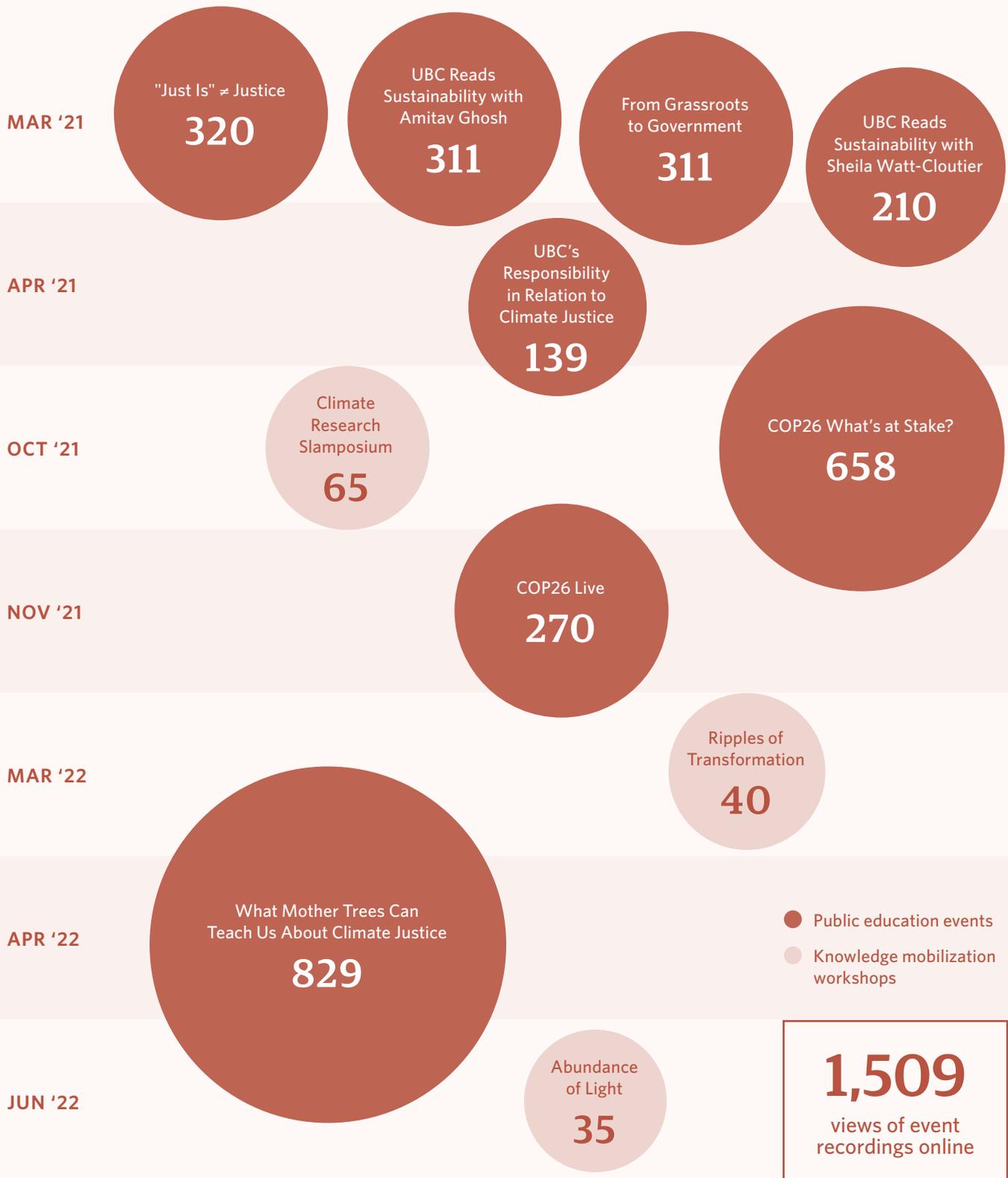
The Sustainability Hub launched the Climate Justice Series, which reached thousands of students, faculty, staff, and community members. Ten webinars have been run with plans for more. Speakers to date have included students, professors, alumni, elected politicians, writers, and activists.

The inaugural event [‘Just Is’ ≠ Justice](#) featured UBC Political Science Professor Kathryn Harrison, UBC PhD law student Temitope Onifade, UBC graduate law student and counsel to the Haida Nation Terri-Lynn Williams-Davidson, and UBC alumna and environmental lawyer Eugene Kung.

Topics have ranged from [‘What is UBC’s responsibility to climate justice?’](#) to [‘COP26 Live, From Grassroots to Government’](#), featured MLA Bowinn Ma, former Vancouver city councilor Andrea Reimer, and current Vancouver City Councillor Christine Boyle. Notable authors who have participated in the series through UBC Reads Sustainability include [Amitav Ghosh on *The Great Derangement: Climate Change and the Unthinkable*](#) and [Sheila Watt-Cloutier on *The Right to be Cold*](#).

[‘COP26 What’s at Stake’](#) attracted a particularly wide audience. Held in partnership with the Sierra Club of BC and West Coast Environmental Law, the webinar welcomed a diverse mix of climate leaders including MP Elizabeth May, climate activist Anjali Appadurai, Assistant Professor in UBC’s Department of Earth, Ocean and Atmospheric Sciences Rachel White, and environmental lawyer and climate law expert Andrew Gage.

CLIMATE JUSTICE EVENT ATTENDEES



FEATURE

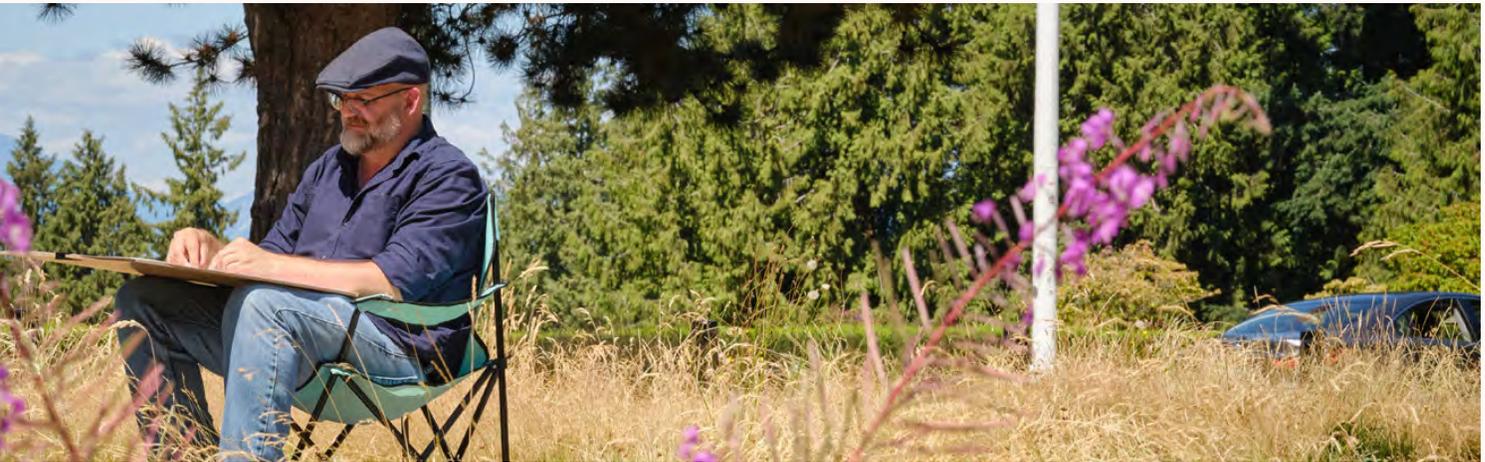


Credit: UBC Farm

SEEDS + more sustainable food systems

SEEDS has led work on the UBC Climate Action Plan 2030 Food System targets and actions, including an ambitious food GHG emissions target and bold actions that span climate mitigation and adaptation. This year, staff at SEEDS also created UBC's first preliminary pre-consumer food waste baseline and preliminary emissions assessment on food waste to inform a UBC Food Waste Prevention and Reduction Strategy and opportunities to reduce UBC's pre-consumer waste emissions. The group developed UBC's first [Climate-Friendly Food Label](#). SEEDS also developed UBC's first methodology and framework to assess greenhouse gas emissions for menu ingredients and unveiled a new [Support Climate-Friendly Foods](#) webpage that includes a series of tips to promote climate action in the food system. Finally, they developed a preliminary GHG baseline associated with UBC's food related transportation emissions, including the first data on emissions associated with external food meal services to campus residents that will inform opportunities to reduce these emissions and expand the baseline to other food transportation.

FEATURE



Credit: The Morris and Helen Belkin Art Gallery

“Looking to the natural world, one of the first signs of life after a wildfire is a shock of magenta blossoms among the char. Making the most of disturbance, Fireweed seeds take root in scarred lands, giving rise to vegetation that provides much needed sustenance and habitat for flora and fauna. It is the beginning of ecological recovery. Balm for the burn.” – Holly Schmidt

Fireweed Fields

Part of the Morris and Helen Belkin Art Gallery’s Outdoor Art Program, [Fireweed Fields](#) is a response to the climate emergency by Outdoor Artist in Residence Holly Schmidt. By transforming ‘low biodiversity’ UBC lawn and field sites into Fireweed fields, the project encourages increased biodiversity through gradual succession as a metaphor for the resurgence of life after a crisis.

This installation acknowledges the global climate crisis: by ripping through the fabric of maintained lawns and tidy ideals, it plants initial seeds for change and catalyzes dialogue. Over the project’s multi-year life span, these fields will grow into diverse and established meadows and will foster a diversity of plant, animal, and insect life on campus that cannot be matched by monocultures of grass.

Through an annual summer intensive with diverse UBC faculty and artists, the project invites dialogue and experimentation across art and science. Participants slow down with walks, talks and meals, and reflect on their relationship with plants and other non-human beings.

This dramatic transformation is accompanied by *Forecast*, a series of poetic texts that use the grammar of weather reporting to speak to the sensorial experience of weather on human and non-human bodies at the UBC Vancouver campus, prompting thought about the impact of climate change. The texts appear on the windows of the Belkin and CIRS. The Sustainability Hub is a partner in *Fireweed Fields* and *Forecast* and has co-organized events such as forest walks and artist dialogues as part of the project’s extensive public programming.

Strategic Priority VI

Support Community Wellbeing in the Face of the Climate Crisis

Climate change has both direct and indirect implications on mental health and wellbeing. Climate change impacts increase and magnify community risk of depression, anxiety, PTSD, fear, eco-grief, stress, irritability, anger, and the expression of emotional distress as physical pain, like stomach or headaches. Increasingly, climate change is generating complex forms of personal and community trauma. The topic of how to navigate climate anxiety remains a high priority for students.

A holistic approach to wellbeing must be community-based, intersectional and systemic, with a focus on improving wellbeing through community building and collective action. UBC has emergency plans in both Vancouver and the Okanagan to respond to climate-related events and hazards. As the frequency and severity of climate-related events increase, systematically integrating community resilience and wellbeing to advance risk reduction and emergency preparedness is a priority.

UBC is developing mental health, resilience, and eco-anxiety supports, skills, and services for community members through a lens of climate and racial justice, and promoting greater public discourse around climate change and public health impacts.

- As part of the [Climate Creatives Workshop Series](#), the UBC Climate Hub held six two-hour workshops

to encourage students and community organizers to dream just and resilient futures beyond fossil fuels, mass extinction, policing, segregation, and exclusion. Mediums included filmmaking, creative fiction, poetry, and comic-making.

- The UBC Climate Hub hosted [Nature Prescriptions](#), a series of hosted group walks through campus green spaces, gardens, and parks with a specific focus on learning about nature – including trees, plants, and creature relations – and the mental health and wellbeing impacts of climate.

- The UBC Climate Hub ran a climate mental health and resilience workshop during [Thrive](#) month in partnership with UBC Wellbeing in November 2021. UBC Wellbeing’s holistic approach encompasses mental, physical, and community health and recognizes that climate change is one of the biggest health risks the UBC community faces.

- Stakeholders on the UBC Wellbeing Mental Health and Resilience Committee are in the process of developing mental health literacy training, program learning outcomes, and competencies for students, staff and faculty, and creating a shared hub for training resources. This project will embed climate-related mental health and wellbeing resources visible to all UBC campus community members.

VI. Support Community Wellbeing



Sustainability Scholar Judy Wu. Credit: Sustainability Hub

- A UBC Canvas module on [Health Care and Climate Change](#), prepared by UBC medical student Valerie Lai (UBC MD 2020), introduces the health care system's contributions to climate change and initiatives that address the issue.
- Sustainability Scholar Judy Wu, a Master's student in public health worked on a project on climate anxiety, [featured in a film](#) prepared by the Sustainability Hub. At an event organized by the Fraser Basin Council, SHIFT Collaborative, and the BC Climate and Health Network, Judy was among a group of panelists discussing the anxiety of living in communities impacted by slow and steady climate changes, the trauma of climate related disasters such as wildfires, flooding and heatwaves, and the existential crisis many feel about the future of the planet.

FEATURE

“Hopefully, this resource might offer a touchpoint for those looking to explore, navigate and support themselves or others as we all navigate the many impacts of climate change.” - Climate Wellbeing Resource Kit, curated by Meghan Wise, UBC Climate Hub Coordinator



Credit: UBC Recreation

UBC Climate Hub’s Climate Wellbeing Engagement Network and Climate Anxiety Work

Run by the UBC Climate Hub, the Climate Wellbeing Engagement Network connects the UBC community to resources and opportunities that support students, staff, and faculty with navigating the mental health and wellbeing impacts of climate change. Their Community Chats program further empowers participants to make connections outside of their immediate job or discipline, build networks, share stories from their lives, and see themselves as part of an interconnected climate action community.

The [Climate Wellbeing Resource Kit](#) is one of the many mental health and wellbeing resources made available through the Hub. Other online resources feature topics such as climate anxiety and navigating the mental health and wellbeing impacts of forest fires, flooding, heatwaves and air pollution, developed as part of UBC Climate Hub’s Climate Wellbeing Series.

Moving for our minds, bodies and the planet

Recognizing the intersectional nature of movement and its connection to sustainability, this year’s [Move UBC](#) campaign led by UBC Wellbeing incorporated messaging around “moving for the planet” to promote movement and active transportation as a means to reduce emissions while improving our health. Move UBC is an annual, university-wide campaign to increase physical activity and reduce sedentary behaviour among students, faculty, staff, and community in ways that feel comfortable, empowering, and motivating.

With Move UBC coinciding with Climate Emergency Week, stakeholders from the UBC Wellbeing Physical Activity Committee, Sustainability Hub, and the UBC Climate Hub partnered on various events including hosting [Research Roundtable: Physical Activity and Climate Action](#). This event highlighted the intersections between physical activity, climate action and social justice, encouraging UBC communities to explore ways of moving that positively impact our minds, bodies, and the planet.

Strategic Priority VII

Expand Climate Education Opportunities and Resources for the UBC Community and Broader Public

“We can continue pushing our earth out of balance, with greenhouse gases accelerating each year, or we can regain balance by acknowledging that if we harm one species, one forest, one lake, this ripples through the entire complex web. Mistreatment of one species is mistreatment of all.

The rest of the planet has been waiting patiently for us to figure that out. Making this transformation requires that humans reconnect with nature - the forests, the prairie, the oceans - instead of treating everything and everyone as objects for exploitation.” - Suzanne Simard, professor, UBC Department of Forest and Conservation Sciences from her 2021 book *Finding the Mother Tree: Discovering the Wisdom of the Forest*

Educators at UBC are committed to prepare their students to address intersecting global challenges such as the climate crisis, Indigenous rights and recognition, systemic racism, wealth inequality, and the global COVID-19 pandemic.

UBC is acting on the CETF report to increase access to climate education within all disciplines, develop climate education pedagogy and curriculum, and expand climate-related professional development opportunities. UBC is committed to improve climate and ecological literacy in its own community and throughout the region.

GRANTS FOR FACULTY

- **Climate Education Grants** provide up to \$5,000 to UBC Vancouver faculty members to strengthen climate change content and teaching approaches into existing undergraduate and graduate courses. Sixteen grants were awarded in 2021 and early 2022. Recipients include:

A second-year math course that serves 100 students was revised to include meaningful climate modelling examples throughout the course;

The upgrading of climate literacy components in four large first-year Earth, Ocean, and Atmospheric Sciences courses which collectively serve over 2,500 students per year at UBC Vancouver;

VII. Expand Climate Education

A full revamp of a module on 'Modern Climate' in an Earth Ocean Sciences class with 150 students;

New readings and discussions in 'Literatures of Environmental Protest,' an English class with 75 students;

The redesign of the Library and Information Studies' course 'Information Policy,' to reorient its learning objectives, case studies, and instructional material to UBC's commitments to climate justice; and

The enhancement of the course 'Communities and Social Development: Debates, Approaches and Fields of Practice' so that students in the school of Social Work and other disciplines can complete community-based projects focused on climate justice.

- [Sustainability Education Grants](#) support curriculum development that incorporates experiential, applied, and/or interdisciplinary sustainability education principles. For example, the [Community Climate Hacks](#) project aims to develop an interdisciplinary field course on community engagement for Urban Forestry and Wood Science students to help residents design and install small neighbourhood climate action projects.

CLIMATE EMERGENCY ACCOUNTABILITY AND RESOURCES

- The [Sustainability Dashboards](#) are a new open data platform that amplifies achievements, increases transparency, and supports research, learning, operations, and industry partnerships. The Sustainability Hub has compiled new operational and curricular datasets to report on performance against key institutional sustainability goals, in partnership with the Urban Data Lab, Campus + Community Planning, Energy & Water Services, and the UBC Okanagan Sustainability Office. The platform illustrates progress on goals for GHG emissions, transportation, curriculum, housing, childcare, and more. Users can explore datasets and visualizations to understand sustainability trends and download the latest open data for further analysis. Under the "curricular" category, users can

learn how many sustainability-related courses are offered at UBC in the current calendar year at both the Vancouver and Okanagan campuses as well as metrics on sustainability-related degree programs.

- The [Climate Emergency](#) website is a source of news, events, resources, and stories and is continually updated and expanded with content from multiple stakeholders. It hosts the full 178-page CETF Report.

- For 2022/23 reporting, the Climate Emergency team is developing a framework to monitor, evaluate, and learn from the implementation of CETF recommendations.

CLIMATE EMERGENCY COURSES, CURRICULUM DEVELOPMENT, AND SCHOLARS GROUPS

- Numerous UBC courses provide education on the climate emergency and some of these are collected in the Climate Course listing, described below on p. 43.

- The [Climate Studies and Action Certificate](#) will be launched in the fall of 2022. Developed over the past two years by faculty in the Departments of Geography and Earth, Ocean and Atmospheric Sciences, this unique program can be added to any UBC undergraduate degree. This certificate is designed to give students an interdisciplinary understanding of the climate crisis and equip them to engage in effective climate responses. Early classes cover climate science, the crises that led to declaring an emergency, and strategies to address it. Upper-level classes take a deeper look at climate justice, the social, economic, political, and cultural processes that underlie climate change, and include an elective class for students to deepen their knowledge in a specific area. Community-engaged learning, with a climate action focus, is embedded throughout the program, culminating in a capstone project. Students will learn how to assess the efficacy and equity of various climate solutions, experiment with strategies to identify leverage points for change, and engage in public dialogue about climate change.

VII. Expand Climate Education



Credit: Julia Kidder

- Other UBC courses address root causes of the climate emergency. For example, [Facing Human Wrongs: Navigating Paradoxes and Complexities of Social and Global Change](#), an online interdisciplinary course created collaboratively between faculty in Education and Land and Food Systems, addresses four interrelated denials that enable the reproduction of an enduring colonial system: denial of colonial violence that underwrites the system; denial of ecological unsustainability; denial of interdependence; and denial of the magnitude of the many “wicked problems” that we face.
- UBC faculty are working in partnership on a PICS supported project aimed at advancing climate education in British Columbia’s (BC) K-12 curriculum and creating professional development resources on climate change for teachers in BC.

FEATURE



Credit: [Sarah Race Photography](#)

“The Climate Teaching Connector is a great resource linking learners, faculty, and researchers with multidisciplinary perspectives and resources needed to inspire, promote, and sustain climate awareness and action.” – Dr. Leonora C. Angeles, Associate Professor, SCARP and Institute for Gender, Race, Sexuality and Social Justice

Climate Teaching Connector: Bringing UBC graduate students' climate expertise into undergraduate classes

The [Climate Teaching Connector](#) – a collaboration between the Sustainability Hub and the UBC Climate Hub – integrates climate-related content into undergraduate classes by compensating graduate student climate experts as guest lecturers.

During the 2020/21 pilot, 22 guest lectures from a cohort of 15 graduate students and postdoctoral fellows reached more than 1,350 students across seven faculties and 18 departments at UBC Vancouver and UBC Okanagan. The program integrated climate change-related content into over 25 undergraduate courses and reached over 2,000 students during the

two-year period. Experts delivered sessions on the following themes: Climate Justice, Climate and People, Climate Law, Planning and Policy, Climate Adaptation and Resilience,

Online Sustainability and Climate Course Listings provide metrics for climate-action

The Sustainability Hub has created an online [climate change course listing](#) highlighting 62 courses at the UBC Vancouver campus. Students can browse courses by restrictions, categories, or year of study.

With your help, the Sustainability Hub can grow this resource. If you teach a course that addresses climate change and would like your course added, contact alejandra.urcelay@ubc.ca.

DEPARTMENTS LEADING ON CLIMATE

Many departments this year held public climate education events in addition to their usual roster of activities. Below is a sample of these events.

- The L#CAT (Library #Climate Action Team) sponsored [Climate Research Made Real: Practical Applications of Research for Better Futures](#), with four panelists from diverse disciplinary backgrounds.
- The Department of Earth, Ocean and Atmospheric Sciences (EOAS) held a six week [Climate Crisis Colloquia](#) exploring the intersections between earth science and a society-spanning response to the climate crisis, co-hosted by the EOAS Colloquium and its Climate Emergency Committee.
- The Faculty of Education's [Dean's Distinguished lecture](#) hosted scholars and activists Naomi Klein and Avi Lewis to speak about climate justice and educational responsibility.
- At the Allard School of Law, the Centre for Law and the Environment held a series of events on [Legal Recognition for Non-Human Relations](#) and the [Canada Climate Law Initiative](#) held numerous webinars on legal obligations related to climate risk.
- At the School of Public Policy and Global Affairs, the annual [Richard B. Splane Lecture](#) in Social Policy featured Seth Klein, discussing his book *The Good War – Mobilizing Canada for the Climate Emergency*, which shows why tackling inequality and economic insecurity is vital for climate action.
- Following the deadly heat dome, the Institute for the Oceans and Fisheries brought together leading experts in climatology, oceanography, aquatic ecology, and fisheries to share their knowledge about heatwaves and their impacts on biodiversity and dependent human communities in a webinar titled [Record-Breaking Heatwaves, Aquatic Biodiversity, and Human Communities: BC and Beyond](#).
- As part of the fall 2021 Provost's Lecture Series on Academic Freedom, Robert Proctor, Professor of History, Stanford University [lectured](#) on Academic

Freedom as a Double-Edged Sword: How Big Tobacco and Big Oil Corrupt Research on Campus.

FACULTY

We hope you feel inspired by these actions and encourage your department to organize events like these. You can share them with the Sustainability Hub who can amplify them through our networks. We also recognize that this is an incomplete list and invite you to share any events we might have missed by contacting us at climate.emergency@ubc.ca.



Researcher at UBC, Amelia Hesketh, tested how exposure to direct sunlight affects survival of sea life in the intertidal zone before the heat dome hit. Credit: Ainslie Cruickshank/*The Narwhal*

Strategic Priority VIII

Develop New and Strengthen Existing Partnerships to Tackle the Climate Emergency

UBC's external partnerships are a critical component of its capacity to accelerate the global shift towards a 1.5°C-aligned future. UBC can launch new initiatives and innovations and scale up those that already demonstrate success.

UBC also recognizes the strength and value of reciprocity and creates space to integrate knowledge and best practices from external partners into its own institutional policies. Most importantly, UBC's external engagements recognize the importance of active, ethical partnerships with IBPOC and communities that have been marginalized.

Recommendations to support this strategic priority area focus on facilitating knowledge translation, building community partnerships, scaling up Living Lab research with off-campus partners, deepening engagement with external groups, and developing a more robust strategic partnership framework.

As a public university and a global sustainability thought leader, UBC fosters collaborations to accelerate climate justice impacts.

UNIVERSITY CLIMATE CHANGE NETWORKS

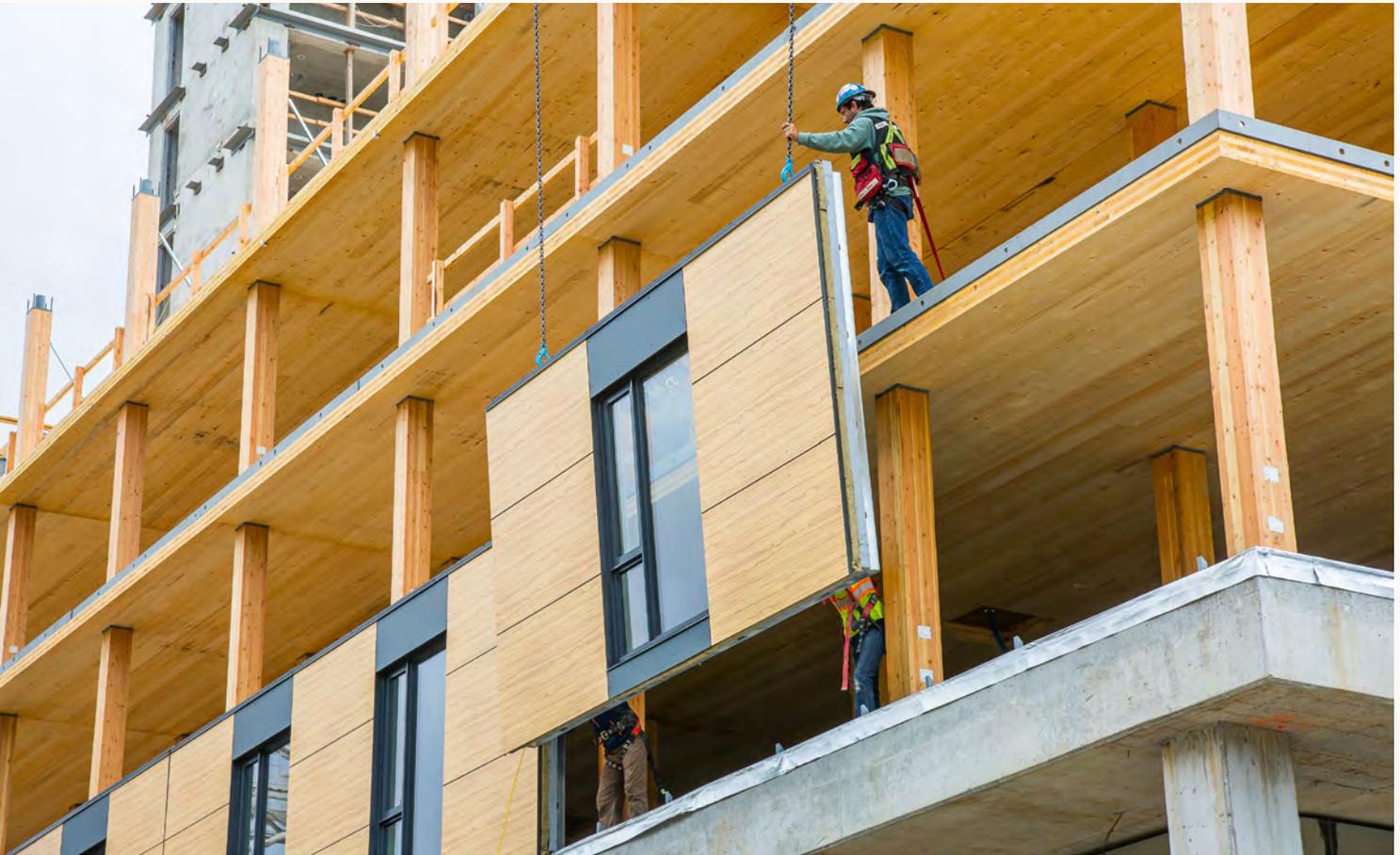
- UBC has played an important role in elevating climate change across global university networks, including through the [University Climate Change Coalition](#)

(UC3), the [University Alliance for Sustainability \(UAS\)](#), the [International Sustainable Campus Network \(ISCN\)](#) and the [U7+ Alliance](#), that help ensure higher learning institutions across the globe are effective agents of change.

- UBC is committed to sharing its experiences with the climate emergency with other universities. One example is this year's webinar held with Association for the Advancement of Sustainability in Higher Education (AASHE), [Declaring a Climate Emergency: UBC's Climate Emergency Task Force Process and Path to Implementation](#). As an outcome of this event, the Library #Climate Action Team has coordinated a community of practice on air travel emissions reductions with several other UBC units and other BC universities.

- UBC is a member of a collective task group of Canadian universities led by the McConnell Foundation. This group has been creating 'A Canadian Universities Call to Action on the Climate Emergency' to embed climate in the core of university educational and research mandates and to mobilize collective, coordinated efforts to accelerate climate action across all of society. The Call to Action has been endorsed in principle by 26 Canadian universities, and is now being considered by Universities Canada.

VIII. More Climate Partnerships



Credit: UBC Brand and Marketing

- UBC is working with the four partner PICS universities on coordinated government policy requests and is sharing best practices and programs to accelerate their collective impact.

LIVING LABS

In addition to Vienna House, profiled below on p.48, other Living Lab collaborations on the climate emergency happened this year.

- An active partnership project in the Sustainability Hub's Urban Innovation Research group relates to the climate emergency. The [Embodied Carbon Pilot](#) funded by BC Forestry Innovation Investment (FII) is developing embodied carbon benchmarks (and future performance targets) for different building typologies. The team has presented the pilot's experiences and learnings to municipal and provincial policy-makers, and lifecycle assessment practitioners and organizations.
- The UBC Living Lab model was shared through the [PICS Campus as a Living Lab Climate Solutions Showcase](#). UBC and PICS, through the Universities Collaborate on Climate initiative, will continue to explore how to support and scale up Living Lab projects (including those involving the social sciences and humanities) and provide resources for engagement and partnerships to assist in responding to climate change on campus and beyond.

VIII. More Climate Partnerships

COMMUNITY PARTNERSHIPS

- Held in spring 2021 and co-developed by UBC with its partners the Vancouver Economic Commission, Pembina Institute, and Metro Vancouver, the Build Back Better in the Climate Emergency Roundtable focused on the skills and training students need to enter a workforce transformed by climate change. The McConnell Foundation sponsored and facilitated the webinar.
- [Sustainable Fashion Week](#) was held by the Sustainability Hub for students, staff, faculty, and the public to learn more about “fast fashion,” and to explore alternatives including sustainable buying, clothing repair and reuse, and textile recycling. Representatives from local NGOs Threading Change, Frameworq, and Working Gear discussed the links between clothing, textiles, and climate change.
- A new partnership under development focuses on Vancouver’s Downtown Eastside (DTES). ‘Making Climate Research Accessible to Inform Climate Justice Policy’ aims to make climate research accessible, promote reciprocal learning on climate change’s unequal and unjust impacts, and increase the capacity of one vulnerable and ill-equipped community to participate in developing climate policies that can improve residents’ lives, with learnings applicable to similar communities in Canada. A centerpiece of the project is expanding UBC’s Learning Exchange’s searchable [Research Access Portal \(RAP\)](#) to include climate research. Residents of the DTES and local NGOs will be involved through activities such as identifying applied research projects and mentoring UBC student Sustainability Scholars to augment the RAP, defining priority climate issues and policy processes they want to learn more about, and co-creating activities for meaningful knowledge translation and exchange.
- The UBC Botanical Garden will use a generous \$1.4 million gift from an anonymous donor in support of the Garden’s [Sustainable Communities Field School](#) to enhance its local and global conservation efforts, and develop learning modules that incorporate climate justice, Indigenous knowledge, and decolonization.
- The latest [Community-University Engagement Support \(CUES\)](#) partnership awards show emphasis on climate action and climate justice. Two examples, both affiliated with the Centre for Climate Justice, are:
 - [Housing Justice in a Climate Emergency: Building a Research and Advocacy Partnership for Intersecting Tenant Vulnerabilities to Extreme Weather](#), led by Dr. Mohammed Rafi Arefin, Department of Geography with community partner Andrew Sakamoto, Tenant Resource and Advisory Centre, and [Indigenizing Climate Justice in British Columbia](#) led by Naomi Klein, Department of Geography, with community partner Josh Kioke, Union of BC Indian Chiefs.
 - The [Fraser Estuary Research Collaborative](#), a newly created cohort of Sustainability Scholars, pairs students with a partner organization to work on an applied research project focused on the most significant threats to the estuary and prioritizing Indigenous interests in protection, restoration, and governance goals. In the first year, three Indigenous organizations – the Lower Fraser Fisheries Alliance, the Emergency Program Secretariat, and the Salish Sea Indigenous Guardians Network – are hosting a research project. The Scholars have access to training in Indigenous law and governance as part of their applied research internships.

FEATURE



Credit: Public Architecture

“This project represents a path-breaking approach that seeks to simultaneously address housing affordability in Vancouver, while offering an innovative, zero-emission building standard. Our role at the Sustainability Hub is to capture and document the knowledge that will emanate from this project and support the dissemination of this knowledge to relevant stakeholders in the region. We are incredibly excited to be part of this collaboration.” – Binoy Mascarenhas, interim Director, Urban Innovation Research team, Sustainability Hub

East Vancouver's Vienna House - innovating solutions to affordability, climate change, and social equity through housing

Vienna House is an innovative, affordable rental housing pilot project in East Vancouver that shows how cities can advance solutions to affordability, climate change, and social equity through housing, led by BC Housing, the City of Vancouver, and the More Than a Roof Housing Society. Staff at the Sustainability Hub, in partnership with faculty and graduate students in the UBC BiM Topic Lab, Department of Civil Engineering, are documenting and analyzing the project's planning, design, and construction phases to understand how best to develop affordable, low-carbon, and climate resilient housing.

FEATURE

Sustainability Scholars Program Extends Reach and Impact with NGOs

The [Sustainability Scholars](#) program is a flagship paid internship program that matches UBC graduate students with on- and off-campus sustainability partners. In response to the UBC's Declaration of a Climate Emergency, the University invested an additional \$240,000 into the program which resulted in new NGO led climate projects, including:

- An improved delivery plan for low-income home energy retrofits (Ecotrust);
- Addressing climate grief (Fraser Basin Council);
- Leveraging data to target policies and investment to maximize low-carbon investments for small and medium sized businesses (Climate Smart);
- Impact of architectural design on the solar PV generation potential of a house to achieve its net-zero energy target (BC Housing);
- A comparative analysis of nature-based climate solutions for local governments (Climate Caucus);
- Quantifying the climate mitigation benefits of nature-based flood control solutions (Watershed Watch).

The summer 2021 Sustainability Scholars program included 63 projects - the largest summer cohort to date. About 41 out of 63 projects explored problems related to climate change, particularly looking at ways to reduce GHG emissions from buildings, transportation, and carbon sequestration. For example, a project with the Integral Group, funded by BC Hydro, helped identify the policies and technologies available to support retrofitting building stock to near-zero emissions in a way that safeguards affordability.

Centre for Community Engaged Learning's Social Impact Lab

The Centre for Community Engaged Learning hosted a series of events under the banner [A Social Impact Lab: Activating Student Change Agents on the Climate Emergency](#). The series, part of the Centre's overall Social Impact Lab (SIL) programming, provides a means for students to challenge pre-existing systems with community-led solutions, by identifying root causes of social and environmental issues. To kick off the series, the Climate Action Mobilizer student team held a series of [Neighbourhood Climate Chats](#) that brought together UBC students, neighbourhood residents, municipal representatives, community organizations, and climate champions to discuss what climate action looks like in local communities. The first round of discussions focused on envisioning climate action through the ideation of climate action projects to address the climate crisis at a community level. The second round of discussions focused on how to build toward collective action. Climate domain themes included: Low Carbon Transportation, Sustainable Energy in Homes and Buildings, Placemaking and Stewardship, Greenspaces and Urban Forests, and Sustainable Lifestyles.

FEATURE

“I have a much more in-depth knowledge about climate change and the impacts of it. I wrote the extreme weathers script and it blew my mind how much worse the climate is getting,” - Laduli, participant, Geering Up STEM Leadership program

UBC Students Mentor High School Students in Climate Leadership: [Geering Up Climate Leadership](#)

Students in UBC’s inventive engineering outreach program [Geering Up](#) run summer camps, clubs, events and workshops for K-12 youth to inspire more students to pursue engineering, science, technology, and mathematics (STEM) careers, especially among groups underrepresented in STEM. During the height of COVID, in 2021, Geering Up continued to deliver programming to 13,300 youth, with 50% girls participating across all programs, and 1200 Indigenous youth participants.

In the summer of 2021, Geering Up piloted a [high school leadership program](#) centered on climate change challenges. These teen leaders produced Instagram posts, YouTube videos, and podcasts highlighting how an engineering career could enable them to enact change. Check out their videos on [What is climate change?](#), [Consequences of climate change](#), [Are electric vehicles really better for the environment?](#), and [Extreme Weather](#).

In 2022, Geering Up also ran a Sustainability Engineering camp for high school students. In this camp, participants learned about designing climate-proof buildings, did a tour of UBC’s most sustainable architecture and made ecospheres.

[UBC Climate Hub Youth Climate Ambassadors Project \(YCAP\)](#)

Created in response to the demand for climate change narratives that focus on hope and action rather than doom and gloom, YCAP offers free climate justice workshops supported by the UBC Climate Hub in partnership with Be The Change Earth Alliance.

YCAP connects trained university student facilitators with high school classes and community groups, creating opportunities for peer-to-peer storytelling centred around climate justice, systems change, and community resistance.

UBC Student Clubs Focus on Climate

Numerous UBC student clubs are deeply involved in climate change with external partners. Here are three examples from among many:

- [Sustaingineering](#) consists of over 60 active members working on multiple projects from designing a monitoring system for solar panels to assisting with building a Tiny Home to developing education programs. The team has active collaborations with several NGOs, companies and schools in Canada, Mexico, Nepal, and Nicaragua as well as a strong summer exchange program with its sister branch in Tec de Monterrey, Mexico.
 - The [UBC Environmental Policy Association \(EPA\)](#) analyzes economic and political responses to climate change, and runs events to engage students in environmental policy. Past events include [Careers in Sustainability Night](#).
 - [Climate Justice UBC](#) is a group of UBC students, faculty, staff, and alumni committed to advocating for meaningful political climate action. The group is a key player in the campaign for fossil-fuel divestment and community reinvestment at UBC.
- [Visit a list of more than 70 student groups active on climate change and sustainability.](#)

Accelerate Emissions Reductions at UBC Vancouver and UBC Okanagan in Response to the Climate Emergency: Climate Action Plan 2030

In 2021, Times Higher Education University Impact Rankings once again scored UBC among the top universities globally for climate action. The climate emergency represents one of most pressing issues of our time and UBC will continue to leverage its institutional and intellectual capacities to demonstrate climate leadership through continued action to address climate mitigation and adaptation.

Responding to the urgency of the climate and biodiversity crisis, UBC released the [Vancouver Climate Action Plan 2030](#) and the [Okanagan Climate Action Plan 2030](#) in 2021. These plans put the University on an accelerated path to net zero emissions for buildings and energy supply, as well as targeting significant emissions reductions for extended impact areas – aligning, and in some cases surpassing, the 2030 emissions reductions required to achieve the UNFCCC’s Paris Agreement goal of keeping global temperatures within 1.5°C.

EMISSIONS REDUCTIONS

- In 2021, UBC Vancouver achieved a combined 25% reduction in total offset-able greenhouse gas (GHG) emissions vs. 2007 – despite an overall 25% growth in floor space and 41% increase in student enrolment during the same period.

- Overall, UBC Vancouver has achieved a 46% GHG emissions reduction per full-time equivalent student since 2007. In 2021 UBCO reduced operational GHG emissions by 31% vs. a 2013 baseline.

- UBC has also offset 100% of Scope 1 and 2 GHG emissions since 2010 as part of BC’s Carbon Neutral Government Program. More information on UBC’s decarbonization success can be found in the annual [Climate Change Accountability Report \(CCAR\)](#).

LOW-CARBON INFRASTRUCTURE INVESTMENTS

- The Vancouver campus recently invested in an expansion of the [Bioenergy Research and Demonstration Facility \(BRDF\)](#). Once the BRDF is fully functional, it is forecasted that campus operational GHG (Scope 1 and 2) reductions will achieve an estimated 60% reduction from the 2007 baseline.

- In 2021, UBC Okanagan’s newest residence, [Nechako Residence and Commons Block](#), was completed. Targeting LEED® Gold certification, this new facility is connected to the campus’ low-carbon district energy system to reduce the building’s reliance on fossil fuels for energy supply. Skeena Residence is also Canada’s [first Passive House Certified Student Dormitory](#) and BC’s Net Zero Energy Ready Challenge Award winner. Nechko and Skeena have significantly increased the sustainability of on-campus housing.

IX. Accelerate Emissions Reductions



Credit: Paul H. Joseph / UBC Brand & Marketing

FURTHER COMMITMENTS TO REDUCE GHG EMISSIONS

UBC's two ambitious 2030 Climate Action Plans (CAP 2030) are aiming for an operational GHG (Scope 1 and 2) reduction of 85% at the Vancouver Campus and a 65% reduction at the Okanagan Campus by 2030. Both plans also include a 45% reduction in emissions from extended impact sources (Scope 3 - including commuting, food, business air travel, embodied carbon, waste and materials, and paper) to align with the intent of UBC's Declaration of a Climate Emergency.

Multiple initiatives are now underway across the institution to help achieve CAP 2030 targets for both campuses (which vary slightly between campuses) as reported on the [CAP 2030 website](#), [UBCO's CAP website](#), and in UBC's [Annual Sustainability Report](#):

- Commuting: 45% reduction in GHG emissions
- Food systems: 50% reduction GHG emissions
- Waste and materials: 50% reduction in GHG emissions, progressing toward a zero-waste and circular economy community
- Business air travel: 50% reduction in GHG emissions
- Embodied carbon: 50% reduction in embodied carbon GHG emissions associated with new construction
- Engagement and outreach: 75% of UBC faculty, staff, and students will be aware of UBC's climate action goals and participating in UBC's evolving and expanding culture of sustainability
- Financial mechanisms: piloting of UBC's internal carbon price at \$250/tCO₂e to favour low carbon decision making

Conclusion

Climate exacerbated extreme weather events are increasing in frequency. The need to prepare for irreversible climate impacts and mobilize to limit global warming is more urgent than ever.

Universities have a unique role and responsibility to respond to the climate emergency through education, research, relationship-building, and to identify and advocate for solutions that propel transformative change. Spurred on by years of student, faculty, and staff activism and advocacy, together with administrative leadership, UBC can continue to model how a university best responds to the climate emergency, while learning from the leadership shown by other universities, organizations, and Indigenous Nations, especially its Host and Partner Nations.

Glossary

AMS UBC Alma Mater Society

APSC Applied Science

ASR Annual Sustainability Report

CAP 2030 Climate Action Plan 2030

CEF Climate Emergency Fund

CETF Climate Emergency Task Force

GSS Graduate Student Society

IBPOC Indigenous, Black and People of Colour

IEWG Indigenous Engagement Working Group

ICAT Interdepartmental Climate Action Team

IRES UBC Institute for Resources, Environment and Sustainability

PICS Pacific Institute for Climate Solutions

UBC ISP UBC's 2020 Indigenous Strategic Plan

UBC IMANT UBC Investment Management Trust

UBCO UBC Okanagan

UBCV UBC Vancouver

UNDRIP United Nations Declaration on the Rights of Indigenous Peoples

UNFCCC United Nations Framework Convention on Climate Change

References & Further Reading

[ANNUAL SUSTAINABILITY REPORT](#)

[CETF REPORT](#)

[ISP IMPLEMENTATION TOOLKIT AND ISP SELF-ASSESSMENT TOOL](#)

[OKANAGAN CAP 2030](#)

[OKANAGAN CLIMATE CHANGE ACCOUNTABILITY REPORT \(CCAR\)](#)

[STUDENT ACADEMIC CLIMATE ADVOCACY TOOLKIT](#)

[UBC CLIMATE HUB ANNUAL REPORT](#)

[VANCOUVER CAP 2030](#)

[VANCOUVER CLIMATE CHANGE ACCOUNTABILITY REPORT \(CCAR\)](#)

[WELLBEING ANNUAL REPORT](#)

[WELLBEING STRATEGIC FRAMEWORK](#)

COVER IMAGE

I'm with her (the earth)

Credit:  Chris Yakimov

