



THE UNIVERSITY OF BRITISH COLUMBIA

Climate Solutions Research Collective

A photograph of several wind turbines in a field under a blue sky with white clouds. The turbines are white and have three blades each. They are arranged in a line, with the closest one in the foreground and others receding into the distance. The ground is a flat, open field.

CLIMATE SOLUTIONS RESEARCH COLLECTIVE **2024-25 SUMMARY REPORT**



CLIMATE SOLUTIONS RESEARCH COLLECTIVE
DIRECTORS REPORT

CLIMATE RESEARCH AND SOLUTIONS FACE STRONG
HEADWINDS IN NORTH AMERICA

To our south, the Trump Administration is eliminating most federal climate mitigation and adaptation measures, including removing supports for renewable energy and climate justice programs. It is also making cuts to research and granting agencies, bullying universities, and closing federal research labs and offices, including the iconic Mauna Loa Observatory, home to the longest continuous record of atmospheric carbon dioxide levels.

Here at home, the Canadian government, facing economic and political threats from the new US administration, is under pressure to diversify trade relationships and expand oil and gas export markets, at the expense of efforts to meet our climate targets. All of this is happening while the planet continues to break temperature records, and wildfires, floods, heatwaves and other extreme events continue to threaten homes, lives and livelihoods.

Amidst these headwinds, it can be hard to imagine or to trust that there could be favourable conditions for climate solutions on the horizon. Yet signs of long-term tailwinds abound.

Globally, climate action and the transition to clean energy are accelerating. Emissions have decreased across the G7 over the last two decades. The global market for the six key clean energy technologies—solar cells, wind turbines, electric vehicles, batteries, electrolyzers and heat pumps—quadrupled in size over the last decade, buoyed by a more than ninety per cent drop in costs in some cases. Over the past year, China’s emissions declined for the first time because of expansion of clean electricity and electric vehicles.

These developments will not be enough to avoid passing 1.5°C of warming, the lower ‘guardrail’ in the Paris Agreement. We are, however, also no longer on the path for the more catastrophic 4°C warming scenario that was broadly feared in the early part of the century.

What does this mean for UBC? We need to fight through the headwinds, the near-term and more local obstacles to climate research and action, and prepare to unfurl our sails to catch those longer-term tailwinds.

The Climate Solutions Research Collective (CSRC) aims to support UBC researchers on both counts.

The CSRC launhed two years ago to foster engagement between researchers, encourage new collaborative research and to help university researchers contribute to climate solutions at the national and international level.

Supported initially by eleven UBC Faculties and matching funds from the Office of the Vice-President, Research and Innovation, the CRSC is not a centre, program, or club to which you must belong. It is a collective—a framework through which all UBC researchers interested in climate action can connect and explore new ideas and challenges.

Through seminars, workshops and the graduate Solutions Scholars program, the CSRC is catalyzing new collaborative research on climate change mitigation, adaptation and education. Over the past year, we sponsored collaborative projects in the areas of artificial intelligence, carbon offsets, heatwave forecasting and agricultural solutions; linked researchers across faculties and campuses; and engaged and coordinated with provincial and national research institutions like the Pacific Institute for Climate Solutions and the Canadian Climate Institute.

With an additional three years of funding now secured, the Steering Committee of the CSRC and I aim to expand the programming and bring together researchers from an even broader array of disciplines.

This report shares an update on the state of climate research at UBC, summarizes the activities of the CSRC in its second year, and looks towards the future.

Simon Donner
Director, Climate Solutions Research Collective

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

Cover image:
Wind turbines in Southern Alberta, via Unsplash

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THE WORK OF THE COLLECTIVE: BY THE NUMBERS

COLLABORATIONS

Nine Faculties at the Vancouver campus and two Faculties at the Okanagan campus continued to provide financial support for the CSRC, with VPRI providing matching contributions. Additional funding was provided through a [Pacific Institute of Climate Solutions University Climate Knowledge Mobilization Grant](#), UBC [Collaborative Research Mobility Awards](#), and in-kind contributions by individual Faculties.

With the goal of reaching researchers across both campuses, the CSRC collaborated on events and initiatives with the [Centre for Climate Justice](#), [Centre for Law and the Environment](#), [Centre for the Study of Democratic Institutions](#), [Disaster Resilience Research Network](#), [Faculty of Applied Science](#), [Research-based Theatre Cluster](#), [UBC Health](#), [UBC Sustainability](#), and the [Watershed Ecosystem Research Excellence Cluster](#). The CSRC also hosted or supported conversations with external groups like the [Canadian Climate Institute](#) and the [Pacific Institute for Climate Solutions](#).

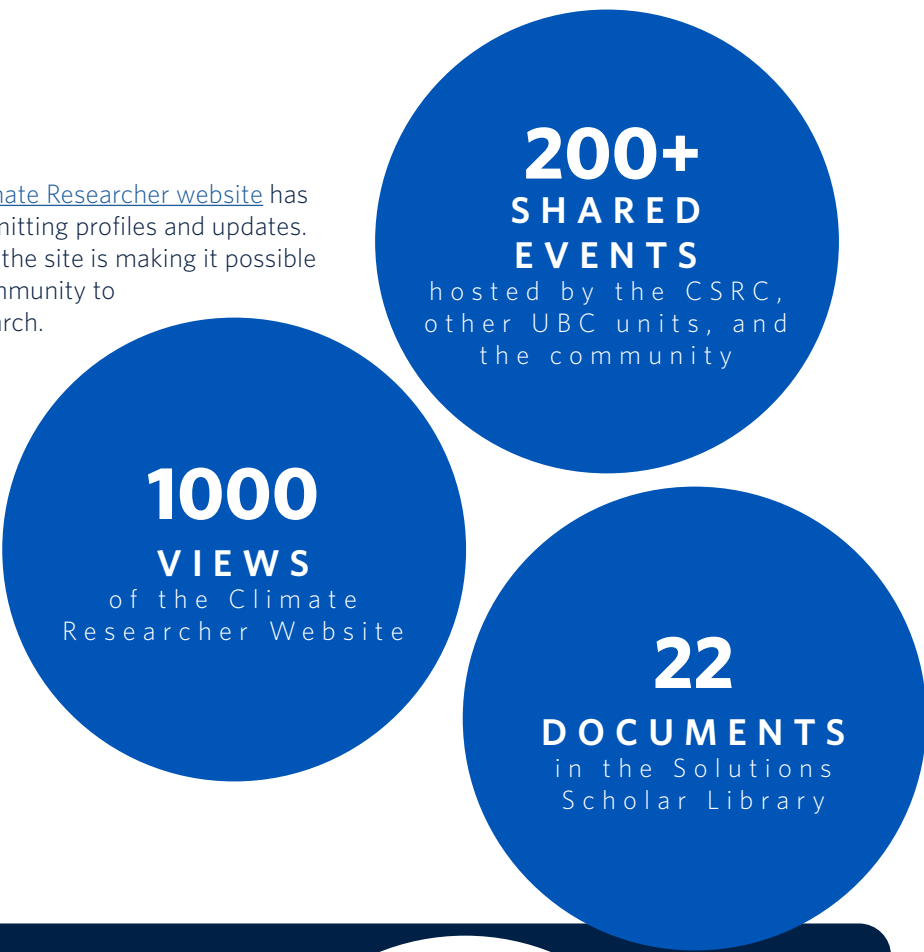


TOOLS AND RESOURCES

After launching in September 2024, the [Climate Researcher website](#) has continued to grow thanks to individuals submitting profiles and updates. With over a thousand individual page views, the site is making it possible for people inside and outside of the UBC community to find experts in specific areas of climate research.

The CSRC hosts an [events calendar](#) with the goal of sharing opportunities for individuals and units across UBC’s climate community and beyond to explore climate-oriented topics. Funding opportunities, events and other resources are also shared through our growing [listserv](#).

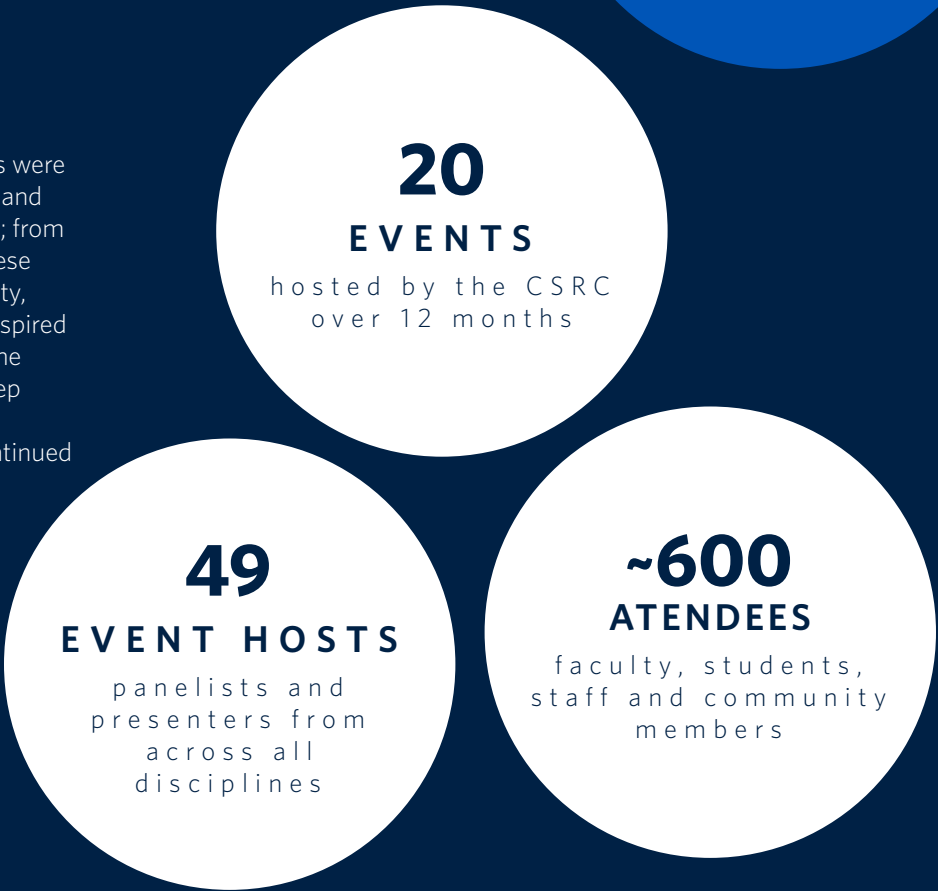
With two years of programming complete, our [Solutions Scholar Library](#) is also growing. The Solutions Scholars submit materials that they developed through the program, including research briefs, opinion pieces, academic papers and posters.



EVENTS

In the CSRC’s second year, twenty events were hosted on topics ranging from migration and health to disinformation and polarization; from elections to extreme weather events. These events connected the research community, highlighted UBC climate research, and inspired new conversations and collaborations. The number of participants illustrates the deep interest in opportunities to connect and exchange knowledge. The CSRC also continued to showcase climate-oriented activities hosted by other units through an online events calendar and newsletter.

See more about our events on pages 8 and 9.



SOLUTIONS SCHOLARS

The Solutions Scholars program provides an opportunity for students to engage in new interdisciplinary solutions-oriented projects proposed by teams of faculty from different disciplines. The 2024/25 cohort was made up of twelve graduate students from UBC Vancouver and two from UBC Okanagan. Through the program, the Solutions Scholars worked together on four separate projects, mentored by faculty in Forestry, Land and Food Systems, Mathematics, Political Science, Applied Science and other disciplines.

Access project descriptions and resources at [climatesolutions.ubc.ca/climate-solutions-research](#).

“[The program] was an opportunity to learn from the mentors and other faculty and staff about the “nuts and bolts” of research and academia, and to learn more about a topic in depth. I also really enjoyed learning from the other projects and meeting people working on climate and other projects in the university that I may not have met otherwise.”
Solutions Scholar, 2024/25.



THE WORK OF THE COLLECTIVE: SOLUTIONS SCHOLARS

CLIMATE CHANGE ROOTED IN LANGUAGE: LARGE LANGUAGE MODELS UNCOVER AND AMPLIFY NARRATIVES



photo credit: unsplash

Solutions Scholars: Viola Jasmine Provost (Forestry), Pritam Dash (ApSc) and Victor Cardenas (IRES)

Project Mentors: Milind Kandlikar (IRES, SPPGA), Sathish Gopalakrishnan (ApSc) and Navin Ramankutty (IRES, SPPGA)

With AI changing so rapidly, the team’s original direction of exploring the use of Large Language Models (LLM) to ‘chat’ with the IPCC reports shifted. Building on the team’s skills, including their ability to read and write in four unique languages, the team instead explored how the language used in the LLM uncovered different climate narratives, impacting what different users learn about climate change and have submitted a [paper for publication](#).

They queried the tool GPT-4o on how it frames climate discourse in English, German, Hindi and Spanish, assessing how the model communicates causes, issues and proposed solutions to climate change. They found that the language-based responses varied in their tonal phrasing, showing that LLMs are not merely passive translation tools but act as active cultural intermediaries. Additionally, they noted that responses varied in topical foci across languages, in which LLM acts as an amplifier of these narratives, with responses also varying in depth and completeness across languages.

“The rapid dominance of LLMs in web searching, along with their analytical capabilities, presents significant challenges in assessing their impact on climate science, policy, and governance... There is an urgent need for adaptable evaluation methods and frameworks that can keep pace with LLM developments, ensuring their responsible use in climate solutions and supporting evidence-based environmental action.”

ADVANCING CLIMATE MITIGATION AND ADAPTATION THROUGH AGROECOLOGICAL TRANSITIONS

Solutions Scholars: Evan Eskilson (IRES), Caitlin Ciampaglia (LFS), Talha Naeem (Economics), Anny Wang (Mathematics), Sofia Bahmutsky (FoS Interdisciplinary Studies)

Project Mentors: Hannah Wittman (IRES, LFS); Sean Smukler (LFS, UBC Farm); Khanh Dao Duc (Mathematics)

Transitioning to smaller scale and diversified farming systems has been proposed as a climate solution, but the relationship between farm size, farming practices and greenhouse gas emissions is not well quantified. With the ultimate objective of informing farmers of tools that can support on-farm climate mitigation and sustainability efforts, this team evaluated and compared emissions models and calculators for use by small farms.

The Scholars began by working on developing PyHolos, a Python-based agricultural emissions calculator designed to suit small, diversified farms adapted from the Canadian-based calculator Holos. They then contrasted its performance with that of other mainstream emissions calculators (Comet and Cool Farm), and evaluated the challenges and opportunities presented by these calculators. Finally, they compared PyHolos-estimated emissions with on-farm emissions measurements, using data from the UBC Farm and a research farm in Alberta.

In addition to a [final report](#), the Solutions Scholars produced two research briefs ([one](#) and [two](#)) to provide tangible support for on-farm management decisions related to nutrient management, climate and farm profitability.

“Our goal is to reduce the burden of data entry with ‘one entry - many uses’ data management, representing a promising step towards inclusive and sustainable agriculture.”



Researchers use the LiteFarm application to collect data at UBC Farm

ENHANCING HEATWAVE FORECASTING AND PUBLIC UPTAKE: A COLLABORATIVE PROJECT WITH ENVIRONMENT AND CLIMATE CHANGE CANADA (ECCC)

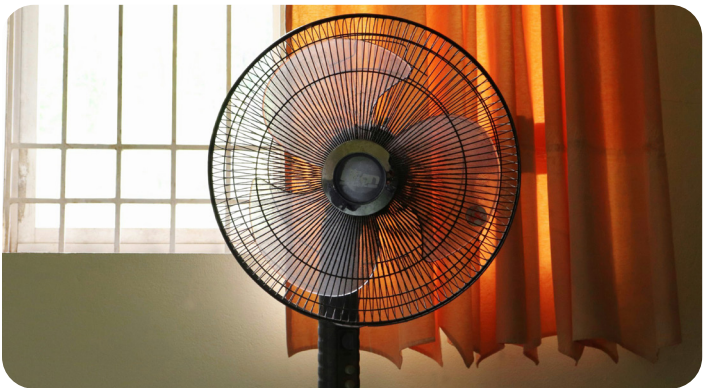


photo credit: unsplash

Solutions Scholars: Jing Jiang (Forestry), Vicky Lucas (IRES), Emily Kaakyo Rubooga (FASS, Interdisciplinary Studies)

Project Mentors: Rachel White (EOAS), Farrukh A. Chishtie (OSOT) and partners with ECCC

The goals of this collaborative project were to enhance technical heatwave forecasting systems, strengthen public understanding and action related to heatwave forecasts, and design warning tools that are inclusive and user-centered.

Forecasting innovation and technical modelling were evaluated through multiple state of the art AI/Machine Learning (ML) models. Retrospective testing on events like the 2021 BC heat dome was conducted to better understand the integration of AI/ML tools, including the technical feasibility of extending warning lead times and creating impact-based forecasting. Building on possibilities for technical innovations, a [needs assessment report](#) was developed to identify ways of increasing the effectiveness and public uptake of such heatwave warnings in BC. Through interviews and focus group discussions with key ECCC stakeholders, the report captures gaps, opportunities and priorities in heatwave warning systems. The insights reflect both technical and behavioral dimensions, emphasizing the need for more personalized, accessible and actionable forecast information.

Much of the knowledge developed in this project was mobilized into a [practical guide for operational and research meteorologists](#) that explores the use of ML in weather prediction, opportunities for extending the forecasting window, and unresolved tensions and challenges for applying ML.

“By prioritizing accessibility, usability testing, and inclusive design from the start, solutions can bridge the gap between forecasting and public action.”

CARBON OFFSETS: CLIMATE ACTION OR SUSTAINABILITY ILLUSION?

Solutions Scholars: Peter McCartney (SCARP), Lucy Binfield (Forestry), Isabella Morgante (IOF)

Project Mentors: Hisham Zerriffi (Forestry), Kathryn Harrison (Political Science), Werner Antweiler (Sauder School of Business), Gregory Paradis (Forestry)

While carbon offsets are seen by industry as cost-saving and by governments as flexible regulatory tools, reforms are needed to improve transparency, strengthen benchmarks and harmonize systems across jurisdictions. This team of Scholars worked on three interconnected projects to provide critical analysis and insights on the use of carbon offsets in the Canadian context. The ultimate objective was to work with the mentors to develop future research projects and multistakeholder dialogues on the future of carbon offsets, particularly in British Columbia where forest-based projects face criticism over their effectiveness and permanence.

In addition to kickstarting a wider conversation around carbon offsets within the mentor group, the Solutions Scholars also organized an [interactive workshop](#) at the Institute for Society and Natural Resources Conference, a large multidisciplinary conference held in Vancouver. Their session was well attended with high engagement and was mentioned in the Opening Plenary Session. One Solutions Scholar was selected for an internship in carbon markets analysis after a prospective employer saw the presentation at the Solutions Scholars Summit event in April 2025. The team engaged in further knowledge extension through publication of a [think piece](#) discussing some of their findings; a second commentary is under development and will be published in the coming months.

“Our cross-disciplinary team of faculty and students worked together to uncover the reality behind the controversy on carbon offsets and explored their future in British Columbia and around the world.”

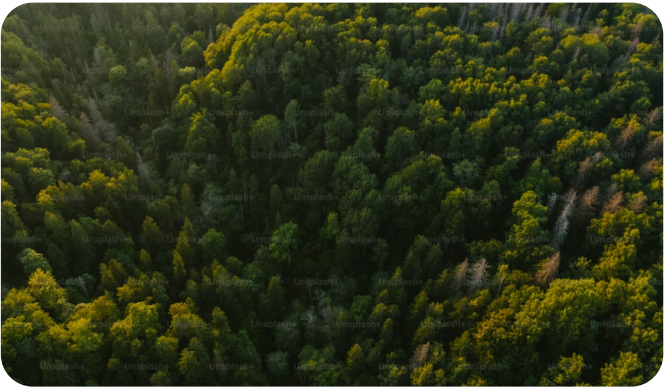


photo credit: unsplash

CLIMATE CONVERSATIONS

During consultations in our first year, we heard that UBC researchers valued opportunities to come together in person to share and hear diverse perspectives on timely climate issues. At these events, hosts shared their expertise and knowledge on topics including: [the state of climate policy in Canada](#); [greenwashing and related calls for restrictions on advertising](#); [ongoing youth-led climate litigation](#); compound climate hazards ([online](#) and in [Kelowna](#)); [the intersection of climate migration and health](#); and [research directions and areas for collaboration](#). Attendees at each event had the opportunity to share their own experiences and engage in two-way dialogue. These conversations will continue in the 2025/26 academic year, through a mix of in-person and online events.



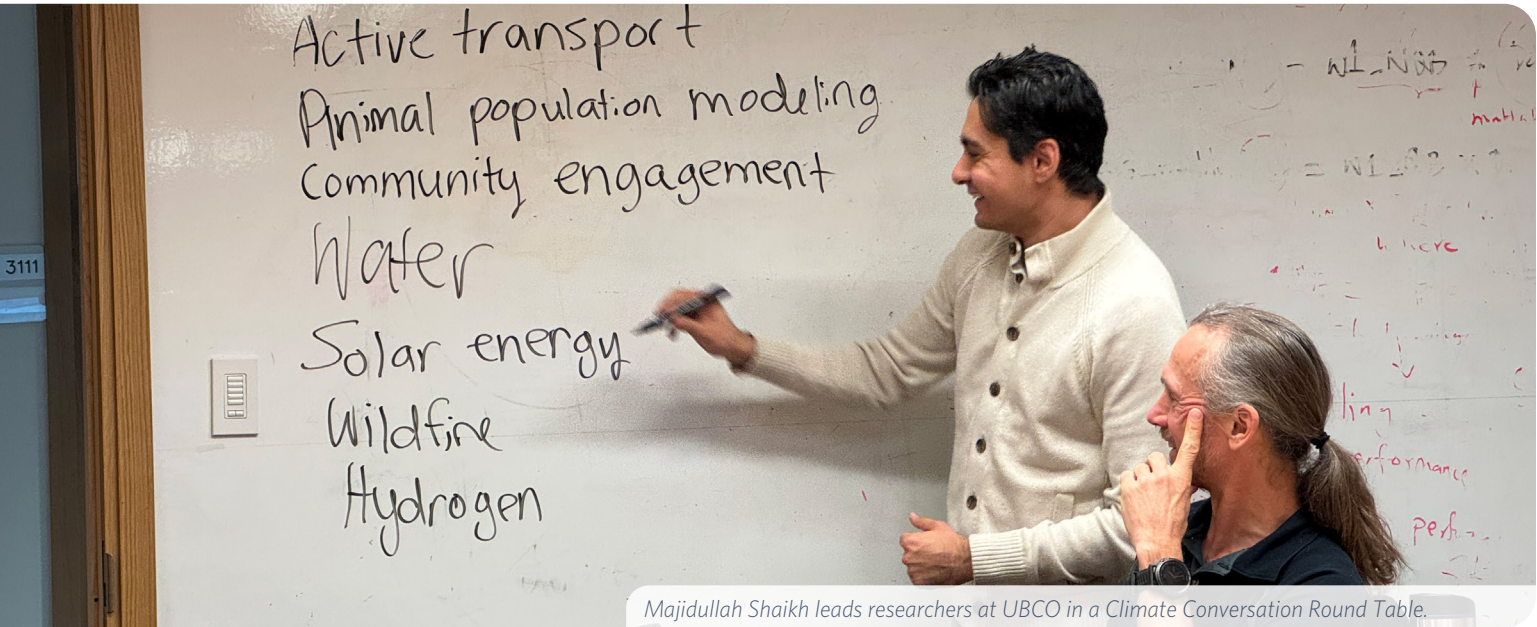
Natasha Affolder answers a question during at the 2025 Climate+Water Symposium.

CLIMATE, POLITICS AND POLICY

With important elections at the provincial, federal and international level in 2024/25, climate politics and policy were overlapping themes explored through CSRC events. This included [panels about Climate in the BC Election](#) featuring faculty from Political Science, Sociology, Applied Science and Business; the implications of [climate policy under the new US administration](#) featuring cross-campus specialists in energy, policy and politics; and [political polarization and misinformation in Canadian politics](#) with researchers from the Centre for the Study of Democratic Institutions and Department of Sociology. In addition, the [Unpacking COP29](#) event explored the key issues at last year’s international climate negotiations from the perspectives of students and faculty alike. These sessions were amongst the most attended of the year.

CLIMATE+WATER RESEARCH SYMPOSIUM

With the goal of gathering the UBC research community together to explore research needs at the intersection of climate change and water issues, the CRSC organized this dual campus symposium in collaboration with presenting partners the [Watershed Ecosystem Research Excellence Cluster](#) in Kelowna and [UBC Sustainability](#) in Vancouver. The event launched in Kelowna with a Day 1 plenary discussion exploring [water justice through a changing climate](#) by laʔlaʔtkʷ Jeannette Armstrong and John Wagner. On Day 2, the event began with a plenary panel in Vancouver on the intersections of climate, power and water with Natasha Affolder, John Richardson and Werner Antweiler. Summaries and recordings are available for both [Day 1 in Kelowna](#) and [Day 2 in Vancouver](#).



Majidullah Shaikh leads researchers at UBCO in a Climate Conversation Round Table.

SOLUTIONS SUMMIT

The annual [Solutions Summit](#) was an opportunity for the Solutions Scholars to present their work and engage with the broader community. Held in April, with two months remaining in the program, project teams used the opportunity to communicate their progress, gain feedback from other UBC researchers, and exchange ideas with the community about the wider implications of their work.

“The Solutions Summit was a useful way-point and thought-organiser for our team. It was so interesting to be part of all team journeys into producing externally facing ideas - especially sharing that all our work has evolved due to the enormity or changing nature of the topics. To have a room full of engaged externals and our peers was energising... The conversations following the presentation impressed on me how important our topic is, that glimmer of its practicality and full context beyond our team research efforts.” Solutions Scholar, 2024/25

CLIMATE RESEARCH AT UBC: NEW RESEARCHERS AT UBC

UBC’s departments and faculties continue to prioritize climate in many recent hires. This is a small selection of new UBC faculty members whose research program includes a focus on climate.

WOUTER BAM — MANUFACTURING ENGINEERING (OCTOBER 2023)

Joining UBCO’s School of Engineering in 2023, Dr. Bam’s research focuses on developing quantitative and qualitative decision-support tools for industrial development-related decision-making. These tools aim to shed light on the environmental, social and economic impacts of different developmental pathways.

EMILY BRIGHAM — RESPIRATORY MEDICINE (SEPTEMBER 2021)

Dr. Brigham joined UBC’s faculty of medicine from her position as Assistant Professor at Johns Hopkins. In her role as Associate Professor of Respiratory Medicine and through her Legacy for Airway Health Professorship, she has explored topics such as the burden of climate change and urban lung health. Her research includes ways to translate findings into action, in particular those within susceptible and vulnerable populations.

ALESSANDRO IELPI — EARTH AND ENVIRONMENTAL SCIENCES (JANUARY 2023)

Dr. Ielpi leads UBCO’s Surface Processes Group, which promotes integrations between geomorphology and sedimentology, environmental sciences, geomatics and geophysical modeling. His research aims to pinpoint responses of watersheds to environmental stresses related to climate change and wildfires.

BAVISHA KALYAN — CIVIL ENGINEERING (DECEMBER 2024)

Dr. Kalyan’s research focuses on building equitable community-academic partnerships to understand contaminant exposure in vulnerable communities. Her research interests are at the intersection of environmental health and engineering, environmental justice and community-based participatory action research.

KWANG HO KIM — WOOD SCIENCE (JULY 2024)

Dr. Kim leads the Biorefinery and Biomass Conversation Lab and is dedicated to developing sustainable biorefinery processes that maximize the conversion of biomass carbon into value-added products. His research aims to advance environmentally friendly and economically viable technologies for the bioeconomy.

MARYSA LAGUË — GEOGRAPHY (JUNE 2024)

A climate scientist with a background in both atmospheric science and mathematics, Dr. Laguë’s research focuses on understanding how terrestrial processes impact the atmosphere and surface climate from the scale of a single plant to the scale of a planet, by modulating fluxes of water and energy between the land and the atmosphere.

THEODORE LIM — COMMUNITY AND REGIONAL PLANNING (JULY 2024)

Dr. Lim’s work focuses on environmental planning, including urban climate adaptation, resilience and sustainability planning, ensuring that knowledge is used to create healthy, just and inclusive futures for the most marginalized in society amidst a period of accelerating change. He has led several participatory action research projects around urban heat resilience to keep communities safe as climate change causes temperatures to continue to rise.

KATHRYN MCCONNELL — SOCIOLOGY (JULY 2024)

Dr. McConnell’s research examines the social dynamics of climate change, with a focus on the intersection of climate hazards, the built environment and population mobility. It focuses primarily on the relationship between the environment and migration, changes to housing and infrastructure as a result of and in response to climate-related hazards, and the politics of building and development under climate change.

ENDA MURPHY — COASTAL ENGINEERING (JULY 2024)

Dr. Murphy has nearly two decades of applied research and consultancy experience involving application of numerical and physical modeling techniques to address coastal engineering and coastal zone management challenges. His research works toward an improved understanding and more sustainable management of coastal hazard risk through trans-disciplinary, whole systems approaches and nature-based solutions.

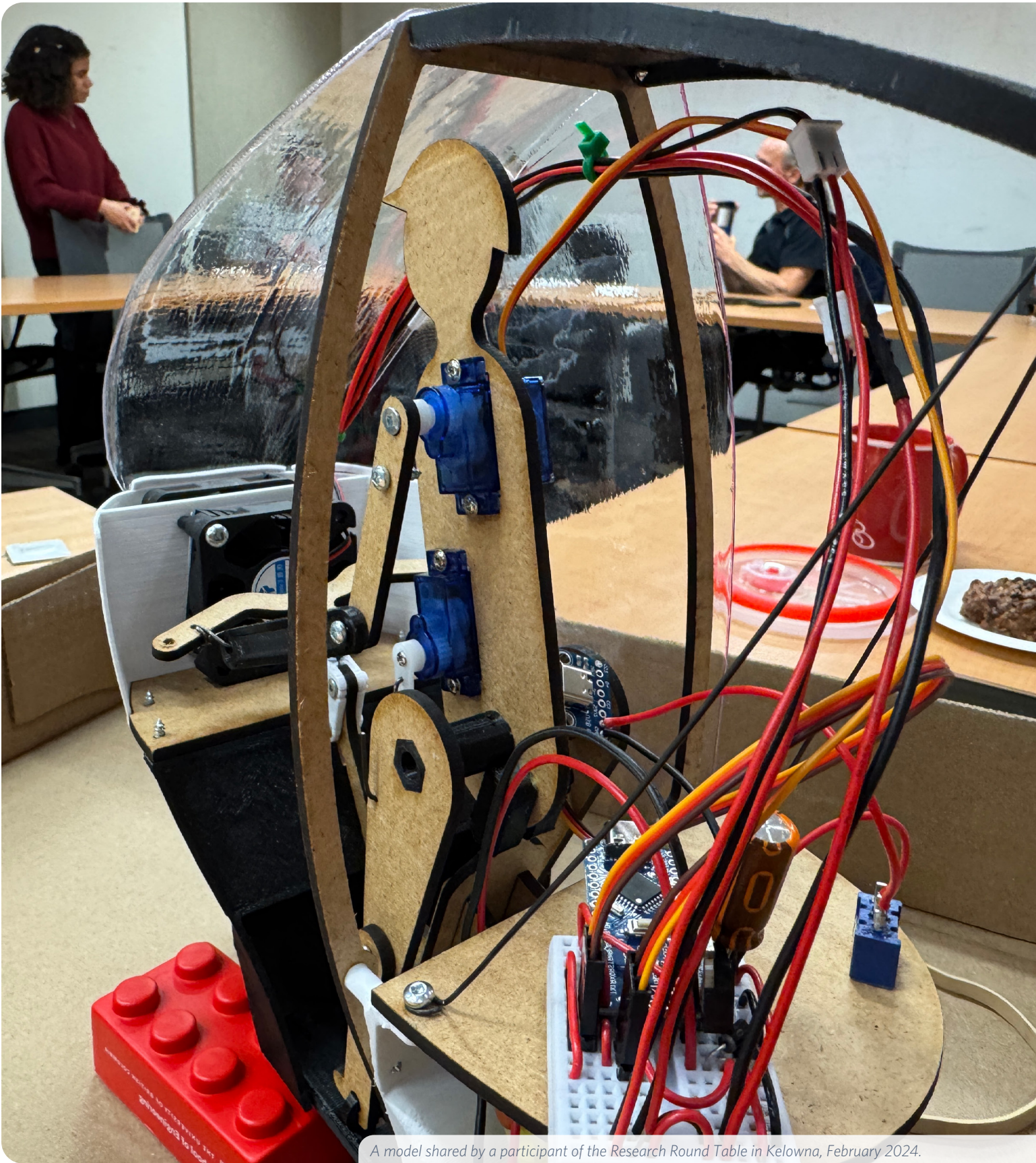
ZELALEM TAYE — LAND AND FOOD SYSTEMS AND FORESTRY (JANUARY 2025)

Dr. Taye leads the Plant-Soil Microbiome Ecology and Innovation Lab. Working across agricultural, forest, and urban ecosystems, focusing on ecosystem productivity, sustainability, and resilience in the face of global change his research includes plant and soil microbiome using a One Health approach and developing genomic and computational tools to support climate resilient strategies.

CLIMATE RESEARCH AT UBC: NEW FUNDING IN 2024/25

Through internal funding resources such as the Research Excellence Clusters and the Peter Wall Legacy Awards, and national and international funding agencies, UBC researchers are engaging in climate solutions research from every disciplinary perspective. In 2024/25, UBC researchers launched and participated in a series of new solutions-oriented climate research projects. This list features only a few of the diverse range of projects funded over the past year:

- [Terre Satterfield](#) (IRES) is co-leading the new \$24-million, six-year [Solid Carbon: The Ocean's Rock-solid Sociotechnical Climate Solution](#) project with colleagues at University of Victoria and Columbia University, supported through the [Government of Canada's New Frontiers in Research Fund](#).
- [Anthony Lau](#) (Applied Science) was awarded a three-year research grant under the [NSERC Alliance program](#) in collaboration with [Providence Health Care \(PHC\)](#) to develop solutions for converting food waste from healthcare facilities into renewable natural gas (RNG) and other valuable resources.
- The Sauder School of Business supported six grants through the [2025 Research Grants for Advancing Climate Solutions through Business Innovation](#) across the themes of climate risks and supply chain resilience, sustainable business and decarbonization, and behavioural science and climate communication.
- UBC's [2025/26 Research Clusters](#) include the [Climate Disinformation and Obstructionism Research Cluster](#) lead by [David Tindall](#) (Sociology), which is organized around research on identifying climate change disinformation and developing strategies to counter intentional obstruction of climate action.
- The [2024 Peter Wall Legacy Awards](#) include several projects that prioritize climate solutions. [Kathryn Harrison's](#) (Political Science) project, *The New Politics of Fossil Fuel Subsidies*, will create a database of subsidies and public finance across provinces, examine the politics of fossil fuel subsidies, and compare the views of British Columbians and Canadians in other provinces on fossil fuel subsidies. [Jean-Thomas Cornelis'](#) (LFS) project, *Back to the Future: Revitalizing Indigenous land stewardship to enhance soil health and build resilient food-forest systems in British Columbia* aims to increase understanding of the history of Indigenous soil management and their benefits for climate change mitigation and adaptation. Several other Team Faculty and Graduate Student Awards also focus on researching and advancing climate solutions.
- Through its [Ignite](#) program, [Innovate BC](#) awarded [Gregory Paradis](#) (Forestry) and partner Flash Forest funding for a project scaling reforestation through AI-enabled site selection, drone-based and land-based seedpod deployment, and biologically optimized seedpods. This project directly supports wildfire recovery, habitat restoration, and climate mitigation efforts.
- Several [SSHRC Insight Development Grants](#) were awarded in 2025 to faculty addressing climate solutions including [Andrew Jorgenson](#) (Sociology) with the project *Income Inequality, Economic Growth, and the Climate Crisis: Longitudinal Analyses of Province-Level Carbon Emissions in Canada* and [Tahia Devisscher](#) (Forestry) with the project *Enabling equitable nature-based solutions for social-ecological resilience to climate change*.
- [Stefan Grzybowski](#) (Family Practice) and Mark Neufeld, with collaborators from Simon Fraser University, the University of Victoria and the community, have been awarded a 2024 Michael Smith Health Research BC Reach Award for their project [Supporting Youth-Physician Networks in Response to the Health Effects Climate Change and Environmental Disruption](#). Several other Michael Smith [Reach and Convening & Collaborating awards](#) address the intersections of health and climate.
- Several [NSERC Discovery Grants](#) have also been awarded in 2025 to faculty addressing climate solutions including [Amanda Giang](#) (IRES; Mechanical Engineering) with the project *Cumulative chemical risk assessment under climate extremes* and [McKenzie Kuhn](#) (Geography) with the project *Response of atmospheric methane consumption by Northern soils to climate warming*.



A model shared by a participant of the Research Round Table in Kelowna, February 2024.

CLIMATE RESEARCH AT UBC: PROGRESS OF CLIMATE RESEARCH

In addition to the new projects, researchers at UBC continue to work on ongoing solutions-oriented progress in a number of fields. Here are only a few examples of ongoing research from across the two campuses:

PEOPLE, CLIMATE AND THE BUILT ENVIRONMENT

PI [Liv Yoon](#), who joined the School of Kinesiology (Education) in January 2023, Co-Lead PI [Mohammed Rafi Arefin](#), Co-PI [Geraldine Pratt](#) (Geography) continue their collaboration through the [Centre for Climate Justice](#) on an international multi-institutional initiative on [Housing Equity and Adaptation for Tenants \(HEAT\)](#). Their work explores indoor environmental quality and the use of “climate safe” rooms, the impacts of climate change adaptation policy, and the mechanisms that lead to climate-related rent increases and evictions.

A team at the [UBC Sustainability Hub](#) recently completed [Pathways to Net-Zero Embodied Carbon in Buildings](#), a two-year project supported by Environment and Climate Change Canada and the federal Net-Zero Advisory Body to identify barriers and challenge to implementing embodied carbon policies and practices. Their work developed partnerships and provided recommendations for implementing embodied carbon policy that aligns with Canada’s climate targets and pending updates to the national model building codes.

PI [Ben Mortenson](#) (Occupational Therapy) is conducting research on the [implications of climate change for people with disabilities](#) that addresses the important role Occupational Therapists play in supporting clients. Dr. Mortenson has commented that people with disabilities are “on the front lines of the climate crisis” because they are more likely to experience a number of social, economic and environmental barriers including unstable housing and poverty.

LEADING INNOVATIONS IN CLEAN ENERGY

The Okanagan is leading the charge in efforts to address clean energy storage. Initially funded as a [Battery Innovation Research Cluster](#) in 2022 led by PI [Jian Liu](#), the effort has expanded into a [Battery Innovation Centre](#), thanks to a two million dollar investment from the provincial government. The centre is providing a world-class space for researchers, government and industry partners to work together.

The [Solar Energy for Net Zero Research Excellence Cluster](#), led by Co-PIs [Alexander Uhl](#) (School of Engineering) and [Robert Godin](#) (Chemistry), are a multidisciplinary group of researchers from both campuses who are working collaboratively to advance our understanding of methods for harnessing, converting, storing and using solar energy with the aim to accelerate vast deployment. The [Clean Energy Research Centre](#) also provides a multidisciplinary home for researchers engaging in clean-energy research, training, development and demonstrations at both campuses.



Photo credit: Intact Centre on Climate Adaptation

WILDFIRE RESEARCH

Researchers at both UBC Okanagan and Vancouver campuses continue to lead work in wildfire research, including through the pan-campus [Center for Wildfire Coexistence](#) which hosted a successful [Wildfire Coexistence in BC: Solutions Symposium](#) in June 2024, bringing together twenty university and partner organizations. [Jen Baron](#) will be joining the Centre as an Assistant Professor in January 2026, directing the Fire Ecology and Management Lab, alongside researchers [Lori Daniels](#), Director of the [Tree Ring Lab](#) and [Mathieu Bourbonnais](#), Director of the Fire Ecology and Remote Sensing Lab.

Inaugural Solutions Scholar and Doctoral researcher [Kaushal Gnyawali](#) and supervisor [Dwayne Tannant](#) are deepening our understanding of [post-fire landslide risks](#), in particular in rural communities. Critical to their research are the partnerships developed with First Nations communities, rural residents, the BC Ministry of Forests and local engineering service companies. [Brian Hunt](#), professor in the Institute for the Oceans and Fisheries, is also exploring the cascading impacts of wildfires in BC, with an emphasis on the [impacts to water systems](#).

Lungs On Fire is a five-year, two-million-dollar research project that was funded by CIHR in 2014. Led by Dr. [Chris Carlsten](#), (MD; Respiratory Medicine) it brings together partners from across the province to explore the long-term health effects of wildfire smoke and investigate how to improve public health guidance on the topic. Through their [2025 Speaker Series](#) and the [Airwaves & Airways](#) podcast, they are sharing important learnings with the research community and beyond.

CLIMATE AND SOCIETY

In 2025, the [Center for the Study of Democratic Institutions](#) published its report [Municipal Matters: Building Capacity for Local Climate Conversations](#) which examines the challenges of communication around local climate action—especially when local policies face the spread of false or misleading information, whether intentional (disinformation) or unintentional (misinformation).

UBC Sociologists are working to unpack our relationship with climate change from a number of perspectives and approaches. Led by Founding Director Andrew Jorgenson, the [Climate & Society Lab](#) serves as an incubator for research on societal causes, consequences and solutions to the climate crisis. Focusing on the divide in public attitudes about climate change, [Emily Huddart](#) leads her team in defining, explaining and disrupting affective climate polarisation in Canada.



Participants engage in discussion at the 2025 Climate+Water Symposium



The first two years of the CSRC revealed a deep interest across UBC’s two campuses in centering research and engagement on solving interdisciplinary climate challenges. From the humanities to sciences, from medicine to law, researchers at UBC frequently asked “How can we launch new project?” and “How can we work together?”. The CSRC has received three additional years of support from across the university to help answer those questions.

The CSRC will continue to engage researchers to help launch UBC further into the era of climate research. Building on the work to date, the CSRC’s Steering Committee and staff are developing an exciting set of awards and programming that will catalyse timely new interdisciplinary, solutions-oriented research projects and raise external awareness of climate research conducted by UBC faculty.

It begins in the fall of 2025 with the third cohort of Solutions Scholars. In April, we held a second annual project pitch event in which teams of UBC researchers proposed new interdisciplinary projects for the next cohort of Solution Scholars. The 2025/26 cohort of scholars will work in teams on the following six selected projects, under the guidance of teams of faculty mentors from both UBC campuses:

- **Enhancing Wildfire Preparedness Through a Multi-Platform Tool** with [Ifeoma Adaji](#) (Computer Science, UBCO) and [Niyi Asiyinbi](#) (Geography, UBCO)
- **Laying the Foundations for the Establishment of a Climate Engagement Centre (CEC) in a BC Interior Town** with [Jon Corbett](#), (Community, Culture and Global Studies, UBCO), [Maged Senbel](#), (SCARP, UBCV) and [Mary Stockdale](#) (Geography, UBCO)
- **Developing a Climate Justice Education Cohort in Teacher Education: Needs Assessment, Resource Building, and Mapping Analysis** with [Sandra Scott](#) (Curriculum & Pedagogy, UBCV), [Kshamta Hunter](#) (UBC Sustainability) and [Douglas Adler](#) (Curriculum & Pedagogy, UBCV)

- **End-to-End GHG Emissions Tracking of Online Services** with [Mohammad Shahrads](#) (Electrical and Computer Engineering, UBCV) and [Ivan Beschastnikh](#) (Computer Science, UBCV)
- **Addressing Polarization: Arts-led Social Infrastructures for Anticolonial Climate Justice** with [Astrida Neimanis](#) (English and Cultural Studies, UBCO), [Onyx Sloan Morgan](#) (Community, Culture and Global Studies, UBCO) and [Naomi Klein](#) (Geography, UBCV)
- **Communicating Climate Extreme Impacts to Mobilize Action: Does Framing Matter?** with [Jiaying Zhao](#) (Psychology; IRES, UBCV) and [Rachel White](#) (Earth, Ocean and Atmospheric Sciences, UBCV)

We are also developing new programming for the upcoming 2025/26 academic year, including:

- **Kickoff event** in September and events in January to provide an opportunity for the UBC research community to gather around climate solutions;
- More **Climate Conversations** to spark in person dialogue on important issues like the climate impact of AI;
- Fresh **Graduate Student Programming** to provide professional development opportunities aimed at preparing the next generation of climate researchers which will be open to all UBC graduate students based on location; and
- A new **Catalyst Award** to support faculty in developing fresh climate-solutions focused research ideas, including through a new **Climate Solutions Research Symposium**.

The Collective is for everyone at UBC. Please join us!

2023-2025 FUNDING PARTNERS

- Allard School of Law (UBCV)
- Faculty of Applied Science (UBCV)
- Faculty of Arts (UBCV)
- Faculty of Arts and Social Sciences (UBCO)
- Faculty of Education (UBCV)
- Faculty of Forestry (UBCV)
- Faculty of Land and Food Systems (UBCV)
- Faculty of Management (UBCO)
- Faculty of Medicine (UBCV)
- Faculty of Science (UBCV)
- Sauder School of Business (UBCV)
- Office of the Vice-President, Research & Innovation

Additional funding provided through the Collaborative Research Mobility Awards, the UBC Work Learn Program, and the Pacific Institute for Climate Solutions

STEERING COMMITTEE

- Simon Donner, Professor, IRES (Science) and Geography (Arts) - Director
- Sally Aitken, Professor, Forest and Conservation Sciences (Forestry)
- Werner Antweiler, Associate Professor, Strategy and Business Economics Divion (Sauder School of Business)
- Michael Brauer, Professor, School of Population and Public Health (Medicine)
- Naoko Ellis, Professor, Chemical and Biological Engineering (Applied Science)
- Robert Godin, Assistant Professor, Chemistry (Irving K. Barber Faculty of Science)
- Sumeet Gulati, Professor, Food and Resource Economics (Faculty of Land and Food Systems)
- Kathryn Harrison, Professor, Political Science (Arts)
- John Janmaat, Professor, Economics, Philosophy and Political Science (Irving K. Barber Faculty of Arts and Social Sciences)
- Milind Kandlikar, Professor, IRES (Science) and School of Public Policy and Global Affairs (Arts)
- Carol Liao, Associate Professor, Peter A. Allard School of Law
- Derek Gladwin, Associate Professor, Department of Language and Literacy Education (Education)

A photograph of a forest path. In the foreground, a large tree trunk with textured bark is on the left. Sunlight filters through the green foliage, creating dappled light on the path. A green semi-transparent overlay is at the bottom.

CLIMATE SOLUTIONS RESEARCH COLLECTIVE
climatesolutions.ubc.ca