ANNUAL SUSTAINABILITY REPORT
ACADEMIC YEAR 2018 - 2019
We respectfully acknowledge that the activities highlighted in this report took place on the unceded and traditional territories of the Coast Salish peoples including the xʷməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Səl̓ílwətaʔ/Selilwitulh (Tsleil-Waututh) Nations. This land was never surrendered, relinquished, or handed over in any way.

We acknowledge that Indigenous communities are disproportionately impacted by the climate crisis and that Indigenous leadership and the inclusion of all voices is integral to climate justice.
We’ve come a long way in sustainability at SFU. We have a lot to be proud of. As the report card and highlights show there is a lot of work being done in all departments and units and across all campuses. We have incredibly dedicated students, faculty, staff, and alumni who work courageously and tenaciously at the task of making SFU a bright light in the sea of disheartening climate science.

As the context for doing this work is one of urgent climate crisis, SFU community members uniquely recognize that sustainability work cannot just be the work of the Sustainability Office or sustainability-focused staff in specific departments. The work of the last year has been the result of an “all hands on deck” attitude.

Looking forward we will all be connected and coordinated through two organizing mechanisms. The first is a new Strategic Sustainability Plan (2020-2025), which will focus activities at SFU on measurable climate action. The second is the Sustainability Impact Measurement Initiative, which will support robust data collection, measurement and accessible and transparent reporting on our progress. As part of this initiative, future SFU Annual Sustainability Reports will report directly on progress made toward the targets in the Strategic Sustainability Plan (2020-2025).

In the meantime these highlights inspire me to dig into another year of groundbreaking work. I hope that it does the same for you.

Candace Le Roy
Director
Sustainability Office
Ecological, social and economic sustainability is an institutional priority at SFU. The university’s commitment to sustainability is reinforced and guided by SFU’s Strategic Vision, SFU’s 20-Year Sustainability Vision and Goals and the Sustainability Policy (GP 38). SFU’s upcoming five-year Strategic Sustainability Plan (2020-2025) will enable further work towards the university’s vision of sustainability excellence.

In the future, the Annual Sustainability Report will provide updates on progress toward the targets in the Strategic Sustainability Plan, in addition to showcasing SFU sustainability-related successes. The purpose of this year’s report is to acknowledge and celebrate some of the outstanding sustainability-related highlights achieved across the university in the 2018 – 2019 academic year. It provides a snapshot, rather than an exhaustive review, of the breadth of sustainability-related work at SFU, demonstrating progress aligned to the United Nations Sustainable Development Goals (UN SDGs).

The Sustainability Office placed a call out to all the Vice President portfolios for highlights suggestions. For the chosen highlights, the Office worked with SFU community members to tell their story. Moving forward, you will be able to find more of these highlights on SFU’s sustainability website.

This report was compiled by the Sustainability Office on behalf of the SFU community. Sustainability at SFU is the work of everyone at the university. Contributions to SFU’s leadership role in sustainability are regularly made by faculty, staff, students, senior leadership, alumni, and our external community partners. No single office, unit, group, or person ‘owns’ the work of sustainability at SFU. This report offers insight into the types of contributions being made, and the level of dedication by SFU community members to activities that could be broadly listed under the umbrella of the UN SDGs.

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1 The UN SDGs are 17 global goals, formed of 169 targets, that are considered the blueprint for a better future. They were adopted by all UN Member States in 2015 as part of the 2030 Agenda for Sustainable Development. https://www.un.org/sustainabledevelopment/sustainable-development-goals/
24% REDUCTION IN OPERATIONAL GREENHOUSE GAS (GHG) EMISSIONS\(^2\) from 2007 baseline*

157 STUDENTS working on 20 SUSTAINABILITY-RELATED EXPERIENTIAL LEARNING PROJECTS, supported by the Sustainability Office

61% OPERATIONAL WASTE DIVERTED\(^3\) from landfill*

85 SUSTAINABLE SPACES\(^4\) CERTIFIED*

41% OF FACULTY ENGAGED in sustainability research

13 SFU NEWS HEADLINES addressing or celebrating sustainability at SFU

2,700 KG EDIBLE BUT UNSELLABLE PRODUCE REDISTRIBUTED to the SFU community by Embark Sustainability’s Food Rescue program*

AWARDED AASHE STARS\(^4\) GOLD rating: over 90 SFU reporters contributed to the submission, which earned SFU a 10% increase in points from the 2014 Gold rating

3 CAMPUS AS A LIVING LAB PARTNERSHIPS: social procurement, researching electric vehicle charging stations and climate change projections for SFU

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\(2\) Scope 1, 2 and limited scope 3 emissions, as defined by British Columbia’s Carbon Neutral Government program.

\(3\) Annual average waste estimated by weight from waste hauler for the SFU Burnaby campus, excluding residence and housing.

\(4\) SFU’s Sustainable Spaces program provides faculty and staff with a sustainability framework to certify Sustainable Offices, Labs, Dining and Events.

\(5\) Association for the Advancement of Sustainability in Higher Education (AASHE)’s Sustainability Tracking, Assessment and Rating System (STARS).

* This data was collected for the 2018 calendar year. Going forward, robust data collection and reporting, aligned to the targets in the Sustainability Strategic Plan (2020-2025), will allow for statistics that represent the academic year in question.
This section of the report shares sustainability highlights in the following categories:

**UNIVERSITY AS A LIVING LAB**
Students, faculty and staff who have mobilized to develop, and pilot sustainability solutions and innovations on campus.

**SUSTAINABILITY LEADERSHIP**
Students, faculty and staff who are leading opportunities for the SFU community to engage in sustainability and climate action.

**UNIVERSITY SERVICES INNOVATION**
Sustainability initiatives integrated in university operations, led by dedicated staff departments.
ARTIFICIAL INTELLIGENCE ROBOT INSTALLED TO REDUCE WASTE CONTAMINATION

Oscar, a robot that uses artificial intelligence to help people to recycle their waste correctly, was introduced at SFU’s Surrey campus in June 2019. Using visual processing, Oscar automatically identifies recycling and waste types in real-time. Through teaching users how to sustainably dispose of their waste in the four stream zero waste stations, it aims to improve the understanding and waste behaviours of the SFU community. SFU is the first university to launch the completed version of Oscar.

It is expected that Oscar will reduce the waste contamination rate from 70% to 20% at the implemented waste stream station, which will play an important role in SFU’s Zero Waste Initiative. The robot’s inventors – Vivek Vyas, a student in SFU’s School of Mechatronic Systems Engineering, and Hassan Murad, who graduated from the same department in 2016, developed and commercialized Oscar after co-founding their technology start-up Intuitive AI.

SFU WELCOMES THE FOOD SYSTEMS LAB

The Food Systems Lab works on innovative solutions to reduce food waste and support sustainable food systems. It is a women-led research lab working in conjunction with community and Indigenous special advisors. The Lab moved to SFU from the University of Toronto in November 2018, when its Director of Research and Co-Founder, Dr. Tammara Soma, joined SFU’s School of Resource and Environmental Management (REM). Key projects the lab is involved with include the Food Matters Action Kit, which provides an activities toolkit to help young people to reduce food waste. The Lab was awarded the prestigious Social Sciences and Humanities Research Council, New Frontiers Grant for a community food asset mapping, citizen science project. The project will provide community members with a platform to map the local spaces important to them from a food security perspective. This will support more community focused investment to ensure food systems’ resiliency. Dr. Soma teaches a REM course on Building Sustainable Food Systems and is collaborating with others on campus to offer opportunities for students to apply their knowledge, for example in the Embark Sustainability learning gardens.
STUDENTS LEAD ZERO WASTE FESTIVAL

A group of students from the Sustainability Peer Educator program organized a Zero Waste Festival at SFU’s Burnaby campus in March 2019. It was attended by more than 150 people. The festival featured booths from 18 zero waste vendors, non-profits and student projects. Innovative products showcased on the day included: jam made from bruised fruit (Refresh), compostable tableware made from leaves (Folium) and reusable bubble tea containers (Clear Tea Initiative). The students also set up interactive workshops, focused on raising awareness for the SFU community about how to live a zero waste lifestyle. Attendees were able to make their own toothpaste, non-toxic cleaner and grocery bags, upcycled from old t-shirts. The students received feedback that many of the festival attendees learned more about zero waste, connected with a new organization and had pledged to take actions to reduce their personal consumption and waste as a result.

SFU RESEARCH CONTRIBUTES TOWARDS A GREENER FUTURE WITH 3D PRINTED, SUSTAINABLE ELECTRONICS

Breakthrough research on sustainable 3D printing materials and green electronics is being led by Dr. Woo Soo Kim, a professor in the School of Mechatronic Systems Engineering. He is supported by his students in the SFU Additive Manufacturing Lab and is working in collaboration with the Swiss Federal Laboratories for Materials Science. The researchers are focused on substituting the conventional petroleum-derived plastics used in 3D printing with functional, renewable materials. They have successfully developed biodegradable 3D printing filaments, using responsibly sourced, wood-derived cellulose from Canada. Dr. Kim’s research was published in the journal of Advanced Electronic Materials in February 2019. In tandem, the researchers are also developing 3D printable green electronics, specifically wireless portable sensors. For example, they are prototyping sensors which can detect soil nutrients, for use in agriculture – working with both the SFU Learning Gardens and the UBC Agriculture department. These cellulose sensors will biodegrade when they reach their end-of-life, rather than contaminating the environment as hazardous e-waste.
SPOTLIGHT: STUDENT ROCHELLE PRASAD AND CAMP WE EMPOWER

Rochelle Prasad is a political science student at SFU, with a passion for working with young change makers and a powerful message: “age doesn’t matter when you’re making a difference”. Rochelle co-founded Camp We Empower, a non-profit organization dedicated to offering life education, on critical subjects including climate change, to students in grades 3-12. Camp We Empower received support from SFU’s Venture Connection and has now worked with over 17,000 young people across Canada, and 3,500 internationally. Its camps and workshops focus on the issues targeted by the UN SDGs. Rochelle presented Camp We Empower’s mission to the UN in summer 2019, and subsequently received its support and sponsorship for Camp We Empower’s Climate Change Challenge 2019. The Challenge will engage 1,600 young people in Metro Vancouver, giving them the opportunity to propose their own climate change action plans. The top selected projects will present their ideas to the City of Surrey at the end of a Week of Sustainability in December.

LIFELONG LEARNING DEMONSTRATES GOLD COMMITMENT TO A SUSTAINABLE OFFICE ENVIRONMENT

Sustainable Spaces is a certification program that recognizes and celebrates ecological, social and economic sustainability efforts in Dining, Events, Labs and Offices at SFU. The program provides a framework for the SFU community to take measurable actions to, for example, make energy savings, reduce waste and consider social responsibility.

The Lifelong Learning office, at SFU’s Vancouver campus, was certified as a Gold standard Sustainable Space in March 2019. Lifelong Learning delivers flexible programs and courses to learners of any age. The team has set a leading example for proactive staff collaboration on sustainability actions, in their office of over 60 people. They have gone above and beyond the Sustainable Office checklist to demonstrate their commitment to sustainability.

Examples of actions they have introduced include:
- Purchasing departmental sets of reusable containers;
- Offering blankets to avoid use of space heaters;
- Hanging reusable bags in the kitchen for staff to use when they need;
- Initiating their own soft plastics and e-waste recycling;
- Researching environmentally friendly cleaning products to make their own cleaning solution; and
- Setting up their own Sustainability Committee dedicated to advancing these sustainability initiatives in their office.

We strive to develop and model best practices in our operations, from minimizing our ecological footprint to maximizing the health, safety and wellbeing of staff.

Lifelong Learning Sustainability Committee
SUSTAINABILITY LEADERSHIP

SPOTLIGHT: DOCTOR KIRSTEN ZICKFELD, DEPARTMENT OF GEOGRAPHY

Professor Zickfeld is an internationally recognized climate scientist. Her research focuses on the effects of GHG emissions on climate, and she is the Director of SFU’s Climate Research Lab. Research in her lab investigates the reversibility of human-made climate change and carbon budgets consistent with the Paris Agreement temperature limits. Amongst her accolades, she was selected by the United Nations to serve as a Lead Author for the Intergovernmental Panel on Climate Change’s 2018 Special Report on Global Warming of 1.5 degrees and the Sixth Assessment Report, which is currently in preparation. Professor Zickfeld organized the Climate Future Series in collaboration with The Pacific Institute for Climate Solutions and the Faculty of Environment. This event featured talks by internationally renowned experts exploring the science, impacts and solutions associated with limiting global temperature rise to 1.5 degrees above pre-industrial levels, which drew a large audience. Professor Zickfeld received a President’s Award for Leadership in Sustainability in 2019 for her research and work at the university.

STUDENTS ‘MAP THE SYSTEM’ OF WILDFIRE CRISIS; WIN GLOBAL CASE COMPETITION

In June 2019 a team of undergraduate students won the global Map the System competition, held at Oxford University in the United Kingdom. The research competition challenges students to think differently about, and critically engage with social and environmental change. Team Inferno – SFU students Joanne Nellas, Devan Parmar, Michael Simoes and University of British Columbia alumna Vanessa Sun – mapped out the ecological, social and economic impacts of the wildfires in British Columbia, and identified gaps and opportunities to address this crisis. One gap identified was the lack of education on the benefits of prescribed burning, a fuel management technique. Tailoring wildfire education materials towards the varying cultures and environmental terrains across British Columbia is a lever of change to address this. Team Inferno plans to mobilize their research in an open access journal and are committed to taking their findings back to the communities most impacted. The students were supported by SFU faculty and staff members and their success is a testament to the institution’s commitment to igniting the next generation of changemakers. SFU has a strong track record at the competition: this was the second SFU win, and the third consecutive year an SFU team reached the global finals.
FACILITIES SERVICES ACHIEVES SIGNIFICANT ENERGY SAVINGS AND EMISSIONS REDUCTION

Energy saving and GHG emissions reduction actions are critical to SFU’s contribution towards a sustainable future. Facilities Services lead SFU’s Strategic Energy Management Plan which includes an energy reduction goal of 2% each year. SFU has been meeting this annual goal since the 2012 - 2013 academic year, consistently and cumulatively decreasing its energy use over that time by 13%, despite a growing population and physical footprint.

The 2018 - 2019 energy reduction was 3%, equivalent to powering SFU’s Education Building for one year and a half. This energy conservation effort saved the university $150,000 and reduced its GHG emissions by approximately 600 tonnes.

SDU has reduced its GHG emissions by 24% from its 2007 baseline, aligned to the provincial target of a 40% reduction in GHG emissions by 2030. This progress is captured annually in SFU’s Carbon Neutral Action Report. Examples of actions taken in 2018 include:
• Embedding green building principles into SFU’s requirements for the design and construction of new buildings;
• Targeting behaviour change through the Sustainable Spaces program; and
• Rolling out energy efficiency projects such as LED light replacements, boiler upgrades and more efficient building control systems.

NEW RESPONSIBLE INVESTMENT TARGET SET

SFU has committed to reducing its indirect, Scope 3 GHG emissions7 and using its investments to build a better world. In September 2018, SFU furthered its commitment to measure and reduce the carbon footprint of the university’s investment portfolio by 40% below the baseline measurement reported in 2016. The university pledged to achieve this reduction by 2030 to match Canada’s national climate commitment. As of March 2019, SFU had achieved a slightly greater than 50% reduction of the 2016 baseline carbon footprint. SFU will continue investing responsibly, governed by the Responsible Investment Committee and the United Nations’ Principles for Responsible Investment, to which SFU is a signatory.

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7 Scope 3 emissions are indirect emissions from business activities, for example: emissions from travel and commuting, emissions associated with waste disposal and the life cycle emissions of products and services used by the university.
MEETING, EVENT, AND CONFERENCE SERVICES EMBED SUSTAINABILITY PRINCIPLES INTO ALL EVENTS

Meeting, Event and Conference Services (MECS) has worked extensively to embed sustainability into the services they offer for meetings and events held at SFU’s three campuses. MECS collaborated with the Sustainability Office to incorporate elements of the SFU Sustainable Spaces certification program into its standard business practices. The actions taken mean that all MECS events receive Silver certification by default, and can work towards a higher Gold rating.

Some elements of this work include:
- Using the four stream zero waste stations;
- Providing re-usable or biodegradable kitchenware;
- Serving only fair trade coffee and tea;
- Promoting lower carbon travel options;
- Eliminating bottled water; and
- Offering local, in-season and vegetarian/vegan dining options.

In 2018, the Sustainable Events stream certified 77 events across all three campuses, resulting in approximately 17,575 participants engaged in the sustainability efforts adopted by MECS.
In a time of climate crisis and social challenges, it is important to recognize and build on achievements such as the 2018 - 2019 highlights in this report. They show students, faculty and staff members’ commitment to advancing issues of ecological, social and economic importance. The dedication and passion of the SFU community is critical to mobilizing, building and maintaining momentum for the movement for sustainability-related and climate action at the university. The highlights in this report demonstrate the variety of actions taking place in very different corners of SFU’s three campuses. The hope is that these examples of exceptional performance, impactful partnerships, innovative research and transformational initiatives will inspire further actions at SFU, to shape a sustainable future. As mentioned in the Overview, this is only a glimpse into the many ways that students, faculty and staff are making a difference. The Sustainability Office will endeavour to capture more progress from across the university in next year’s Annual Sustainability Report, and welcomes your feedback on this report.

For more information on any of the stories in this report, opportunities to get involved with sustainability at SFU or to share sustainability highlights with us, please contact the Sustainability Office through our website, email or social platforms:
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