

Social Ecological Economic Development Studies (SEEDS) Sustainability Program at the University of British Columbia

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Institution(s)

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Author(s)

Marko Pajalic, Engagement Specialist, UBC Sustainability Initiative, The University of British Columbia

Liska Richer, Manager, UBC SEEDS (Social Ecological Economic Development Studies) Program, Community Development, Campus & Community Planning, The University of British Columbia

Michael Peterson, Manager, Contracts and Campus Research Programs, Community Development, Campus & Community Planning, The University of British Columbia

Project Overview

Over the past 15 years, the SEEDS (Social Ecological Economic Development Studies) Sustainability Program has created partnerships between students, faculty and staff to enable hundreds of innovative and impactful sustainability projects at UBC. These student research projects engage the Campus as a Living Lab, and support the integration of academic and operational work on sustainability.

In 2014, projects contributed to the implementation of UBC's core operational plans, including Zero Waste Action Plan, Climate Action Plan, Electrical Infrastructure Plan, and the operational sustainability frameworks. The SEEDS Program facilitates collaborations across units on campus, develops career capital through experiential learning, and produces measurable results for campus operations.

Background

Universities play a central role in generating and disseminating knowledge and preparing future generations of leaders to address critical issues facing our society. Aligned with this role, and building on nearly two decades of sustainability leadership, UBC works to transform its campuses into societal test-beds for sustainability, where critical issues are explored and addressed. In this way, the University's physical plant becomes a testing ground in which staff, students, faculty members, researchers and partners test, study, teach, apply and share lessons learned, technologies created and policies developed. The SEEDS Program is Western Canada's first academic operational program to integrate students' energy and enthusiasm for sustainability with faculty members' research experience, and staff members' commitment and expertise to advance sustainability on campus and promote the use of the campus as a living laboratory.

Several initiatives shaped UBC's approach to date, including the signing of the Talloires Declaration – a commitment that UBC, among many other universities, made to sustainability as the foundation for teaching, research and campus operations. UBC's strategic plan, Place and Promise, guides UBC's efforts to “create an exceptional learning environment that fosters global citizenship, advance a civil and sustainable society, and support outstanding research to serve the people of British Columbia, Canada and the world.” The number of SEEDS Projects is reported as a metric under UBC's Strategic Plan Goal 2: “Living Laboratory: Make UBC a living laboratory in environmental and social sustainability by integrating research, learning, operations and industrial and community partners”.

In 2009, the Sustainability Academic Strategy (SAS) was created to “serve as a framework to guide the UBC community in ongoing planning and decision-making for sustainability”. The SEEDS Program was formally included and recognized in SAS as an exemplary program that promotes the use of UBC's campuses as a living laboratory. In 2010, the UBC Sustainability Initiative (USI) was established and commenced work to implement the SAS. Under the USI umbrella, many UBC offices, committees and groups work collaboratively under two crosscutting themes: campus as a living

laboratory and the University as an agent of change. In 2014, UBC updated the SAS through the 20-year Sustainability Strategy, providing a long-term strategic direction for next-generation sustainability at UBC's Vancouver campus.

The SEEDS Program continues to play a central role in advancing the renewed commitments to sustainability and exploring how we can go beyond just reduction of harm to creating net-positive benefits in terms of both human and environmental wellbeing.

Project Goals

The SEEDS Sustainability Program is embedded in campus planning, and directly supports the University's efforts to advance a number of strategies and operational plans, as well as support provincial and international commitments. Specifically, the Program seeks to:

- 1 Achieve university and unit-level goals in environmental and social sustainability.
- 2 Develop strategies for achieving the University's environmental and social sustainability goals in 15 thematic areas, including: climate, energy, water, waste, land, food, transportation, community, finance, buildings, materials, biodiversity, procurement, health, and wellbeing
- 3 Integrate operational and academic efforts in sustainability through projects and partnerships, enriching the student learning experience through providing opportunities for applied learning in sustainability.

Project Implementation

The SEEDS Program began by introducing the program to senior staff members interested in making changes in their areas of operation that would contribute to campus sustainability. The program's first success came by linking the university landscape architect with a graduate student in the School of Community and Regional Planning to design a campus trail to generate appreciation of place, history and landscape. From a single faculty and operational unit, SEEDS projects have now spread across campus in most areas of operations. Campus staff, students and faculty work together on projects that address diverse campus issues in operations ranging from climate change, food security, water management, urban agriculture, energy and transportation to waste management practices and so much more.

The SEEDS Program employs a variety of approaches and methods to enable collaborative, applied learning. The program builds upon the pedagogical foundations of: Participatory Action Research, Community-Based Action Research, Community Service-Learning, Experiential Education, Case Study, Best Practices and Volunteer Management in all stages of the process (i.e. planning, establishing, managing, evaluating).

SEEDS projects can be classified along three broad typologies: projects taken on as a whole class or part of a class, individual projects, and group projects. When completed, the instructor evaluates SEEDS projects. Students submit a research report and deliver a presentation to the operational staff clients. In other cases, students develop and

design a community or art installation, technology or application build a prototype or product, or create a conceptual design. Written reports are uploaded online as open-access resources in the SEEDS Library. The library serves as a rich database of research reports allowing the university to continuously build on sustainability learning and move incrementally towards a more sustainable campus.

Timeline

The SEEDS Program was initiated in 2000, as a response to UBC's Sustainability Policy #5, which called for a "Greening the Campus" initiative. Building on the theme of "Campus as a Living laboratory (CLL)", SEEDS helps unite campus operations and academics to find collaborative solutions to real-life sustainability issues on campus. In 2009, the Sustainability Academic Strategy (SAS) was created to "serve as a framework to guide the UBC community in ongoing planning and decision-making for sustainability". SEEDS was formally included and recognized in SAS as an exemplary program that promotes the use of UBC's campuses as a living laboratory. In 2012, the SEEDS Program was evaluated externally for the first time since its launch in 2000, and based on the evaluation findings and recommendations, a strategic plan was devised to provide overall strategic direction to the program for the next three years. As part of the Strategic Program Plan, a program mission and goals were developed.

Individual SEEDS projects are typically completed in one to two semesters. Most of the projects are iterative and build-on previous projects.

Financing

The program is budget-funded and contributes to the learning, teaching and research mission of the university and tangibly supports operational efficiencies. Some projects are funded through a student union-supported fund, as well as other graduate research funds.

A program manager oversees on average 100 projects per year, involving over 800 students, faculty, and staff. The position is responsible for achieving the above objectives through Project Management, Program Development, Administration, Communication and Evaluation. Limited student staff helps support the SEEDS Program.

Project Results

"I have worked at UBC for many years; and for most of that time the academic mission and the running of the university were separate. SEEDS has helped to break that barrier down to enable our students to apply the sustainability and other principles they're learning in courses." – Faculty Member

"SEEDS project results provided valuable input to on-going discussions and resulted in more careful consideration and an improved ability to consider factors that were not originally contemplated in the decision making process" - Operational Staff Member
The SEEDS Program plays an important roles in supporting university's efforts to

reduce energy use and GHG emissions, conserve water, create a healthier, zero-waste community and a model of a sustainable food system. The outcomes of the majority of SEEDS projects get implemented or influence decision making around ecological, social and economic sustainability on campus.

The second significant outcome is the knowledge base contained in the online SEEDS library. The library hosts over a thousand reports that provide an institutional resource, collective memory, and enable iterative research. These resources can also benefit other organizations as a potential source of recommended practices and processes developed through applied research.

The SEEDS Sustainability Program received international recognition and has subsequently been replicated across several universities in North America and Europe. Few universities in North America have similar programs, and SEEDS is certainly the largest and most comprehensive.

In 2013/2014, the SEEDS Program engaged approximately 900 students, staff, and faculty to work collaboratively on 86 innovative UBC sustainability projects integrating operations and academics. All UBC faculties and colleges, and all staff units can participate in the SEEDS Program. To date, SEEDS projects have been integrated into 12 of 14 UBC faculties and colleges, and have involved approximately 30 operational departments such as Building Operations and Student Housing and Hospitality Services, resulting in over 1,000 research reports available for free in the online SEEDS Sustainability Research Library.

Project Highlights

Some of the highlights from recent years include projects that contributed to the enhancement of the public realm, strengthening a sense of place and community and closer connections with nature. These included several innovative and interactive art installations, such as place-based storytelling, birdhouses with stories of UBC-housed student refugees, a mechanical tree that demonstrates the fragility of nature, and suspended garden platforms. In 2014, student projects led to the development of a rooftop garden on the new student union building, the AMS Student Nest, providing a public space that helps reconnect people with nature.

SEEDS projects around food and sustainability led to the development of a Food Preservation Workshop Series that will help supply the student union building year round with produce extending food seasonality. Another first for the program was a farm-to-healthcare project between UBC's campus farm, food providers, hospital and coastal health authority. With the rising popularity of food trucks on campus, students researched and designed a concept of an electrical system for the most sustainable food truck in Canada.

Other projects included the creation of sustainable procurement and waste guidelines for the Special Olympics Canada 2014 Summer Games held on campus, development

of a first closed loop composter, the revision of targets that led to a new iteration of the Alma Mater Society (AMS) Lighter Footprint Strategy, and a business proposal to increase the number of women working in trades at UBC.

Overall, in 2014, 194 student reports related to campus operational sustainability topics such as building operations, waste, water, transportation, energy, land, food, climate, community, and finance were generated.

Additional project highlights include a biodiversity related baseline study of bird collision rates at UBC, with a strong implementation potential to improve eco-health and inform Green Building Plan and Guidelines, and the design and build of a first campus waste scale that can classify waste collection into organic, landfill and recycling waste streams in real time.

Benefits for Students

- Earn course credit for a sustainability project
- Apply research skills in a real-world project
- Gain professional work experience by working with operational staff
- Obtain research publications

Benefits for Faculty

- Provide students hands-on experience with applied sustainability projects
- Integrate real-world sustainability challenges into the classroom
- Connect curriculum to sustainability practice and innovations on campus

Benefits for Staff

- Achieve departmental sustainability goals through partnerships with students and faculty
- Gain access to current academic research and resources
- Collaborate with other departments to solve shared sustainability challenges
- Opportunities to mentor students and contribute to community
- Leverage the SEEDS network and access UBC's best practices on sustainability and operations

Benefits for the University and the Community

- The SEEDS Sustainability Library (largest campus sustainability library), a publicly accessible and a rich source of sustainability research and potential solutions for UBC and other academic institutions
- Inspirational and impactful program as a model for other organizations
- Long-lasting partnerships that build community and develop campus culture of sustainability
- Improved sustainability of campus
- Financial savings in avoided costs

Program evaluation highlights

- 100% of faculty rated their overall experience with SEEDS as “excellent” or “good”.
- 96% of faculty either agree or strongly agree that SEEDS prepares students for professional work environment. □
- 81% of staff indicated that SEEDS supports efforts to increase sustainability in unit

operations.

- 78% of staff agreed that SEEDS provided valuable info/data that would assist them in their area of operations.

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Project Highlight Video:

<http://bit.ly/SEEDSvideo>

Lessons Learned

The key success factors in all projects are that they:

- 1 Are achievable in terms of student time and expertise;
- 2 Have staff and faculty commitment to the project;
- 3 Are based on mutual respect across the cultural divide between faculty and staff;
- 4 Have good quality control and organization including a clear agreement on the scope of the work and a product that is something that can be implemented or affect decision-making.

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Additionally, the SEEDS Program success depends on:

1) Proactive Stakeholder Relations and Engagement, including:

- Positive relationships amongst multiple stakeholders, who otherwise may not find themselves at the same table;
- Institutional and stakeholder support of the program, gained through ensuring alignment with plans and integration with reporting and signalling the deep commitment to sustainability;
- Inclusion of relevant community stakeholders' in the early project planning phases in developing the research questions;
- Disseminating research findings and recommendations in partnership with the community that the research affects.

2) Robust Project Management and Communication, including:

- A realistic project proposal that balances aspirations and feasibility, developed through the project proposal and kick-off meetings and early sign-off from the operational client;
- Upfront definition of roles and a clear project charter to mitigate conflict and scope creep;
- An understanding that perceived challenges translate to opportunities for further research;
- Team check-ins, and as needed group meetings, to ensure timely and clear communication

3) Meaningful Acknowledgement and Evaluation, including:

- Recognition of student, faculty, staff and community participants is essential to demonstrate appreciation, and build a community of champions;
- Follow-up and evaluation of the project one month following completion, and the program overall, helps ensure validity and quality and drive implementation.