

Combining forces

Fostering sustainability collaboration between the city of Vancouver and the University of British Columbia

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Abstract

Purpose – This paper describes the sustainability partnership between the City of Vancouver and the University of British Columbia (UBC) and, in particular, the co-curricular Greenest City Scholars graduate student internship program, which has been developed by the two organizations. Through the program, UBC graduate students work on projects at the City that help to advance sustainability targets. The paper aims to explore the successes, challenges and lessons learned from the program.

Design/methodology/approach – This case study uses literature and document review, observations, program participant evaluation surveys and project impact survey feedback.

Findings – The Greenest City Scholars program model has contributed to the sustainability goals at UBC and the City of Vancouver and has supported the partnership between the two organizations. The program has grown over its five-year history and is considered to be a central part of the partnership. Breadth of student participants from across the university and high participation from City departments have been achieved. The model is now being adapted to be delivered within other partnerships.

Practical implications – The experiences presented in this case study can help other higher education institutions understand how a co-curricular graduate student work experience program could help to bolster their own sustainability partnerships.

Originality/value – This paper makes a contribution by providing insight into the use of a graduate student program to advance the goals of a university–community sustainability partnership.

Keywords Graduate students, Sustainability, Real-world learning, Co-curricular, University-city partnerships

Paper type Case study



Introduction

Universities around the world are engaging with partners on sustainability, connecting the knowledge and innovation capacity of higher education with the policy and implementation challenges of partner organizations. Partnerships between universities, government and industry are a popular element of international and national

declarations about sustainability in higher education (Wright, 2004). In fact, it has been argued that universities have an obligation to form such community partnerships (Cortese, 2003). In their analysis of 70 university partnerships in Europe, Asia and North America for advancing sustainability, Trencher *et al.* (2014) note that most of such relationships occur at the town/city level, with the local/neighborhood scale the next most frequent. Partnerships between universities and communities take many forms, including “internships, academic service projects, applied research, organization and community capacity building” (Clifford and Petrescu, 2012, p. 78). Such partnerships can advance sustainability goals for both organizations (Bilodeau *et al.*, 2014).

This paper examines the sustainability partnership between the University of British Columbia (UBC) and the City of Vancouver, which is formally organized through a Memorandum of Understanding. Consistent with the finding that multiple practices for working together are often applied simultaneously within such partnerships (Barker, 2004), the MOU between UBC and Vancouver outlines a number of potential avenues for collaboration. We focus on a core component of the partnership, a graduate student work experience called the Greenest City Scholars program which was launched in 2010. We describe and evaluate the key features of this program, including the roots of its inception, its structure, and the shared management and responsibility for the program between the two partners. We then describe the growth of the program over the first five years and explore the reach of the program across academic disciplines and City of Vancouver departments. We end with an assessment of program growth and success and discuss lessons learned that can inform other institutions of higher education wishing to establish similar partnerships and programs with their neighboring communities and cities. Sustainability-focused student programs such as this one can make important contributions to student learning and to university partnerships, and can contribute to social transformation.

Partners for sustainability

UBC is a large research university. In 2014, 51,441 students were enrolled, and 3,270 faculty employed at UBC. UBC’s official strategic plan, Place and Promise, expresses a high-level commitment to sustainability, and it is identified as one of six priority areas intended to support the university’s three highest-order priorities: student learning, research excellence and community engagement [University of British Columbia (UBC), 2009a, 2009b]. In 2009, a university-wide consultation and planning process led to the development of the mid-level strategic plan for sustainability, the Sustainability Academic Strategy [University of British Columbia (UBC), 2009a, 2009b]. This commitment and vision for sustainability was most recently renewed through adoption of a 20-Year Sustainability Strategy following a cross university consultation in 2014 [University of British Columbia (UBC), 2014].

The 2009 Sustainability Academic Strategy included implementation recommendations which led to the creation of the UBC Sustainability Initiative, an organizational structure designed to help integrate the operational sustainability activities of the university with its academic mission. Sustainability is an active area of exploration across the university, with 21.4 per cent of faculty identified as having sustainability research interests (<http://sustain.ubc.ca/research/find-researcher>) and courses with sustainability content in 65 per cent of departments (<http://sustain.ubc.ca/courses-teaching/courses>). Across the university, administrative units pursue sustainability in their operations[1] and a number of UBC’s mid-level strategic and

operational plans include goals which are directly related to sustainability (Cayuela *et al.*, 2013; Robinson *et al.*, 2013)[2].

The City of Vancouver has set an aspirational goal to become the greenest city in the world by 2020. The City's Greenest City 2020 Action Plan (GCAP), which was formally adopted in July 2011, was developed in partnership with the community and a blue ribbon panel of sustainability experts. It aims to prepare Vancouver for the potential impacts of climate change, while building a vibrant community, a thriving economy, and a healthier city. GCAP comprises ten smaller plans, each with a long-term goal to 2050 and medium-term targets to 2020. The ten goals are: green economy; climate leadership; green buildings; green transportation; zero waste; access to nature; lighter footprint; clean water; clean air; local food. Together, these goals address three overarching areas of focus: carbon, waste, and ecosystems (City of Vancouver, 2010).

Accountability for implementation of the GCAP is embedded across the City's organizational structure, with oversight provided by the Greenest City Steering Committee and the City Manager's Office. The Sustainability Group leads some GCAP goal areas while providing support to other goal owners, monitors progress on the overall plan, and coordinates the broader vision.

The City of Vancouver and University of British Columbia (UBC) (2010) created a Memorandum of Understanding and partnership through which the two organizations could advance their sustainability goals. The MOU stated as its purpose that:

This MOU will establish a non-legally binding framework and a set of principles for an enhanced approach for coordination and collaboration between the parties to support our shared interests relative to UBC's sustainability goals and actions and Vancouver's efforts on the Greenest City Action plan. The combined influence and expertise of the parties are better applied together to support our common goals (City of Vancouver and University of British Columbia, 2010, p. 2).

The MOU has a duration of ten years (2010-2020). Outlined in the MOU are a set of shared objectives, guiding principles, and administration and implementation guidelines. Also included is a list of key areas of focus: teaching and learning; applied research; community engagement; campus and city as a living laboratory; and hosting the world/communications. Suggested collaborative activities are included under each area of focus. The Greenest City Scholars program has its origins in one of the activities proposed under the "Teaching and Learning" area of the MOU: the "Green City Action Team/Mayor's Fellows Program" (City of Vancouver and University of British Columbia, 2010, p. 3).

The Greenest City Scholars program

The idea of pairing UBC graduate students with City of Vancouver sustainability goals emerged in the early days of the MOU based on a suggestion by Sadhu Johnson, the Deputy City Manager, who had implemented a similar program while at the City of Chicago. The City of Vancouver believed that UBC graduate students could provide research capacity that would help their staff to advance the challenging sustainability agenda adopted by the City in the Greenest City Action Plan. UBC recognized that its students would gain valuable professional experience while applying their skills to real-world sustainability questions. The program also provided an opportunity for UBC to exercise its commitment to work as an agent of change for sustainability in the community and to integrate academic activities with operational sustainability, key

principles expressed by the university in its official sustainability planning [University of British Columbia (UBC), 2009a, 2009b]. These desired practical program outcomes are consistent with what Barnes and Phillips note can be achieved through higher education partnerships, provided they are synergistic and focused on work that is of value to the community (Barnes and Phillips, 2000, p. 184).

Although not an intentional goal at the time of the program's inception, we now recognize that participation in the program, in concert with the students' academic programs, also helps students to acquire important sustainability learning outcomes, in particular an ability to apply the sustainability knowledge learned in their own program to real world problems, and the opportunity to develop as agents of change. These outcomes are consistent with UBC's student sustainability attributes which were developed as a guiding framework to identify desired outcomes for students graduating from sustainability focused programs at UBC (Marcus *et al.*, 2015) and have also been identified as sustainability learning outcomes within other institutions. Writing about such outcomes, Rowe and Johnston note that there are common characteristics across different settings and that:

The convergence among these learning outcomes includes knowledge about ecosystems, basic understandings of social scientific analyses of human cultures, systems thinking, inter- and intrapersonal skills, and the development of change agent skills, strategies and self-concepts (Rowe and Johnston, 2013, p. 57).

Participation in the Greenest City Scholars program may help UBC students to broaden their sustainability education. Scholars are recruited to the program from a diverse range of disciplines and graduate programs, not all of which provide a comprehensive grounding in sustainability.

Program structure and management

What developed from these ideas was the Greenest City Scholars program, through which UBC graduate students are employed in sustainability-focused projects at the City of Vancouver. Students selected as "Scholars" are hired by UBC as student assistants to work for 250 hours over the summer, with at least half of their working time spent on site at the City. Each student project supports one of the ten Greenest City Action Plan goals and is supervised by a City of Vancouver staff person, the "Mentor". The program is co-curricular and open to graduate students in any academic discipline.

Management of the Greenest City Scholars program is shared between the City of Vancouver's Sustainability Group and the UBC Sustainability Initiative's Teaching, Learning and Research Office. Both the Assistant Director, Sustainability Group (City) and the Associate Director, Teaching Learning and Research (UBC) provide oversight to strategic direction and are responsible for their respective organizational budgets which fund the program. Administrative staff at the City (Sustainability Specialist) and UBC (Program Manager) work closely to plan and execute the program each year. Senior level support and sponsorship has been present throughout the program and partnership history. The original partnership Memorandum of Understanding was signed by the Mayor of Vancouver and the President of UBC and on an ongoing basis the Deputy City Manager for Vancouver together with the Associate Provost for Sustainability at UBC provide executive sponsorship.

Over the inaugural five years of the program, staff at both organizations have developed effective program management practices. The annual program timeline and key program activities are detailed in [Table I](#).

Program timeline	Key program activities and description
November-January	<p><i>Project selection</i></p> <p>Call for proposals to City of Vancouver staff (two-three months' notice) Proposed projects are reviewed by a committee of City of Vancouver and UBC staff Sustainability Group (City) works with Mentors to further refine project descriptions as needed Final list of approved projects sent to UBC for the recruitment process</p>
February-April	<p><i>Recruitment</i></p> <p>UBC places call to all graduate students announcing the available projects and deadlines. UBC circulates details to key departmental staff and UBC faculty members with sustainability interests who are able to distribute program notices to potentially interested graduate students UBC reviews all applications, shortlists the students and sends application packages from the top candidates for each position to mentors. Mentors interview and select the scholar UBC undertake the administrative onboarding of the scholars</p>
Early May-mid August	<p><i>Summer internship period</i></p> <p>Scholars work 250 hours under the supervision of their City of Vancouver Mentor</p> <p><i>Orientation (early May)</i></p> <p>A day-long student orientation session held at City Hall to launch the program Scholars are welcomed by senior leadership from the City of Vancouver, meet one another, their Mentors and learn about the different projects UBC and City staff brief the students on professional and workplace expectations, and former program participants share their advice about how to make the most of the program</p> <p><i>Mid Project check-in (late June)</i></p> <p>Scholars meet as group and present to one another about their project progress, including any challenges experienced Scholars then meet individually with their Mentor and Sustainability Group representatives to present on the project and to determine the best approach for the remainder of the program time</p> <p><i>Evaluation (mid-August)</i></p> <p>The City of Vancouver circulates an evaluation survey to both Scholars and their Mentors</p>
September	<p><i>Wrap up event</i></p> <p>Scholars present on their projects during an open event at UBC directed to students and UBC operational policy-makers Prospective applicants have an opportunity to hear from students who have been in the program and to ask them questions about their experience</p>

Table I.
Annual program
timeline and
activities

Through the iterative refinement of program management each year, a number of practices have emerged as key for success from both university and city perspectives. First, a program lead within the City (Sustainability Specialist) is crucial to validate and strengthen the profile of the program within the City and facilitates a high degree of access and communication with the City staff who scope out and propose projects. This Specialist also provides ongoing support and advice to the project Mentors, trouble-shooting any issues that arise. Second, and equally significant is the management of the student recruitment process provided by UBC. The minimal effort required by City staff in finding the candidates has been noted as one of reasons for the popularity of the program.

Third, students report that the cohort structure of the program contributes greatly to their perceived value of the overall experience. A key program element that fosters a sense of community among the students is the orientation event (Table I); it builds excitement around the program, helps to communicate to all participants the executive commitment of both organizations to the Greenest City Scholars, and familiarizes the students with the full range of Scholar projects. The cohort also comes together at other times for field trips to city facilities and professional development training, and students are encouraged to self-organize for check-ins throughout the term. Others have also found that a cohort model is important because of the community it builds and the network that is created. (Schriberg *et al.*, 2013).

Program support and growth

Over the course of this five-year partnership, the Greenest City Scholars program has experienced considerable growth in organizational interest from both the City of Vancouver and UBC. Each consecutive year has brought increases in the number of project proposals, program funding, the number of students applying to and hired into the program, and senior leadership attention.

In the initial year of the program, few project proposals were received by City staff responsible for the City Greenest City Action Plan goals, and most of the projects were scoped by the City's Sustainability Group. However, following the success of the first intake, and as knowledge of and interest in the program grew across the numerous City departments, the number of project proposals received from City staff has steadily increased. Interview data confirm that with each successive year, city staff have become increasingly convinced that the program can build crucial internal capacity for emerging issues that might not yet be understood, prioritized or resourced; the graduate students temporarily expand staffing and also can bring specialized expertise needed to address a particular issue.

Funding for the program is another area where we can identify strengthened support over time. At the program's inception, UBC committed \$50,000 annually to support a cohort of ten Scholars each summer, in exchange for free wood waste from the City of Vancouver to fuel UBC's Bioenergy Research and Development Facility (Johnson *et al.*, 2013, p. 63)[3]. As demand for the program grew within the City and UBC was unable to increase its financial commitments, the City's Sustainability Group requested and secured a funding-match commitment from the City of Vancouver (2014a, 2014b). This resulted in a decision to cost share each project between UBC and the City and the number of Scholar projects grew to 15 in summer 2014, with 20 projects forecasted to run in summer 2015. The high value that City staff place on the opportunity to undertake a

Greenest City Scholar project is also demonstrated by the willingness of the City to fully fund some projects beyond those cost-shared between UBC and the City.

Student interest in the program has also grown over time. There was an almost threefold increase in the number of student applicants from 2010 (59 applications) to 2015 (151 applications). This growth likely reflects both an increased communications effort by the UBC Sustainability Initiative to reach more students and growing awareness through informal student networks about the value of the experience.

The program has also garnered increasing attention from senior leadership at the City, as evidenced by the decision to offer Scholars the opportunity to present their projects to the City of Vancouver “Corporate Management Team” (CMT) the past three summers (2012, 2013, 2014). The CMT is chaired by the City Manager and includes the leaders of the major municipal departments, as well as associated agencies such as the Fire Department and the Parks Board. Time at the CMT is valuable because of the considerable responsibilities of the group and the opportunity for the Greenest City Scholars program to make it to the agenda for three years in a row indicates an important level of interest from the City’s executive team.

Program breadth

As of the end of the 2014 summer cohort, 59 students from 26 academic programs have participated in 59 projects on topics that address a diverse set of sustainability questions. Starting in 2012, full project reports were collected and are available online through the Greenest City Scholars project library (<http://sustain.ubc.ca/greenest-city-scholars-projects-library>).

Initially, an attempt was made to create one internship for each of the ten Greenest City Action Plan goals, but, over time, the priority has broadened, and a wider array of criteria are considered. This has resulted in an uneven distribution of projects among the goal areas but has arguably created the opportunity for greater impact of the work. In vetting project proposals, the City and UBC assess them on criteria that include:

- *Potential for impact:* Will the project “move the dial” on sustainability?
- *Support for student mentoring:* Does the department have sufficient capacity to support the student working in the project?
- *Ability to recruit a student:* Does UBC have programs and potential student recruits whose skills will match the needs of the project?
- *Project scope and size:* Can the work be completed during the 250 hours available during the work term? Are the deliverables achievable for a graduate student?
- *Potential for positive student outcomes:* Will the student have an opportunity to apply their degree knowledge and gain professional skills?
- *Will it create new capacity:* Would the project be undertaken anyway, or will the Greenest City Scholars program enable work that would not otherwise be possible by the department?

As Table II illustrates, many topics have been explored through the Scholar projects, and a broad range of City of Vancouver departments have participated in the program. A goal for the program is to continue to expand participation into more of UBC’s 75 academic programs and more City of Vancouver departments.

Greenest city goal area and no. of projects	Project topics	City departments managing projects	UBC student degree programs
Green Economy Six projects	Green employers and jobs; procurement; innovation and technology development	Sustainability; Vancouver economic commission	MBA (Strategic Management); MA Economics; Juris Doctor in Law; M. Landscape Architecture; MSc Human Nutrition; MASC; Faculty of Civil Engineering (Project and Construction Management)
Climate leadership Ten projects	Electric vehicles; municipal (including police and fire) fleet vehicles; district energy; anaerobic digestion facilities; building cooling; climate change adaptation	Engineering; sustainability; Vancouver fire and rescue service; Vancouver police department	PhD (Engineering); PhD Resource Management and Environmental Studies; MSc Planning; MSc Chemical & Biological Engineering; Masters Planning + Asian Pacific Policy Studies; Masters Planning; MA Planning; MEng in Clean Energy Engineering; MSc Transportation Planning
Green buildings Four projects	Carbon neutral construction; green roads; heritage buildings; energy benchmarking	Engineering; planning; sustainability	M. Architecture; Masters in Civil Engineering (Structural); MEng. In Clean Energy Engineering; PhD Mechanical Engineering
Green transport Nine projects	Transportation planning; pedestrian spaces; transit; wayfinding; parking; bike mobility	Engineering	MBA; Masters Planning; Master of Public Health; MA, Planning; MSc. Planning
Zero waste Nine projects	Waste reduction; waste franchising; organic solid waste; food scraps; outdoor events; re-use economy	Engineering; film and special events; sustainability	MBA; Masters Resource Management and Environmental Studies; MSc Chemical & Biological Engineering; MSc Occupational & Environmental Hygiene; MA Planning; MA Linguistics, Anthropology; MSc Zoology; MA Asia Pacific Policy Studies
Access to nature Six projects	Urban canopy; landscape design and songbirds; landscape design; outdoor education	Engineering; park board	M. Landscape Architecture; MSc Planning; PhD Museum Anthropology; MA Planning
Lighter footprint Five projects	Ecological footprint; neighborhood scale measurement; multiculturalism; infrastructure planning and project management	Corporate communications; sustainability	PhD Planning; M Architecture; Masters Planning; MSc Planning; M. Engineering in Civil Engineering

Table II.
Project goals, topics, managing departments, student programs

Program evaluation and impact of projects

Following the completion of the summer internships in August each year, the City of Vancouver circulates an evaluation survey to both Scholars and their Mentors to capture feedback and identify what is working and what could be improved. Each fall the survey results are reviewed by UBC and City of Vancouver and informs planning for the next year.

Overall, the Scholars and Mentors have a high level of satisfaction with the program. Over the past three years, 100 per cent of students (33 of 33) have replied “yes” when asked, “Do you feel you contributed to your Greenest City Goal?” When Mentors were asked to rate the value of the program for them, they also responded very positively, with 34 of 35 indicating a good or high value.

Former Scholars have found their time working with the City very rewarding, enabling them to “contribute to change within the City” and utilize skills “learnt through schooling and apply them to a real world problem”. Scholars have appreciated the cohort experience in that they feel “part of a team of people all working on different projects, but towards similar goals” (City of Vancouver, 2014a, 2014b). Past Mentors have indicated that their scholars’ skills and backgrounds have, for the majority of projects, been a great fit for their research topic needs. When asked about what they find most beneficial about working with students, Mentors have commended Scholars for bringing “[...] new ideas, fresh thinking, enthusiasm, commitment [...]” to the City’s work and that the Scholars help the City make “in-depth progress” on projects that would likely not have been accomplished otherwise (City of Vancouver, 2014a, 2014b).

Another indication of satisfaction is the number of Greenest City Scholar alumni gaining employment with the City following their internship. To date, 10 out of 59 former scholars have gone on to undertake full-time positions at the City of Vancouver, and a number of other Scholars have been hired by the City directly into short-term contracts following the completion of their work term.

Through a separate process, project Mentors are asked to describe the impact the Scholar’s work had relative to the original goal of the project. This feedback is collected by e-mail one year after project completion. Table III shows the results reported for each of the projects undertaken over a four-year period beginning 2010.

A deeper look at some of the work performed through the projects provides further insight into the program and its impact on sustainability in the City of Vancouver. The diversity of results from student projects can be seen in these examples:

Type of project impact	No. of projects
Research informed development of a program/policy that was approved or undertaken	17
Project eliminated an unnecessary policy or program	2
Project catalyzed staff interest and engagement in an initiative that is now actively being pursued	10
Project contributed in some other way	14
Project did not contribute in a significant way	4

Table III.
Distribution of
project impacts 2010-
2013

Notes: Some projects contributed in more than one way; 9/10 Mentors reported in 2010, 8/10 mentors in 2011, 10/10 in 2012 and 11/11 in 2013. 2014 data are not yet available

- In 2010, a Scholar successfully secured funding from the Federation of Canadian Municipalities, BC Hydro and the Province of BC for electric vehicle charging stations. His research informed reduction pathways that were included in the original Greenest City Action Plan, all of which have been pursued.
- A 2011, Scholar helped to shape a monitoring program for VIVA Vancouver, a program that transforms road spaces into vibrant pedestrian spaces.
- In 2012, a Scholar researched municipal programs that encourage tree planting on private property. Based on best practices from this work, the Park Board scoped the Tree Keepers Program, which has since been developed and delivered by Tree City and the Environmental Youth Alliance. Tree Keepers is financially supported by the Park Board and a Greenest City Grant. The program trains and mentors citizen foresters and hosts annual tree planting events.
- A 2013, Scholar project prioritized local food work and investments at Vancouver community centers. This work allowed Parks to include kitchen upgrades in the capital plan to allow for better learning/teaching.

Successes and challenges

Across both organizations, the Greenest City Scholars program is considered successful, and its reputation is strong. As discussed above, this support is evident through the continued funding commitment made by UBC and the more recent matching investment by the City of Vancouver, through the increased number of projects proposed by City staff and the increased number of UBC graduate students applying to the positions, by the number of students hired by the City following their projects, and by the positive responses to the annual program evaluation survey. The consistent response from students that the positions have provided them with an opportunity to apply their degree knowledge to real-world sustainability problems is an important finding, which indicates progress toward acquisition of sustainability learning outcomes. Furthermore, as illustrated in [Table III](#), the students are making an impact on sustainability at the City as the projects result in real contributions to policy-making and program development.

It is also important to note some of the challenges involved in the program. First, among these is the amount of organizational resources – both financial and human – that it requires. In the context of scarce public sector funding, the need to fund the student projects is a significant commitment, and the case for the money must be made each year through the budgeting processes at both organizations.

The program management practices described earlier in the paper also demand a high level of staff effort and, at peak times, during the year the program demands almost full-time effort from the UBC Program Manager, as well as from the City of Vancouver Sustainability Specialist. In addition to this, City of Vancouver project Mentors invest time to work directly with the students. In light of the heavy resource requirement of the program, it continues to be crucial to be able to easily demonstrate the program's value to decision-makers at both UBC and the City. The ongoing work by program managers on program evaluation, project impact analysis and communication of the program, and its results have proven to be important strategies.

An area of challenge for the program has been student recruitment. At times, it has been difficult to find students who are a good match for each project. This has required some more active recruitment strategies on the part of UBC, including direct appeals to

faculty members with research interests connected to the projects to help locate student candidates and extra communications with students to encourage them to apply for positions that might not have been their first choice.

A goal at UBC is to find a way to connect the program to more students. Even with an expanded cohort of students that has been possible as the program grows, it still only reaches a small number of UBC's almost 10,000 graduate students, and, as [Table II](#) illustrates, those who do participate are not evenly distributed amongst disciplines. The program's impact on campus is also limited because it is sometimes necessary to hire students at the end of their graduate programs, which means that the value and learning from a student's experience are not shared with others on campus.

Lessons learned

We believe several key factors have led to the success of the Greenest City Scholars program and have enabled us to create a program that suits the needs of both UBC and the City of Vancouver, despite the challenges noted above. We suggest that three of the following would be particularly important for other institutions interested in developing such a program:

- (1) *Staff support*: Having a key point person on each side of the relationship provides for strong coordination between partners and creates an easily identifiable contact person and point of entry for both students and mentors. Coordination support has been found to be one of the important drivers for successful university sustainability partnerships, particularly in North America ([Trencher et al., 2014](#)).
- (2) *Student focus*: It has been recognized that students are able to play a key role in creating connections between universities and communities ([Hynie et al., 2011](#); [Holmberg, 2014](#); [Gardner and Bartkus, 2014](#)), and we attribute much of the success of this program to the central role students have performed. As learners, and as people preparing for their professional lives, the graduate students bring energy and openness to the work. They are able to work in short time horizons, which aligns well with the policy and program needs of the municipal government.
- (3) *Executive support*: Strong executive sponsorship and leadership has also been shown to be among the most important drivers for successful university sustainability partnerships ([Trencher et al., 2014](#)). In particular in our case, this has helped with acquiring the resources required for the program and with generating participation from City of Vancouver staff.

Conclusions

The City and UBC have agreed to continue the Greenest City Scholars program, reassessing on an annual basis. For the upcoming 2015 summer intake, the program's sixth year, 30 detailed project proposals were submitted by City of Vancouver staff, and, we anticipate that 20 projects will be undertaken, the highest number of project proposals received and the largest student cohort hired through the program to date.

The Greenest City Scholars program has provided a vehicle through which graduate students gain highly valued, sustainability-focused, professional work experience and make important research and policy contributions. The opportunity to participate in the program enhances the sustainability learning achieved in students' academic programs

and helps them to experience real world learning. This is consistent with the student experiences noted in an analysis of problem- and project-based sustainability education at Arizona State University (Wiek *et al.*, 2014). Even beyond these successes, we have found that the program helps to build a very valuable, active bridge between the city two organizations which strengthens the partnership for sustainability and creates a strong foundation on which we can further develop the relationship. Students can play an important role in strengthening such partnerships (Daneri *et al.*, 2015).

The City of Vancouver's funding-match commitment in 2014 shifted the program model and created the impetus and budget availability for UBC to expand the program to work with other key regional sustainability partners. In 2014, graduate student sustainability internships, called "Sustainability Scholars", were piloted with the provincial hydro-electric power authority, a gas utility, a local First Nations community and several on-campus departments. The extra funding for positions at the City of Vancouver (18 in total were funded) and the opportunities for positions with the new partner organizations (12 positions across 4 organizations) enabled a tripling of the number of student positions, resulting in 30 students supported through the program in 2014.

Plans for 2015 and beyond include a continued expansion of the Sustainability Scholars program to other formal and informal sustainability partners, which could arguably have significant impact on regional sustainability policy development capacity. Through this program and these partnerships, UBC hopes to fulfil the potential for the university to act as "catalyst for economic and social transformation" (O'Mara, 2012, p. 235). An important way that the City of Vancouver is providing support to this expansion is by helping to broker connections between UBC and some of the City's other partners to encourage them to work with UBC through the Sustainability Scholars program. Given the strong history and success of the Scholars model, City staff are keen to help other organizations also access the benefits of the program. There are, however, some risks associated with program expansion. Chief among these is the concern that some of the key strengths of the program will be diluted through this growth.

It will be interesting to discover to what extent the program model, which was co-created by UBC and the City of Vancouver to suit a unique set of needs and resources, can be adapted to fit other partnerships. Factors that we argue have been important in the Greenest City Scholars program, such as active program management by both partners, executive championship and the opportunity for students to participate as a cohort, may not be possible to replicate as Sustainability Scholars are placed with multiple partners that do not have the organizational program structure provided through the City of Vancouver. While the UBC Sustainability Initiative will continue to provide program management and executive support, it will not be possible for all of our new partners to do so, particularly in the early stages of program development. It is possible that these adjustments will diminish some of the strengths of the program. Despite this potential, given the strength of the Greenest City Scholars program and the successful 2014 pilot with other partners, it seems well worth it to continue to look for opportunities to adapt the program to suit more partners.

Writing about the "sustainable university", Sterling and Maxey advocate that the relationship between higher education and the external community "[...] needs to change for the benefit of both; that there needs to be a much better congruence between

these two realities” (Sterling and Maxey, 2013, p. 304). For this change to occur, universities must actively seek opportunities to make positive differences. Solving the challenges of sustainability will require collaboration between organizations at a scale much larger than this student program; however, we nevertheless see the Scholars program as having the potential for impact at different levels – at an individual level through the training and education provided to students, at an organizational level through the contributions of the individual projects to policy development and program implementation, and perhaps at a broader level, as a mechanism to enrich the partnerships that are required for societal transformation.

Notes

1. For example, campus + community planning (<http://planning.ubc.ca>), energy and water services (www.vpfinance.ubc.ca/ubc-energy-water-services-faqs/), human resources (www.hr.ubc.ca).
2. For example, intercultural understanding strategy, focus on people strategy, aboriginal engagement strategy, Vancouver Campus Plan and the Climate Action Plan.
3. The wood-waste agreement proved impractical and was not implemented.

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