

## **SEI 2009- Sustainability Education Projects**

UBC, Centre for Teaching and Academic Growth, and the Sustainability Office

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### **Himalayan Nature Society - Integrating Organic Gardening into Elementary School Curriculum. A Case Study in Himachal Pradesh, India.**

**Tegan Adams**- *Faculty of Land and Food Systems, Van Dusen Gardens, Canadian Centre for Policy Alternatives - Climate Justice Project, Farm Folk City folk, Friends of the UBC Farm (ish), Himalayan Nature Society*

How SEI Funds assisted with Project Development

- Project was overseen by the Himalayan Nature Society (HNS)
- HNS has a strong will to integrate and promote organic farming in the region; however as in most rural areas of developing countries, their financial resources are extremely limited and funding is scarce in supply (banks are poor, community is poor, rotary club and legion is poor...everyone is poor).
- Living expenses, wages and supplies in India are far cheaper than those listed in Canada; 500 CAD dollars was able to assist significantly towards an organic farming component in elementary schools by:
  - Providing Wages for 2 workers for the project (1-2 months in duration in pending)
  - Donating Essential Educational and Project Supplies (such as educational materials, books, posters, and farming tools) for the project to work with; the project would not have been possible without these supplies.
  - Providing support for the HNS foundation as an honorarium to the director's wages.
  - Provided travel expenses to allow potential future funders a visit to the garden site and encourage further development of the project; create awareness amongst the community of the project and the children's enjoyment of it.

The aim of the pilot project is to demonstrate the HNS' project development capabilities in order to apply for future funding from the UN Youth Project Fund. A "Success Story" of the HNS's accomplishments in terms of a small-scale organic farming project in the elementary schools will aid the formation of a successful grant, indeed.

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### **goBEYOND's Sustainability Education Across the Province short course.**

**Maggie Baynham**- *goBEYOND Project, BC Campus Climate Network, School of Community and Regional Planning, Land and Food Systems Grad*

**Angela Willock**- *Common Energy, GoBEYOND, Residence Sustainability Coordinators, Will be part of Global Resource Systems Program in the Faculty of Land and Food Systems Sept. 09, UBC farm volunteer*

The professional development funds provided by UBC TAG's Sustainability Education Intensive have been transferred to goBEYOND's UBC account where

they are earmarked for expenditure in delivering the Sustainability Education Across the Province short course.

Sustainability Education Across the Province (SEAP-BC) will be a 2.5 day short course that aims to build the capacity of BC's colleges and universities to integrate sustainability education into curriculum. Faculty and other campus stakeholders who participate will leave the intensive with a workshop that they can deliver to their colleagues, as well as the tools they need to build a community of practice and provide continued support.

The \$1000.00 provided by Maggie Baynham and Angela Willock's professional development funds is providing leverage for future funding for the initiative. Overall anticipated expenditures and revenue sources can be found in the attached budget. Currently, the \$1000.00 is not allocated to a specific cost, but will remain flexible as we see where our financial gaps lie.

We're excited about the opportunity to carry the momentum from the SEI forward and see similar workshops happening around the province in the future!

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### **Integrating Sustainability Learning Initiatives into a Standardized Technical Communication Course for Engineering Students**

**Annette Berndt**- *Technology and Society, Appropriate Tech in International Development, Technical Communication (Engineering), Faculty of Applied Science, Centre for Professional Skills Development*

In-class observations suggest that engineering students in a second-year technical communication course can enhance their learning experience when they are engaged in community-based research on sustainability issues. Applied Science 201: Technical Communication is a required 3-credit course taught by several instructors across approximately 30 sections per academic year. All instructors use a standardized syllabus, textbook, midterm and final exam. In this project, opportunities for community-based research and learning within the existing syllabus were identified and integrated. Students were placed into teams on the basis of their research interests and given the option of preparing a recommendation report on sustainability plans for a community of their choice in British Columbia or preparing a technical background report on a chosen product or service related to their engineering discipline. This project focuses on differences in learning objectives, research methods, and writing skills between these two groups of students. This project also demonstrates how a standardized, required course can engage students more effectively if "real-life" issues of urgency, such as that of sustainability, are integrated into the existing syllabus without adding to an already heavy assignment load.

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### **Establishing a Sustainable Platform for Ethical International Engagement and Service-Learning Practices**

**Shafik Dharamsi** -*Department of Family Practice; School of Population & Public Health; UBC Centre for International Health*

**Matt Whiteman**- *Teaching and Learning Enhancement Fund, Centre for International Health, College of Health Disciplines*

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### **UBC Botanical Garden**

**Nadine Diner**-*Education and Outreach Coordinator, UBC Botanical Garden (UBC Land and Food)*

The UBC Botanical Garden attended the TAG-SEI in 2009, and as per the Gardens SEI application the \$500 professional development funds were used as partial financing for the salary of an education work-study student. This student has been working as part of the Garden education team since September 2009, to help facilitate sustainable education projects, for example: 1. Elementary Learning - Developing a new and sustainable curriculum for Grades 3, 4 and 5 elementary students visiting the Garden as a class. This includes out-door and indoor educational components and culminating activities to support the curriculum. The project also includes information for the teacher on how to implement learning activities prior to and following their Garden visit, as part of a comprehensive education package. 2. Community Learning - Participating in the implementation and planning of existing and new outreach programs, to improve the Gardens ability to nurture an appreciation for nature and sustainability in the community. 3. Self-Guided Learning - Developing a self-guided winter tour, to motivate activity and an interest in the environment, by connecting visitors to the subtle by unique nuances of nature that can be found at this time of year. \* Other E.g. Year of Biodiversity – Generating ideas and participating in Garden program planning for the 2010 Year of Biodiversity. Please see the attached documents as proof of the use of the above funds for the proposed purpose. NOTE Academic Learning - My attendance at the SEI program connected the Garden to another attendant, Carla Patterson, and subsequently her colleague who was not present. As a result the Garden is now participating in the syllabus for Science 1/History 104 (Terry Project Mix Class) and Applied Science 261.

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### **Sustainability in Chemical Engineering**

**Naoko Ellis**-*Chemical & Biological Engineering, Clean Energy Research Centre, Biodiesel Project*

As documented in the SEI Application, CHBE344 (Unit Operations I) course is delivered this fall with development plans implemented based on the Sustainability Education Plan.

The Key points are as follows:

- section from the textbook “Green Engineering” have been adopted in the course notes
- assignments have been developed incorporating relevance to environmental awareness on-line pre-course survey is uploaded on VISTA -this is to create a benchmark for monitoring change in students
- components have been incorporated into the lectures to promote holistic systems thinking rather than technical unit concepts

- fact gathering has started to document this process and prepare a journal manuscript to be submitted to Chemical Engineering Education

The SEI funds will be used to assist a student to attend the next Canadian Society for Chemical Engineering Conference (Saskatoon in Oct 2010) and present their group project with me at the “Chemical Engineering Education”, “Sustainability in Chemical Engineering” or “Technical Green Engineering” session.

The group project is part of the CHBE344 assignment where each group is to work on applying the concepts acquired in class to greening existing units (specific units covered in the course) either on campus or in communities. This will be a competition with the concept from the winning group to be implemented to the conference presentation.

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### **Team Building in the First Nations Languages Program**

#### **Margaret Gardiner-First Nations Languages Program**

How the SEI funding helped us meet the outcome of our SEP:

Our goals were to strengthen the FNLG team and to contribute to the sustainability of our program. With this funding we were able to come together as a group, which we rarely do. Our instructors are spread across different faculties at UBC and beyond: (Dr. Patricia A. Shaw, Faculty of Arts; Marny Point; Faculty of Education; Elder Larry Grant and Jill Campbell of the Musqueam Band, Fern Gabriel of Kwantlen First Nations, Darlene Willier of Kwantlen University College) and teach at scattered locations (Musqueam Indian Band, Kwantlen First Nation, UBC main campus, and in Alert Bay on Cormorant Island).

- We were enthralled by Wade Davis’s talk on the loss of ancient cultures and knowledge. As this is at the core of our mission through the First Nations Language Program, this reinforced how valuable our own work is.
  - We have met once and plan to meet again to discuss curriculum and to support instructors who feel isolated and who meet challenging situations virtually every week in our cross-cultural, multigenerational classroom context.
  - We look forward to the Tree Top Walk as this ties in with a recent research project to provide Van Dusen Gardens with First Nations language labels for the plants/trees.
  - The SEI funding has allowed us to do some much needed team building.
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### **Theatre of the Oppressed**

**Yael Harlap-** *Centre for Teaching and Academic Growth (global citizenship in teaching and learning), Centre for Intercultural Communication, East Van Communal Housing Network, International Centre for Art and Social Change (SFU & Judith Marcuse Projects)*

The goals of my SEI project were around both the social and ecological

sustainability of the TAG Living Lab project.

We're using the SEI funds to send a student who is part of the TAG Living Lab Troupe to a Theatre of the Oppressed facilitator training, so that power and responsibility for the program can be increasingly shared with student participants -- enhancing the social sustainability of the project. That training will be in June 2010.

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### **Environmental sustainability- Spiti Valley in India**

**Elizabeth Hendren-** *Center for International Health, Global Health Initiative, Teaching and Learning Enhancement Fund*

The SEI pro-D funds were used to cover travel expenses to allow me to travel to the Spiti Valley in India where I implemented my SEP with a team of a medical student, a dietician and a local community health worker. We talked about environmental sustainability and coordinated artistic activities highlighting sustainable choices. Additionally we incorporated project sustainability into all aspects of our health intervention by meeting with local leaders and choosing appropriate interventions.

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### **The Dirt on Dead Wood: A Student-led Interpretive Tour of the Values of Dead Trees (for Faculty of Forestry Fall Field School at the Alex Fraser Research Forest**

**Cathy Koot-***Alex Fraser Research Forest. Williams Lake (Faculty of Forestry)*

Learning Objectives:

1. Identify and evaluate values of dead trees and downed wood.
2. Synthesize information and present it succinctly to fellow classmates in a memorable way.

### **Instructions:**

Crews will each be assigned a "stop" and supplied with relevant information for each topic and interpretive aids in some cases. Collectively answer the questions below in such a way that you can share what you've learned with the rest of the class. You will be given some time to collect your thoughts and then the class will visit each stop where crew members will present their findings. There will be only approximately five minutes per stop.

What the SEI money was used towards:

-purchasing supplies for class and field gear supplies

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**1. Windhorse Farm and the NS Environmental Network 2. Dalhousie University's New Double Major Programs in Environments, Sustainability, and Society**

**Charlene Morton**-*Music Education, Teacher Education, Social Issues in Education, Environmental Sustainability and Social Responsibility (Elementary School) Cohort, Faculty of Education (Department of Curriculum and Pedagogy)*

When registering for the SEI, I composed a tentative plan to hire a graduate student working in environmental education—a suggestion provided by the SEI organizers. As I do not have graduate students in this area nor would the funds support more than a twenty-hour task for a GRA, I decided to drop this option and attend to my own professional development, given that I was trained as a music and teacher educator and not as an environmentalist.

As part of this plan, I realized that my own library was lacking. So, I purchased several books. Some of these were introduced to me by SEI participants. Others came to my attention during conferences and meetings the past five months. Others—the David Orr book—I had borrowed from a colleague or the UBC library many times and decided I needed my own copy.

The main part of my initiative the past five months was spent searching for people and interdisciplinary conferences that go beyond scientific solutions for the environmental crisis and offer cross-curricular strategies. Although the search was difficult and often serendipitous, I found a variety of conference experiences that together were very rewarding, educational, and inspiring for my work and scholarship in sustainability, curriculum, and pedagogy:

1. Dr. Laurie Ricou, who was the first speaker at SEI, told me about the international conference for the Association for the Study of Literature and Environment happening at the University of Victoria at the same time as a Canadian Music Educators Conference that I would be attending. I played hooky from one day of the music education conference to attend the last day of ASLE sessions. (As it was the last day, conference organizers invited me to attend at no cost.) I have continued my association with this organization by joining their listserv. <http://www.asle.org/site/conferences/biennial/>
2. Walking the Talk advertised a youth-focused conference on UBC campus in the summer where I went to hear two keynote speakers: Dr. Kenneth Webster from the UK (with Liza Ireland, BC) and Dr. Janine Benyus from the Biomimicry Institute. I spoke with both Drs. Webster and Ireland afterwards and was most appreciative to learn of their work in cradle-to-cradle strategies for redesigning the economy and career programs in public education. This experience helped fill in concerns about the third pillar of Education for Sustainable Development, i.e., the economy. (Again, there was no fee.) <http://www.senseandsustainability.com/>
3. While attending the April 2009 Walking the Talk meeting, I met Tamara Lorincz, Director of the Nova Scotia Environmental Network. When she learned that I would be in Nova Scotia in September, she invited me to present at the Education Caucus portion on the second day of their annual gathering. For such a small province, they have a very active and committed membership who is working on government policy, law,

water, waste, education, research, and conservation. All reported at the weekend gathering. The setting at Windhorse Farm was particularly inspiring, providing a holistic approach to sustainability based on Buddhist teachings integrated with forestry and farming on the 250 acre property. (Having not paid for any conferences to date, I offered to pay fees even though I was a guest presenter.)

4. One of the education researchers at the NSEN gathering suggested I talk to her boss, Dr. Deborah Buszard, Associate Director of the Dalhousie University College of Sustainability. Dr. Buszard and colleague Dr. Tarah Wright, spent considerable time with me explaining the process, philosophy, and organization of their new double-major undergraduate sustainability degree programs in five faculties. This program is a positive and rare example of interdisciplinary and transdisciplinary program design and one I think we should pay close attention to. Both Drs. Buszard and Wright are very interested in and open to sharing their insights about developing their program. (No cost was associated with this meeting as I was in NS visiting family.)
5. Finally, I attended a one-day symposium sponsored by the University of Victoria, Royal Roads, and Walking the Talk. Here I heard Paul Hawken (Natural Capital Institute) speak as well as Paul Rowland (Executive Director, Association for the Advancement of Sustainability in Higher Education). Dr. Rowland, a curriculum developer, said that the slowest and under-represented aspect of sustainability on campuses is in academic programs. Furthermore, in this category, curriculum development is almost invisible compared to research and innovation. My experience here at UBC and in the public school system confirms this gap in sustainability planning.

*Accordingly, I am pleased to have had this opportunity to speak to a wide range of educators and environmentalists. I want to thank TAG and the Sustainability Office for providing the workshop incentive and financial support for this professional development, which has already infused my cross-curricular projects and scholarship in sustainability education in both the Faculty and Ministry of Education.*

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## **BC Biology 11 curriculum**

### **Jocelyn Much- EDCP, Science Education**

My sustainability education plan is a work in progress but has significantly improved as a result of the support of the funds. I am a high school teacher and have written a 66 page model describing how teachers can make environmental learning accessible in BC classrooms. I have taken an in depth look at the BC Biology 11 curriculum and have offered a more holistic delivery of curriculum. This pedagogy fosters dialogue between students and curriculum material through social networking platforms such as Youtube, Wordpress, and Flickr. The premise behind this project is to facilitate the construction of an emotional and cognitive connection with the Earth through a medium that contemporary teens can relate to. In turn I hope that, through this style of teaching, students will adopt a sense of stewardship for the Earth rather than the dominant consumerist mentality.

To put this theoretical model into action I designed a blog on Wordpress.com. To increase the mobility of my site I purchased a domain name from GoDaddy.com. I have since built the beginnings of an active blog site for my students through development of the blog. This site can be viewed at [mrsmuch.com](http://mrsmuch.com).

The theoretical model takes a close look at an extensive range of literature and textbooks pertaining to my topic. The books I have ordered from amazon.ca are mainly textbooks and books relating to ecological concepts that I would like to incorporate into the existing BC Biology 11 curriculum. I have been very selective in the books that I have ordered and one book that I have ordered is a world atlas that will help students gain a better understanding of each other when learning course material. I believe that it is very important to connect cultures in the widely diverse classrooms that I teach in. Many of the organisms I teach about are from many parts of the world, many parts that students have no idea about.

Many of these text books are versions of biology and ecology texts. Many of the ideas that I am proposing are found in text books that are not utilized by BC biology teachers. Many of the books I reviewed belong to the UBC libraries but I have ordered personal copies of some of them to enable me to continue acting on my design. I want to try new lessons with my students, lessons that are not found in the limited and dated versions of the Biology 11 text books.

Music is a central part of adolescent life. When people have a difficult time connecting with teens music can be a highly successful conduit to reach the emotional part of student thinking. Music is used so seldom in the high school science classroom and I believe it can be a powerful motivator for ecological learning. Being in tune with sounds can help students to listen to what they hear when they are outside whether it be urban noise or Stellar's Jay. Music can also be used to help students express what they are feeling in a very transitional part of their lives. I have ordered a music cd titled "Emotional Ecology" that will enable me to connect curriculum to emotion in a holistic and scientifically educational way.

Lastly, it took a lot of brainstorming on my part to compile my ideas, analyze the literature and organize it into a project. To assist me I purchased an unbleached chart paper pad from Staples.

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### **Enhancing sustainability in Applied Science 261/2 and History 104**

#### *B- History Department and Faculty of Applied Science*

The SEI professional development funds helped me achieve the overall goal of enhancing the sustainability components of courses I teach. In particular, they enabled me to:

--provide a \$300.00 honorarium to Jensen Metchie, SUB Renewal Coordinator, who provided workshops to Applied Science 261 students relating to their Sustainability Projects.

--provide Stacey Toews, co-founder of Level Ground Trading, with \$100.00 to offset travel costs to Vancouver so that he could address Applied Science 261 students on fair trade, a topic that relates to the social aspect of sustainability.



--provide a \$50.00 UBC Bookstore gift certificate to Chris [Lee?], a graduate student of Shona Ellis, who led groups of History 104 (Understandings of Nature) students on campus field trips

--purchase two books, James Gibson, *A Reenchanted World: The Quest for a New Kinship with Nature* and Elizabeth Kolbert, ed, *The Best American Science and Nature Writing*, that I hope to use in relation to my teaching.

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## **CONFOR**

**Leah Rathburn**- *Faculty of Forestry*

CONFOR is a graduate student conference focused on environmental studies and forestry, organized by graduate students for graduate students. Over the last 23 years CONFOR East has held a tradition of bringing graduates together with the opportunity to network and share research. In January 2010, the first annual CONFOR West is scheduled with a central theme of sustainable forestry. One of our main missions is to create a sustainable conference environment. The members of the organizing committee are all forestry students who understand the importance of sustainability both professionally and personally. We would like to convey this message throughout the conference. The SEI grant was used to purchase promotable items for the conference. We are able to provide each participant with a reusable mug, thereby avoiding plastic or Styrofoam cups at the conference. We were also able to purchase bags which can be taken home by the participants in the hopes of discouraging plastic bag use.

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### **Sustainability Education Workshop: Fostering Sustainable Behavior through Community Based Social Marketing**

Joyce Shen- *AMS Sub Renewal and Sustainability*

Workshop Goal:

To enhance campus sustainability leader's ability to select behaviors, identify barriers, develop strategies, and foster sustainable behavior through their work and everyday life.

Workshop Outcomes:

The workshop had received great feedback from over 100 participants, including student activists, staff Sustainability Coordinators and senior managers from all across campus.

The SEI money was used towards providing an honorarium for the speaker, Dr. Doug-Mckenzie-Mohr

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### **Urban Agricultural Course**

**Will Valley**- *Faculty of Land and Food Systems*

The SEI pro-D funds enabled me to attend an urban agricultural course, put on by Gaia College, through the Burnaby School district. The course has helped me significantly in developing my Sustainability Education Plan by further

broadening my appreciation of the connection between urban agriculture, sustainability and community service learning. I have a better understanding of the time and resources needed to incorporate urban agriculture tasks into my SEP as well as the expertise to lead such activities.

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### **Culturally Relevant Assessment in FCC 240: Development of an Assessment Model using the Medicine Wheel**

**Roselynn Verwood**-*Centre for Teaching and Academic Growth (Communities of Practice - Course Design, Facilitation, Portfolio); Department of Educational Studies; Native Education College*

#### My SEI Goals

I currently teach one course on Child Welfare, within the Family and Community Counselling Program at Native Education College (NEC). Within this course, I use the medicine wheel as a foundational structure for my teaching. Currently, I talk about personal ecology and balance in family and community counseling roles, using the medicine wheel, which comprises four areas of well-being including mental, spiritual, physical, and emotional. My original goal was to combine sustainability into the medicine wheel teachings in order to address sustainability in environmental, economic, and social equity realms. Since taking the SEI and examining many “models” that address sustainability, I modified my goal to instead be to develop an assessment model for the Child Welfare course at NEC, that is based on the medicine wheel.

#### How the SEI Helped Me Accomplish My Goals:

The SEI helped me identify different sustainability models, particularly one model that used the medicine wheel and integrated the sustainability pillars (environment, economy, and social equity). These models were influential in helping me develop an assessment model for the Child Welfare course, that is based on the medicine wheel. Without the support of the SEI I would not have had the conceptual framework to explore sustainability and to understand what sustainability could look like in the context of the Child Welfare course I teach. Furthermore, with the support of the SEI, I was able to hire two previous students, to help me develop an assessment model based on the medicine wheel.

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