University of Guelph/OMAFRA Knowledge Translation and Transfer Program

Annual/Final Project Report

Date of Submission:

Project Number: 299511

Completion Date: April 2011

Project Title: Enhancing BUS*4550/4560, Interdisciplinary Product Development Course

Keywords: Innovation, entrepreneurship, agri-food supply chain, knowledge translation, research, creativity, value-added, interdisciplinary, opportunities, agriculture-industry sponsors.

Principal Investigator: Melanie Lang

Department/Institution: Marketing and Consumer Studies, College of Management and Economics, University of Guelph

Project Budget Allocation: $10,000

By signing below, the Principal Investigator agrees that all OMAFRA/U of G Agreement resources (FTE, operating award and research station access) and all information provided in this report except for information provided in the New Intellectual Properties section are acceptable for public distribution. If there is information provided in this report which is not acceptable for public distribution and cannot be included in the New Intellectual Properties section, please attach a separate sheet containing wording that is acceptable for public distribution and check here_____to indicate that alternate wording is appended.

Melanie Lang 2011-05-13
Principal Investigator Date

Jane Londerville 2011-05-13
Department Chair/College Director Date

For Office Use

Program Director Date
(to be signed when reviewed)
## 1. Project Objectives

<table>
<thead>
<tr>
<th>KTT Project Objective(s)</th>
<th>KTT Project Details</th>
</tr>
</thead>
</table>
| 1. Create an advisory committee for BUS*4550/4560 that would comprise of key stakeholders in the Agri-Food Industry, including OMAFRA staff. | o To ensure exchange and application of knowledge between students, industry and agriculture sectors.  
o Supports program/practice/industry outreach and commercialization.  
o Supports clear and defined KTT plan  
o Knowledge-users will benefit from the recommendations and guidance of the advisory committee. Further enhance the course and student impact on the Agri-Food Sectors.  
o Help create network of academics and industry collaborators to help enhance program outreach and commercialization opportunities for student products. |
| 2. Train our GTAs to facilitate enhanced networking and partnership opportunities for BUS*4550/4560. | o Enhance linkages, partnerships and collaborations among researchers and research user communities.  
o Increase engagement among researchers from various disciplines.  
o Help translate and transfer the student products to various academic and industry research groups.  
o Help identify appropriate audience for the product (will depend on sector and consumption methods).  
o Possibly include KTT as roles and responsibilities of the GTAs for the course to increase efficiency of deliverables. |
| 3. Enhance profile and linkages for the course by being featured on other Agri-Food websites and communication materials. | o Enhance linkages, partnerships and collaborations among researchers and research user communities.  
o Increase awareness of student research and new developed products to various networks and audiences.  
o Increase awareness of the course to exchange knowledge and increase partnership opportunities for the students. |
| 4. Plan a year-end symposium of student work at the OMAFRA building that would include key stakeholders from the University of Guelph, Ontario Agriculture Commodity groups and OMAFRA. | o Broaden the course audience beyond the traditional academic community and build upon existing extension dissemination pathways.  
o Connect with OMAFRA staff to book presentation room and help host event. |

## 2. Activities and Progress over the Duration of the Project

List all milestones, as set out in the original project proposal or in approved revisions. Indicate which milestones have been met and which have not been met and why. Please use format below. (Note: Table
<table>
<thead>
<tr>
<th>List all Milestones</th>
<th>Target Completion Date</th>
<th>Actual Completion Date</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train GTAs on KTT (KTT Objective #2)</td>
<td>September 2010</td>
<td></td>
<td>Workshop dates were researched to try and find a date and location that was convenient for the graduate students. In February, a KTT workshop was developed and was focused solely on the research efforts for CME. I signed up my GRAs for that workshop and then asked that they summarize what they learned and provide feedback on how they felt they could contribute to the class. Until the GRAs received exposure to KTT, I was the primary source of KTT and tapped into the training I received.</td>
</tr>
<tr>
<td>Secure collaborations with commodity groups for academic year (KTT Objective # 1-3)</td>
<td>August 2010</td>
<td>August 2010</td>
<td>Met with various groups over the summer months and gave presentations about the course at research field days. All of our agreements were in place before the start of the Fall semester.</td>
</tr>
<tr>
<td>Create advisory committee (KTT objective #1)</td>
<td>September 2010</td>
<td>September 2010</td>
<td>The advisory committee comprised of a representative from each of the sponsor groups as well as key people from each of the management and science fields. This helped alleviate the time spent on researching appropriate channels. Students received answers to their questions at a much faster rate.</td>
</tr>
<tr>
<td>Increase awareness and dissemination of knowledge of student products (KTT</td>
<td>April 2010</td>
<td>April 2011 and ongoing</td>
<td>Our final product development show took place on campus on April 19th. We</td>
</tr>
</tbody>
</table>
Objective #3)
Increasing awareness of development initiatives and increase institutional relations (internal, external, regional).

had representatives from academia, industry and funding bodies.

Website updates – Ongoing
Brochure material – December 2010
Completed and Ongoing

We created a succinct one page overview of the course that is being used by our sponsors and collaborators to help disseminate the work that the students have done. It is also being used to help create awareness of the course for future sponsorship opportunities. For the final product show, posters of the students’ work were created and showcased, these posters will be used at other upcoming events to help profile the work done by the students.

3. Financial Report over the Duration of the Project

Table 3A: KTT Project Expenditures:

<table>
<thead>
<tr>
<th>Project Expenditures</th>
<th>Fiscal Year One</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and Stipends</td>
<td>$ 0</td>
</tr>
<tr>
<td>Travel</td>
<td>$ 2,500</td>
</tr>
<tr>
<td>Operating Costs</td>
<td>$ 5,000</td>
</tr>
<tr>
<td>Other Costs</td>
<td>$ 2,500</td>
</tr>
<tr>
<td>TOTAL Agri-Food and Rural Link $ Spent</td>
<td>$ 10,000</td>
</tr>
</tbody>
</table>

Notes on Expenditures: (Please be specific)
Fiscal Year One

-- notes on Salaries and Stipends: none

-- Notes on Travel: Farm visits, commodity board presentations, trade shows and exhibits, and competitions. Students were able to schedule
meetings with different groups and visit company operation facilities. Students from the various groups have also been asked to present at product competitions focused on university-industry collaborations as well as competitions from within the agri-management field.

-- Notes on Operating Costs: While the original proposal outlined that operating costs would be for the GRAs to travel to and receive KTT training, we were able to minimize these costs as a result of the on-campus workshop. As a result, we were able to direct the funds to assist the students with their product development costs (food, lab time, etc.) Some of the students decided to compete in College Royal, which meant preparing additional batches of product for the sensory testing. Other operational costs included hiring a graphic designer to help the students with their branding and packaging materials.

-- Notes on Other Costs Writing workshops to help create brochures, briefs and submissions to the course website and communication initiatives. Examples of publications include commodity magazines and newsletters. Resourcing this initiative would be targeted toward both the enrolled students and the GTAs. Additional costs were also distributing the materials that the students developed to stakeholder groups that either requested additional copies or were not able to attend in person.

Table 3B: Partner Contributions in Support of this KTT Project:

<table>
<thead>
<tr>
<th>Leveraged Funding</th>
<th>Fiscal Year One</th>
<th>Fiscal Year Two</th>
<th>Fiscal Year Three</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner Cash</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(specify partner names)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earth Fresh</td>
<td>$ 2,500</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Fruit and Vegetable Magazine</td>
<td>$ 2,500</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Ontario Centres of Excellence</td>
<td>$ 15,000</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Total Partner Cash:</td>
<td>$ 20,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner In-Kind</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(specify partner names)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Millet (Food Science)</td>
<td>$ 2,500</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Ontario Potato Board</td>
<td>$ 2,500</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Dairy Farmers of Ontario</td>
<td>$ 2,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jersey Ontario</td>
<td>$ 2,500</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Total Partner In-Kind:</td>
<td>$ 10,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. Results and Highlights of the Project

What is this project about?

BUS*4550/4560 is an applied special topics course where students from various majors work with collaborators from the agricultural industry. The course is named ‘Interdisciplinary Product Development’ and provides students an opportunity to develop new products and ideas using different agri-commodity inputs. Students from business and food science majors work together in teams to develop new products and present their ideas to the industry sponsors for their consideration and feedback. During this intense eight-month development process, students receive customized instruction and mentoring while developing a complete business plan for a new and unique product.

This course already impacts 25 students per academic calendar year with involvement from industry stakeholders. It is expected that exposure through commodity board presentations, newsletter submissions and trade show demonstrations will enhance the transfer of new product ideas to a greater audience and will increase their likelihood of success. Funding KTT initiatives will address the gap between the students and the sector groups, more specifically, getting the products from conceptualization to commercialization. Additional funding will also allow the course to be offered to a larger cohort of students and increase awareness of agriculture and rural initiatives. Efforts were spent on creating opportunity for the students’ work to be disseminated to the various groups.

Currently, the course addresses the OMAFRA key strategic priorities of thriving agriculture and food sectors, strong rural communities and safe food, healthy animals and healthy environment. Our students have helped create marketing communication plans and repositioning strategies for Ontario agriculture commodities.

What does this project involve? (How did you work towards meeting your project objectives).

The project involved interdisciplinary teams working for eight months to develop market research and new products. The process involved the students conducting both primary and secondary research, sensory taste testing, creating communication materials for their research panels, speaking with industry groups to gain insight for their project, creating fully-developed products and working with the Business Development Office to help them with their patent process. The pieces of work that were created to help illustrate their efforts include project proposals, requests for product presentations and exhibits at College Royal, creation of a complete business plan, creation of posters illustrating the derived impact of the project and presenting their ideas at an end of term show. Working with a graphic designer to help create branding and communication materials as well as packaging mock-ups.
All of the prepared posters demonstrated the course and highlighted the sponsors and affiliated industries that supported the students throughout the course.

In addition to the posters, oral presentations have been given at Community-University Expositions and Teaching and Learning Innovations conferences to provide context of the course framework, objectives, derived impact and best practices for next steps. Feedback received was that the course is very much needed to help create awareness about specific issues within the agriculture community.

List of industry and community people (and their respective affiliated industries) who attended the product development class presentations are as follows (note the list does not include staff, students and faculty from University of Guelph):

Diane Kleer, Fruit and Vegetable Magazine
Marg Land, Fruit and Vegetable Magazine
Barb Dillingham, KTT
Vanessa Currie, Plant Agriculture
Len Brackenbury, Earthfresh Foods
Simone Kent, Jersey Ontario
Wes Lane, Dairy Farmers of Ontario
Judy Seyler, Ontario Ministry of Agriculture, Food and Rural Affairs
Kristie Rivington, Jersey Ontario
Jamie Doran, OCE
Glen Abercrombie, Royal Bank of Canada

**What was the impact of this project?** *(Did you reach your intended target audience? Did you affect behaviour change? How is the agri-food sector in Ontario/Canada better because of your project? Were there any unintended side effects of this project (good or bad)?)*

Our intended target markets were reached through the relationships established at the beginning of the project. When a sponsor agreed to support the course, it was understood that they would be playing a mentorship role for the students. The level of involvement was either emailing with the student on a regular basis to ensure progress was being made, connecting the students with important contacts in the industry and/or inviting the students to their place of work to demonstrate their business operations and help the student understand why the project was significant to them and the consumer market.

In order to help disseminate the impact, a PhD student was hired to create posters of the different projects. The approach that was taken was to examine the impact of the students’ work on their learning, their assigned industry and the consumer market. The posters are attached at the end of the document for your review and consideration of various projects. We felt as though this was the best route to summarize not just the product developed but also the process and learning model used by the students.

In order to facilitate the creation process, the PhD student that was hired was involved in a separate poster creation project that also received KTT funding. By using the framework developed for the Partnership Practices, we created a seamless approach to the dissemination of our content so that it is
more aligned with recent KTT initiatives.

Behaviour change was made on part of both the students and the industry collaborators. The students became involved and aware of the many changing dynamics when working with industry groups. Some of the skills learned were how to interact with industry, how to manage expectations of the industry partner (as well as their own), how to effectively communicate between various stakeholder groups, how to research and utilize our on-campus resources, etc.

With respect to behavioural changes on part of the industry partner, there was a greater noticeable difference in behaviour from those sponsor groups that were new to the course versus those that have been involved for a longer period. Instructor level of involvement increased with these groups to help them understand the process and expected deliverable dates. An example of when managing expectations became imperative was when one of our sponsors changed the direction of the project which required the students to completely alter their project.

**What can others learn from your project?** *(Lessons learned and key findings that could benefit their life or work. Be specific for each of the key audiences/benefactors.)*

There are many best practices with respect to teaching methods relationship management derived from this course. Building cross-disciplinary teams is a wonderful way to contribute to the applied transformational learning models.

Students: given a chance to meet students outside of their discipline and collaborate with industry representatives. Responsibilities and skills learned were communication, creation and deliver of presentations, creation of posters, development of business plans, food product development processes and community outreach.

Faculty: increase network and dissemination opportunity of research and development as it relates to the agri-management value chain. Working closely with students to help enhance and create positive teaching and learning models.

Industry: Change to interact with students and University community, this interaction often leads to opportunities for the students within the organizations and various groups. One of the students from the class has since been hired by one of the industry groups. Gaining exposure of the different industry issues and matters and having bright students working directly on their issues is great incentive for long lasting relationships. Sponsorship logos were also highlighted on all communications (posters and presentations) to help bring awareness to the different groups.

**What the reader needs to know about your project** *(One sentence).*

The course reinforces, strengthens and supports the agriculture tradition of the University of Guelph through leading edge cross-campus interdisciplinary teaching and research, which looks at the value chain of the food industry, and covers the spectrum from conceptualization to production to commercialization that requires students to be mindful of agri-management principles intertwined with food-safety and consumerism.
Residual impact of the students’ involvement in the course has led them to activities and events that extend beyond the timeline of the course. One of the groups have been selected to represent the University of Guelph at the OCE Discover Connections 2011 Competitions. Our Guelph team was selected from a candidate pool of 350 teams across Ontario to be one of the top 15 to compete at an event on May 18th. The students will be highlighting their work, how it has contributed to the agriculture community, consumer groups and will also be profiling the support they have received from the different sponsor groups.

Additionally, given the excellent work that the students have done and preparation spent of delivery of their presentations, a select have been chosen to move on to an international agri-management student case competition. The students will be using their learned dissemination skills and applying it on an international stage.

5. Significance to Ontario Agriculture, Food Industries, and/or Rural Ontario

BUS*4550/4560 Interdisciplinary Product Development has tremendous impact on the Agri-Food /rural sector. Students involved in the conception, development and marketing of new agri-food products build cross-functional, analytical, team building and communications skills. Students develop a thorough understanding of the innovation process involving all stages of the agriculture supply chain. Product development requires a variety of different skills from many different areas and specializations.

The eight-month course fuses together very bright and highly motivated students with industry collaborators. Together, these two groups seek to create numerous products and services that serve industrial and consumer needs. The outcomes and products touched all phases of the agri-food supply chain and tested the skills, knowledge, talent and aptitude of students, faculty and industry collaborators.

The course has established roots in applied research with development opportunities and product offerings reaching areas of business, marketing, agriculture, food and nutritional sciences. Successful examples of past products and services include a gluten-free beer, fish food pellets using milk proteins, bio-plastics, ethnic cuisine and new ways to position existing agri-food products. Having the ability to collaborate across academic disciplines leads to the development of products such as low sodium dairy products, gluten-free millet based ravioli, and no sugar added ice-cream. These examples of products could not have been possible without the interest and support of industry collaborators.

Students who were involved in the course are now moving ahead looking for additional opportunities of where they can increase their exposure to multi-faceted learning opportunities. I have science students wanting help finding additional exposure to the management sector, while the business students are looking at their learned skills as transferable onto other disciplines. The word of mouth marketing that the course has received by the students has led to a significant change in delivery. The course is now being offered as a capstone credit for all Food Science students and will continue to draw industry collaborators and keen management students.

It is our hope to continue to foster the creativity of students under the guidance of faculty with the support from industry networks. Only then will the creation of innovations and the positioning of new and existing agri-food products lead to the value-added of interdisciplinary product development opportunities.
6. Contributions to our understanding of Knowledge Translation and Transfer

The course is growing in capacity and will involve a greater number of students from various disciplines, and as such, incorporating KTT efforts will enhance the effectiveness of delivery and dissemination of the materials.

Lessons Learned about KTT (New knowledge, or ‘key learnings’ about best practices for KTT that we can gain from this project. Comments about what you would do differently in a subsequent project.)

In order for this course to be within the scope of the KTT program, next year’s offering will focus on the commercialization aspect of the process. A formal working relationship has also been established with the University of Guelph’s Business Development Office (BDO) to increase commercialization opportunities related to the course and the resulting products. A revised one-page summary will serve as communication materials for when Technology Transfer Managers are engaging with different groups from industry. Integration of IP content and materials will be included in the delivery and the students will be expected to submit progress reports to their assigned technology transfer contact.

In order to accurately track the number of products that could potentially be commercialized, we will be working with the BDO to systematically monitor any advancement. By engaging with BDO and focusing on commercialization efforts, it would create lasting value with regards to the KTT initiatives.

An additional ‘train the trainer’ model is being incorporated in order to increase the sustainability of the KTT components of the course whereby the instructor is trained in KTT techniques that can be passed on from year to year as opposed to costly training for graduate students on an annual basis.

Stories about the Impact of the Project

The greatest impact was the gained appreciation on part of the students towards other academic disciplines and gained insight into agri-food and management fields. Students who had limited (if any) knowledge of agriculture became fully engaged in the sector and now consider themselves to have a breadth of knowledge about their respective field.

Methods and Tools Used to achieve the project objectives (Tactics/ communication channels used (i.e. video, storytelling, mapping, manuals, diagrams, scenarios, images, internet-based channels, etc.).

Utilizing on campus resource channels (library databases, writing centres, graduate students) and industry network connections have increased impact and strengthened collaborations across different units. The creation of posters will be used to highlight the student work at upcoming events where the relationships between the students and industry will be profiled. Communication materials have been created to illustrate the work that historically has been done and to entice additional sponsors for the course.
7. Please attach any media, products, etc. that have been produced as a result of this project. The materials/products may be posted on our website to highlight your work and the impact of the KTT program.

Poster materials have been attached as an appendix (in a separate file) to this document.

Branding (logos) materials can be found below.