WINTER
2011

OMAFRA – U of G Partnership KTT Funding Program - Approved Projects Winter 2011

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Successful Projects Winter 2011

Pat Remillard - Web-based KTT Infrastructure

Executive Summary:
In 2008, the University of Guelph Kemptville Campus applied for and received funding from Inukshuk Wireless to develop a pilot for a web-based technology transfer network – the Tech Transfer eNetwork. The **project's objective** was to design a technology-supported, web-based KTT infrastructure that would enhance, disseminate, and expedite the transfer of research knowledge critical to the future success of Canadian contemporary agriculture; ultimately accelerating its uptake – to facilitate innovation amongst industry stakeholders. The **pilot concept** was developed to address the current gap in knowledge dissemination from researcher to farmer / producer, as well as to overcome the barriers associated with its seamless transfer.

The **vision** is to become the virtual channel for knowledge transfer for U of G / OMAFRA. The primary target audiences are Farmers / producers, followed by educators / students, with researchers and their research being central to the eNetwork. The main features are the conversion of research papers into multiple formats that include: interpretive summaries, fact sheets, presentations – slide shows, audio and video; in laymen terms.

The initial focus was Dairy; and the focus of this next phase of development will continue to build that sector however the priority will be to develop the "Food for Health" sector in collaboration with Gopi Paliyath.

Subsequent development within the full project proposal will further build on the existing virtual infrastructure to include other agriculture, food, environment, and rural communities sectors.

Gopi Paliyath - Development of consolidated and comprehensive 'Food for Health' content for the Agri-Food and Rural Link KTT website

Executive Summary:
Despite extensive research efforts to understand the disease development process and to develop sophisticated technologies and pharmaceuticals for the detection and treatment of diseases, the economic cost of health care is constantly on the rise, and will reach a critical point where a public healthcare option becomes unaffordable, unless disease –preventive measures are rapidly introduced. **The objective of this project is to develop consolidated and comprehensive 'Food for Health' content as a part of the Agri-Food and Rural Link KTT website**. The proposed content for the Agri-Food and Rural Link website will be integrated among the Researchers, the Government (OMAFRA, Ministry of Health Promotion), and the Agri-Food sector. Through developing content for the Agri-Food and Rural Link web site, evidence-based scientific information can be made available to promote a healthy lifestyle, and reduce the incidences of habit-related, and preventable diseases. This initiative will strengthen other initiatives by the Government (eg. Foodland Ontario) to develop healthy eating habits. As well, the research that is being conducted focusing on the OMAFRA Food for Health theme priorities will be highlighted, along with the scientific information that focuses on the role of food in disease prevention. The content will populate the larger Agri-Food and Rural Link website, which will serve as a

forum to receive and transmit information, conduct debates and discussions, as well as serving as a general platform for knowledge translation and transfer in the broad area of food and health.

Wayne Caldwell - Planning for Agriculture: KTT to Engage Municipalities, Farmers and the Public

Executive Summary:
The future of agriculture in Ontario is dependent on the protection of quality farmland. In Ontario, successive waves of provincial and municipal governments have worked towards this goal for more than 40 years. The Provincial Policy Statement (and before that the Foodland Guidelines), the Greenbelt Plan and Places to Grow reflect strong provincial directives in this area. Despite provincial leadership and support, successful farmland protection remains fundamentally entrenched at the local level, where thousands of decisions are made on an annual basis by more than 400 Ontario municipalities and by tens of thousands of landowners. These decisions include zoning, official plans, boundary adjustments, land division and servicing. A number of other efficient and effective farmland protection methods are emerging at the local level, in Ontario and abroad. However, municipalities, farmers and local organizations are often disconnected from each other and from research and implementation tools that would mobilize new farmland protection methods.

In order to better connect municipalities for peer-to-peer learning and multi-jurisdictional research translation and transfer, this project promises the following:

- A strong partnership with the Ontario Farmland Trust and the Ontario Ministry of Agriculture Food and Rural Affairs.
- Continued collaboration with the Monieson Centre, Queen's University, and the Rural Ontario Institute.
- It will profile the on-going research of Dr. Wayne Caldwell in this area. Related resource materials will also be developed and profiled in consultation with the Ontario Farmland Trust.
- It will engage municipalities and the farm sector in understanding the rational for protecting farmland and will profile tools and strategies.
- It will develop and provide resource materials building on the notion of a "Handbook for Municipal Councillors – Best Practices for Planning for Farmland".
- It will provide materials for an updated edition of the book "Farmland Preservation – Land for Future Generations", a compendium of cross-disciplinary research.
- It will support active KTT in terms of peer-to-peer learning and through a community-based tours and presentations (for example will build on the concept of bus tours with local elected officials that the Principle Investigator has used with the Huron Water Protection Steering Committee).

Melanie Lang - CME KTT Outreach Seminar Series

Executive Summary:
The College of Management and Economics (CME) is committed to three primary activities: transformational learning; research that counts; and community engagement. Of equal importance is the promotion and sustainability of the inherent relationship between these activities. CME's community engagement agent, The Co-operators Centre for Business and Social Entrepreneurship (CBaSE) will be the organizing body for the CME KTT Outreach Seminar Series. This series is designed to facilitate opportunities for management researchers in CME to engage with a variety of food industry stakeholders, farmers and both urban and rural communities. The objectives of the CME KTT Seminars are to help farmers, food industry stakeholders and communities in Ontario:

1. better understand how current and future trends and events related to food may impact management decision making in agriculture; and
2. identify and anticipate drivers of change that will be the catalyst in the new business environment in agriculture and how they affect the food value chain.

With OMAFRA's support and active involvement over the next two years, CME plans to deliver a total of three webcasted seminars; based in Guelph and in select urban/rural locations. Of these seminars, a minimum of two will be offered in both French and English.

The proposed seminar series addresses OMAFRA's key strategic priorities of thriving agriculture and food sectors, strong rural economies, safe food, healthy animals and a healthy environment. We will demonstrate how faculty research today is helping to build stronger communities for tomorrow.

Ken Leslie - Development of an Ontario Dairy Cattle Welfare Symposium

Executive Summary:
Animal welfare is a complex issue, which is of growing concern for animal agriculture. Increasing attention from consumers has resulted in criticisms of the methods used to house and manage livestock in modern agriculture. In several parts of the world (e.g. Scandinavia and the European Union), the failure of animal agriculture to alleviate these concerns has led to legislative changes and increased regulation for the management of animals. For the dairy industry specifically, welfare concerns include continuous housing with lack of opportunity to graze, the high prevalence of metabolic problems following parturition, lameness and general lack of post-procedural and inflammatory disease pain management. Failure to address dairy cattle welfare concerns represent a meaningful issue for the dairy industry, which could lead to legislative action and loss of consumer confidence.

The beef industry has been very proactive in regard to similar concerns and threats. One development in regards to this situation has been the establishment of a Beef Cattle Institute and the International Symposium on Beef Cattle Welfare. Both of these initiatives are organized and hosted by Kansas State University. The bi-annual Welfare Symposium has been extremely successful as a venue forthe establishment of collaborative efforts between producers and other sectors of the beef industry, and for research knowledge transfer. One very successful component of the International Symposium on Beef Cattle Welfare has been the organization and delivery of a "webinar" component of the meeting, which

offers individuals from across North America and around the world, the opportunity to attend, and to participate.

The center-piece of this OMAFRA KTT project involves the establishment of an Ontario Dairy Cattle Welfare Symposium, hosted by the University of Guelph. The primary objective of this symposium is to promote the translation and transfer of recent dairy welfare research findings to Ontario dairy producers, to extension educators, and to other dairy industry professionals. This symposium will also serve as a platform for the establishment of critical collaborative efforts between dairy producers, welfare researchers and government scientists, such as the OMAFRA animal welfare and health specialists.

Ernesto Guzman-Novoa - Advisory and Outreach for Apiculture in Ontario

Executive Summary:
There is a need and demand within the beekeeping industry to provide updates and information in new innovative media formats; that enable the beekeeping industry, University of Guelph and other stakeholders to access and synthesize information about beekeeping management and advanced skills. There is also a demand to provide services that allow beekeepers to collaborate and share information when distance limits access to information and communication. The proposal described in this proposal addresses these demands and provides solutions, giving opportunity to the Ontario Beekeepers Association (OBA) Tech Transfer Program (TTP), University of Guelph and OMAFRA to collaborate and bring these solutions into use.

The specific objectives of this project is to update and develop advisory outreach material, update and publish manuals and guides, develop instructional DVDs, record and provide webinar services for industry conferences. All of these materials and services will be made accessible and accelerate the transfer of knowledge to the field through the OBA, University of Guelph and OMAFRA. Project progress will be evaluated in order to ensure that the efforts to increase awareness of the beekeeping industry will improve production system and environmental sustainability. It will also be evaluated to ensure knowledge users become more involved in the industry as a result of services provided through the KTT project and continue the use of these materials.

Ron Johnson - Establishment of an Ontario site for CgFARAD at the University of Guelph for the translation and transfer of food animal drug residue avoidance and toxicant exposure knowledge

Executive Summary:
CgFARAD (Canadian Global Food Animal Residue Avoidance Databank) is integral to the Canadian agrifood system. The goal of CgFARAD is to facilitate the translation and transfer of critical food animal drug residue and pharmacokinetics knowledge, compiled from several stakeholder groups, to end-users of the information (veterinarians, producers) to prevent violative drug residues in food animals when extra-label drug use (ELDU) is necessary, or animals are exposed to toxic chemicals. The primary objective of CgFARAD is to protect the Canadian food supply. CgFARAD has provided assistance with over 12,000 queries from veterinarians since its inception in 2002, with over 50% of inquiries coming from veterinarians practicing in Ontario. Currently, CgFARAD is based solely at the University of

Saskatchewan. There is great need for an Ontario site of CgFARAD, which will enable CgFARAD to handle increasing numbers of queries and implement its current strategic objectives which include further development of service, technical capabilities and stakeholder relations. An Ontario site will also provide Ontario commodity groups and producers with local access to drug residue expertise in a timely manner i.e. accelerating the transformation of knowledge into use, thereby better serving the Ontario stakeholders and public sector while contributing to improvements in food safety and traceability. Further, an Ontario site for CgFARAD situated at the Ontario Veterinary will be ideal for the training of highly qualified personnel and the fostering of drug residue and pharmacokinetic knowledge translation and transfer amongst researchers, knowledge brokers (OMAFRA) and end-users (veterinarians, clients, commodity groups). As outlined above, the proposed project fits very well with OMAFRA's key strategic priority of "safe food, healthy animals, and a healthy environment" and also supports the "emergency management" OMAFRA research theme.

Rebecca Hallett - A dynamic action threshold decision-making tool for soybean growers

Executive Summary:
Research in the Hallett lab led to development of a dynamic action threshold calculator (DAT) to aid growers and crop consultants in decision-making about the need to spray soybeans against soybean aphids. The DAT incorporates natural enemy numbers, as natural enemies can limit soybean aphid populations, reducing insecticide use and minimizing yield losses. In this project, the DAT will be translated into a mobile application that will allow the target audience to make in-field decisions as to whether an insecticide application is warranted. A DAT app will be more user-friendly than the original hand-held disk calculator, require no user training, and will provide OMAFRA specialists and UofG researchers with provincial data on soybean aphid populations and spray recommendations. A survey of Ontario grain farmers and major crop consulting companies will be conducted to ensure that the technology suits the largest number of potential users. The success of the tool will be evaluated under operational conditions after transfer to users.

OMAFRA Production Systems Research Theme Priorities addressed: 'Plant Protection', by improving diagnostic technologies and surveillance techniques to improve management of a key insect pest, and helping to reduce use and misapplication of chemical pesticides; 'Production Efficiency', through development of a decision-making tool to help users efficiently determine the need for a pest management action and reduce environmental impacts of soybean production.

Wayne Johnston - Ontario Agri-Environmental Research Data Repository

Executive Summary:
All too often the results of expensive and time-consuming research as represented by rich data sets are lost due to the absence of sound data management plans. Redundant research is undertaken because the previous research data is no longer available. Opportunities for analysis of data across time are lost along with the historical data sets. Even when data has been properly stored and preserved it benefits no one if it isn't easily discovered, retrieved and repurposed.

The proposed project aims to address these problems by establishing a sound and sustainable strategy and set of tools for the archival storage, preservation and accessibility of Ontario agri-environmental research data. The resulting system will be as easy as possible for users to submit data sets, discover

data sets and repurpose data sets. It will be designed with an eye to sustainability beyond the life of the funded project.

As the data repository grows over time it will ensure that data generated by publicly-funded research has a greater impact over a longer period of time. It will encourage interdisciplinary and interinstitutional collaboration as data generated for one purpose finds relevance in other fields.

Linda Hawkins - Clear Language Research Summaries: Process, Training, Outputs and Dissemination

Executive Summary:
This project will see knowledge translation and dissemination activities across research endeavours of the 7 University of Guelph Colleges, with specific attention to projects from the OMAFRA-University of Guelph partnership. Many scholarly products in the form of journal articles or academic presentations remain inaccessible to interested knowledge users. Translating academic research into accessible language using clear language writing and design principles is one way of addressing this discrepancy. A unique team composed of knowledge brokers from the University of Guelph (from the Institute for Community Engaged Scholarship, the Business Development Office and the Office of Vice President Research,) and from the Knowledge Mobilization unit at York University, will work together to deliver 144 research summaries over two years. This team will both devise and deliver a process of training, templates and text suitable for multiple stakeholders' use, and cultivate existing and new distribution channels for dissemination and use of research summaries by local, regional and national audiences. We will work closely with OMAFRA-KTT staff to meet all objectives.

Khosrow Farahbahksh - Application of Participatory Model Building (PMB) to enhance knowledge translation in pollution prevention in the food processing sector

Executive Summary:
In our current KTT project (Project #: 299541) we are exploring the use of Learning Alliances (LA) as the means of knowledge mobilization and translation for implementing long-term pollution prevention in the food processing sector. Learning alliances are multi-stakeholder learning and innovation platforms that attempt to embed knowledge translation within the process of innovation. Effective LA and the success of pollution prevention require meaningful participation of all stakeholders and in particular floor-level workers. LA and Pollution prevention (P2) are as much about a change in the operational culture as it is about incorporation of new processes and technologies. To ensure sustained and long-term engagement of a certain facility in P2, a culture of participation must be well-established and ultimately institutionalized. To this end, we propose to use the Participatory Model Building (PMB) approach that is highly compatible with and complementary to the Learning Alliance model. PMB is a proposed stepwise methodological approach that combines (1) problem framing, (2) stakeholder analysis, (3) individual modeling, (4) group model building, and (5) institutional analysis (Halbe et al. in review).

In this project, qualitative causal models will be constructed by both individuals and groups (e.g., researchers, facility managers and workers) in order to examine different perspectives, and, based upon this, jointly discuss the problem of P2. Modeling with individuals is important to introduce the method

and analyze differences in the perspectives of stakeholders. Participants are encouraged to examine their personal mental models with respect to a particular problem including problem definition, causes and consequences of the issue, potential solutions, and barriers towards success. Subsequently, the building of a qualitative causal loop model in a group supports structured discussion about the problem, and learning amongst group members about different perspectives and solution strategies. We believe that the application of the PMB approach will further the impact of the LA methodology and ensure its long-term establishment in the core culture of the industry. We are currently working with two large food processing facilities in southern Ontario and both are keen to develop and implement the LA and PMB model to institute sustained P2 and continuous process improvement.

Scott McEwan & Andrijana Rajic - Bridging the gap between science and policy in the agri-food sector through knowledge synthesis and translation (KST) support tools

Executive Summary:
The underutilization of scientific evidence in policymaking, recognised as a major gap in many sectors has been addressed in the health sector through the emergence of knowledge synthesis and translation (KST) research. The recently developed support tools for evidence-informed health policy making and similar efforts in other sectors, offer a unique and cost-effective opportunity for the adaptation of these tools in sectors, such as agri-food, with a shorter history of KST research. There is a need in the agri-food sector to improve awareness and properly train policy and decision makers and those working with them how to more effectively use research to inform policy actions and decisions.

First, a scoping study will be conducted to identify various KST support tools used in different sectors (e.g. health, social science). Focus groups will then be conducted to introduce and summarize the identified KST tools and generate discussion on their pros and cons. A KST Support Tools Handbook for Policy and Decision Makers in the Agri-Food Sector will be developed based on the results of the scoping study and focus groups.

Second, we will organize one workshop targeting agri-food policy/decision makers and research/policy analysts in Ontario/Canada to increase their awareness of the most practical KST support tools applicable to their sector, how to conduct rapid and robust research reviews, and effectively translate/package research for various end-users, respectively. The workshop will use the KST Handbook as training material. The Handbook will be posted on-line to be readily available as a resource for agri-food communities in Ontario and Canada, assisting them with mobilizing research into practice/program/policy. The workshops will result in a cadre of KST trained policy and science/research professionals that are able to better utilise scientific evidence and communicate their needs.

John Fitzgibbon - Evaluating the Role of Knowledge Translation & Transfer to Enhance Farm Organization Capacity to Participate More Effectively in Collaborative Decision Making

Executive Summary:
The research will evaluate an innovative Knowledge Translation and Transfer (KTT) approach developed by an agricultural network in order to represent the agricultural community on a multi-stakeholder collaborative decision-making process. Farm organizations are increasingly involved in local decision-making processes for developing policy concerning complex problems where there are competing interests and the potential for conflict. This research will use a constructivist approach to evaluate and document how farmers can participate more effectively in local decision-making processes, and provide insight for developing farm organization KTT capacity in collaborative decision-making processes involving agri-food and rural stakeholders, including:

1. The preferred way for translating research-based organizational and technical knowledge for use by agricultural representatives;
2. The manner in which this knowledge is transferred between agricultural representatives disseminated to other sector representatives; and
3. How individuals in other sectors perceive and use this knowledge.

This research supports OMAFRA's key strategic priority of "safe food, healthy animals and a healthy environment" by providing valuable insight on how KTT to manage and protect water resources occurs within the agricultural community, and supports OMAFRA's key strategic priority of "thriving agriculture and food sectors" by building farm organization capacity to share knowledge and participate effective in multi-stakeholder decision-making processes in order to maintain and increase their viability and competitiveness.

Owen Roberts - SPARK Research Articles and Research Videos to Support the KTT Program

Executive Summary:
The SPARK writers/videographers will create a series of 24 written research articles, 3 for each of the research themes and 8 fully edited research videos, 1 for each of the research themes that will enhance and support the OMAFRA/U of G Partnership and the KTT Program by accelerating the transformation of knowledge into use. The topics for the articles and videos will be chosen by the KTT Team in collaboration with the SPARK Team and none of the work produced will in any way overlap work done on the OMAFRA Yearbook or Farms.com contracts.

Helen Hambly & Chantal Phillips - Open Access and Copyright Issues Related to KTT for the OMAFRA-UoG Partnership

Executive Summary:
Knowledge Translation and Transfer, especially as practiced within the OMAFRA-UoG Partnership relies entirely on access to information to transfer and generate more knowledge. In today's world, significant creative and economic potential is believed to lie in making information produced by public institutions more accessible (Hall, 2010). It is also widely recognized now that attention to improved intellectual property management, including clear and strategic decision-making on a range of copyright-related issues, has also led to the development of new open innovation strategies.

A wide range of KTT material including scientific datasets, research/technical reports, official government statistics, photo, audio and video materials, educational resources and commissioned reports may be subject to copyright considerations. Copyright is generally defined as the protection of original works (which may include databases/repositories). Material produced by the OMAFRA-UoG Partnership may have high to low originality from the standpoint of copyright. Some copyrighted material may not be available for re-use by others. In other circumstances, material may require designations referred to as minimal markings, specific copyright and licensing statements or defined statements of attribution. Still, in other contexts, especially those using Web 2.0 (social media), attention to IP may be minimal and more attention given to interoperability. In all contexts, important questions face KTT managers regarding what, when and how to disseminate information through various media.

This KTT project will seek to assist KTT managers with awareness raising and decision making by examining information access and intellectual property management in relation to their KTT activities in the OMAFRA-UoG Partnership. This project will identify and review relevant copyright law in Canada, examine current 'best practices' and platforms for information access and dissemination. It will use one specific and practical case study – the Ontario Vegetable Crop Research Electronic Repository (OMAFRA-UoG Ridgetown Campus) to explore how to institutionalize something as common as information dissemination and extension but to identify decisions made as material is collected and digitized, and as possible, moved into open access. This case would also generate a guideline for KTT. All recommendations of the project will inform KTT activity in all OMAFRA strategic priority areas and build upon its new content management system.

Gayle Ecker & Jeff Thomason - "Report on Research" - Implementation of an Extension Program based on Equine Industry Needs and Priorities using a multimedia approach through social media channels

Executive Summary:
Multimedia and social networking provide important KTT opportunities to reach out to the horse industry to deliver applied information generated by the UofG equine research program to support animal health and rural information needs. Based on industry feedback and priorities, this project will extend the reach of the research communications program to deliver cost-effective research updates using multi-media approaches and a “multiple venue” extension/transfer program. Equine Guelph will hire two part-time staff (writer and video producer/editor) to produce “show and tell” researcher interviews (description of research, how it is applied to support animal health in lay language, including pictures and animations as needed, and applied “take-home points” on good care/standards for their horses and facilities). This information will be “bundled” with a lay article on the research, researcher bio, and list of publications, which in turn will be used in multiple ways/pathways (mobile tags links to videos at tradeshows and exhibits, FaceBook, websites, e-news, printed articles with mobile tags) to accelerate the transfer of applied information directly to end-users (owners and caregivers). This information will be disseminated into the industry, with further transfer from the associations to their members, in multiple venues based on the feedback received from the Industry Survey. It falls under Priority A and is the second phase of a multi-phase approach to enhancing the outreach to the equine industry. This directly enhances outreach of research funded through EG that meets OMAFRA Production Systems priorities: Animal health, welfare, production efficiency, and environmental impact.