

# THE UNIVERSITY OF BRITISH COLUMBIA



**Vice President Academic and Provost**

6328 Memorial Road

Vancouver, B.C. Canada V6T 1Z2

Tel: (604) 822-4948

Fax: (604) 822-3134

## MEMORANDUM

August 15, 2006

To: Senate  
c/o Ms. Lisa Collins, Manager of Senate Secretariat Services

From: Lorne A. Whitehead  
Vice President Academic and Provost

A handwritten signature in blue ink, appearing to read 'LAW', is placed next to the name Lorne A. Whitehead.

**Re: Establishment of the Technology Enabled Knowledge Translation  
Investigative Centre in Health (TEKTIC)**

I am pleased to forward to Senate, for information, the proposal to establish the Technology Enabled Knowledge Translation Investigative Centre in Health (TEKTIC), in the Faculty of Medicine.

TEKTIC will actively pursue a cohesive research strategy through collaboration with health researchers and Faculties/Schools/Departments with interest in this domain. TEKTIC's vision is to understand how information technologies (eg computers, personal digital assistants, cell phones) can be used effectively to accelerate the translation of health research evidence into routine health practice.

The full background and rationale for TEKTIC are outlined in the attached document submitted by Dr. Kendall Ho, Associate Dean and Director, Division of Continuing Professional Development and Knowledge Translation, Faculty of Medicine, dated August 2006. The proposal has been reviewed by, and has the support of, the Committee of Deans.

/cp

Attachment: Technology Enabled Knowledge Translation Investigative Centre in Health, submitted by Dr. Kendall Ho, dated August 2006

# Technology Enabled Knowledge Translation Investigative Centre in Health

## **“TEKTIC”**

University of British Columbia

Presentation to UBC Senate

Submitted by: Kendall Ho, MD FRCPC  
Associate Dean and Director  
Division of Continuing Professional Development  
& Knowledge Translation  
Faculty of Medicine

Submission date: August 2006

## **I. PURPOSE**

This document proposes the establishment of the **Technology Enabled Knowledge Translation Investigative Centre in Health (TEKTIC)** at the University of British Columbia to actively pursue a cohesive research strategy through collaboration with health researchers and faculties/schools with interest in this domain.

## **II. PREAMBLE**

As the Romanow Commission report (2002) notes, "there are serious disparities in both access to care and health outcomes in some parts of the country, particularly for Aboriginal peoples and in the north. ...The care we deliver should match the needs of different groups of Canadians..." In addition to Canada's focus on Telehealth, BC's Premier's Technology Council (2002) reported a pressing need to establish a "provincial coordinating centre for technology-enabled learning for health professionals" and to "adopt and implement common health information technology infrastructure and standards." Clearly, governments support the establishment and implementation of an eHealth system for future health services delivery.

eHealth is presenting itself as a strategy to support Canada's policy priorities. In a vast country like Canada, modern Information and Communications technologies (ICTs), including computers, PDAs, videoconferencing units (VC), and Internet technologies open up new fields of health applications which historically would have been difficult or impossible to attain. They are also emerging as important tools for health professionals for their continuing professional education. These electronic media can be very powerful in assisting health professionals and health systems in accelerating the incorporation of the latest evidence and discoveries in health research into clinical practice. This is a high priority for academic bodies such as the Canadian Institute of Health Research (CIHR) and Michael Smith Foundation (MSF), and political bodies such as the provincial and federal governments. Furthermore, ICT facilitates rural and regional communities' access to quality education and clinical services, helping to meet a great social need and help recruitment and retention of rural health professionals. Some key trends include mobile communication through ICTs and the development of ambient intelligence built into every day devices. Currently, health applications have not taken full advantage of new technologies.

While ICTs continue to evolve at a rapid pace, adoption rate has been hampered by a number of factors including: time needed to understand ICT integration, exclusion of health professionals in the creation and testing of ICT applications, lack of technical support, and the attitudinal inertia of moving beyond traditional health care models. Leadership in changing the mindset of health professionals, provision of technical support, and synergy with technical experts in health care redesign are timely and fundamental to health ICT integration.

The Canadian Institutes of Health Research defines knowledge translation as "...the exchange, synthesis and ethically-sound application of knowledge - within a complex system of interactions among researchers and users - to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system".<sup>1</sup> As Davis points out (Davis et al, 2003) KT offers a systems' perspective in addressing key health issues, as opposed to continuing professional development (CPD) which focuses on individual behavioural change. Currently, KT generated from health research takes more than 20 years to be fully integrated into practice. However, use of ICTs can systematically accelerate this KT cycle. An excellent example is the recent control of SARS outbreak through ICTs to enable patient tracking, education, and modification of clinical practice and health systems.

UBC has an interest in investigating the potential of e-learning to facilitate and coordinate education of health disciplines by the various schools and faculties, connecting our campuses and communities in B.C. together. The Faculty of Medicine also has a strong desire to promote technology enabled learning for medical trainees and practicing physicians in this province, vis a vis provincial medical school expansion. The College of Health Disciplines has a vested interest to build interdisciplinary teams of health professionals as communities of practice to carry out team based learning and clinical practice. It is therefore a highly opportune time now to establish a common core of health researchers from the UBC Campus to synergize on conducting relevant research in health TEK-TIC.

### III. TEK-TIC: VISION & GOALS

The vision of the Technology Enabled Knowledge Translation Investigative Centre is to understand how information technologies (e.g., computers, personal digital assistants, cell phones) can be used effectively to accelerate the translation of health research evidence into routine health practice.<sup>2</sup> The five key objectives of the Centre are as follows:

1. *Clinical practice enhancement through information technologies:* Our Centre designs, develops, and evaluates information technologies designed to enhance clinical practice. For example, we are currently involved in a collaborative research project that compares the effectiveness of technology enabled academic detailing to that of face-to-face academic detailing across rural and urban settings.
2. *Human-technology interface:* We are engaged in examining the interface between humans and technological tools to optimize the utilization and practice of these tools in healthcare contexts. For example, we have investigated technological readiness of physicians in the context of hand-held computer applications. We recently developed, distributed and evaluated Clinical Practice

---

<sup>1</sup> Anonymous. The Knowledge Translation Mandate of CIHR. <http://www.cihr-irsc.gc.ca/e/8505.html>. Last accessed 11/1/2005.

<sup>2</sup> Ho K et al. Technology enabled Knowledge Translation. CMAJ

Guidelines on handheld computer platforms for the management of diabetes, and are currently developing platforms to support Clinical Practice Guidelines for other chronic diseases.

3. *e-Health Policy translation:* Policy translation is essential to guide the optimal use of information technologies and health informatics. Through a recently funded MSFHR initiative (BC Alliance on Telehealth Research and Policy to Enhance Home & Community Care and Chronic Disease Management), one of our researchers is implementing a baseline study of e-health related policy within BC to formulate a planned approach towards e-health policy knowledge translation, including aspects of its development, communication, and impact.
4. *Capacity building:* We recognize the importance of nurturing researchers to pursue the exploration of information technologies in promoting knowledge translation. Current examples include our team collaboration on a Masters level inter-university course on health informatics, and an undergraduate level health informatics course for life sciences students. These initiatives, together with our future plans to engage Masters and PhD level graduate students as well as post-doctoral researchers, attest to our commitment to capacity building.
5. *Research synchronization for effective knowledge dissemination:* Each research area articulated above is necessary but not sufficient on its own to ensure effective knowledge translation. We must understand how best to coordinate efforts towards effective systems-based knowledge translation. Our work in engaging health professionals in e-health adoption and implementation in BC exemplifies this synchronization.

TEKTIC seeks interdisciplinary research opportunities to synergize with different faculties and schools. To date, multidisciplinary collaborations have included the College of Health Disciplines, School of Nursing, Sauder School of Business Centre of Health Care Management, Computer Science, Continuing Studies, and UBC IT group. Strengthening of these linkages and establishing new ones with other faculties will be an vital direction to move forward.

Through ongoing research around these key objectives, our Centre will be able to recommend and implement technology enabled solutions for our health system, such as: offering evidence-based best practices in educational programming models for health professionals; engaging policy makers in e-health implementation; and collaborating with health administrators to implement electronic health records and public health surveillance systems. These initiatives will add tremendous insight to technology enabled knowledge translation, and also lead to interdisciplinary engagement in research, evaluation, and implementation. Further, the Centre's program of research will contribute to best practices for sustainability of the integration of technologies in health care contexts – building economic as well as social cases in health care delivery.

#### **IV. Governance**

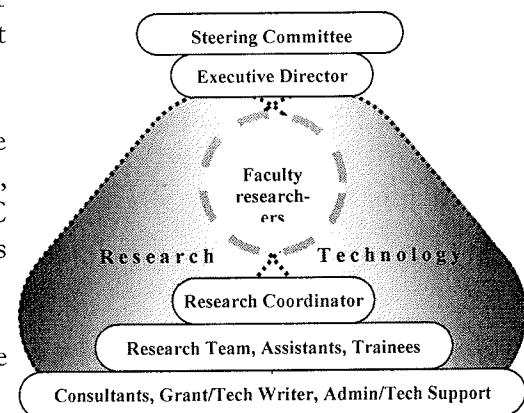
Our research team has a strong track record of collaboration on various research projects, grant applications, workshops, and committees in technology enabled knowledge translation over the last three years. We are an inter-disciplinary and inter-institutional team with diverse expertise and a shared enthusiasm to carry out research. Our diversity of perspectives contributes to a cohesive vision and the goal of improving health care through information technologies. Highlights of our research contributions and collaborative partnerships can be seen in our researchers' Curriculum Vitae. Our research initiatives have strong linkages with academic programs at UBC in a variety of contexts including undergraduate, postgraduate, and continuing education programs in the Faculty of Medicine. Our research also links with pre- and post-licensure programs in interprofessional education. We actively support junior scholars in research staff positions, as well as assistantships for

graduate students, undergraduate students and residents to further build capacity in technology enabled knowledge translation research and education.

Governance and accountability will be regulated by UBC's internal procedures through the VP Academic and Provost office. TEK TIC will be a centre set up in the Faculty of Medicine (FoM). The Centre will be managed by an Executive Director. A Steering Committee comprised of the Executive Director, three elected qualified health researchers, three elected associated health researchers and a scholar trainee (graduate student) will guide the Centre's activities. These activities will include setting research and development objectives, overseeing financial and administrative components, coordinating the development of scholar trainees, facilitating collaboration among partners, as well as building partnerships with other provincial, national, and international health research and development centres. The Steering Committee will provide guidance in the design of initiatives to respond to the needs of health professionals and consumers, as determined by evidence-based research. It will also provide advice with respect to the latest developments and research in knowledge translation and technological tools for its facilitation. The Centre's Research Coordinator will act as a non-voting secretary to the Steering Committee. The Steering Committee may conduct its business face-to-face, via teleconference or using Internet-based interaction tools, and will meet at least once every two months.

An advisory committee will also be established, the membership of which is composed of Faculty of Medicine, College of Health Disciplines, and other disciplines in UBC to provide advice and guidance to this centre's operations and functioning.

The figure on the right graphically depicts the governance structure of Health TEK TIC.



## V. Funding and Sustainability

Thanks to the support of the Academic Provost Office, the Faculty of Medicine, and the College of Health Disciplines, there is a foundation of a three year infrastructural support upon which TEK TIC can build. This support takes the form of:

- a. **Space:** The Faculty of Medicine will provide sufficient space to house TEK TIC's personnel and research activities;
- b. **Faculty support:** The VP Academic Provost, the Faculty of Medicine, and the Division of Continuing Professional Development & Knowledge Translation (CPD-KT) has each contributed \$60,000 as bridge funding over a three year period, thereby having a total of \$180,000 over three years to support the establishment of a faculty position for a new Faculty member, Dr. Sandra Jarvis-Selinger, to be a researcher/scholar; Faculty of Medicine Department of Surgery is working with CPD-KT to finalize this Faculty position;
- c. **Administrative support:** The College of Health Disciplines will provide funding support for a 1/5 FTE research assistant to TEK TIC; CPD-KT will assist TEK TIC in the first three years in providing financial administration support.

Upon this basis of support, TEK TIC will seek out funding in the form of grants, contracted research, provincial/national government funding, and other sources to support the growth and sustainability of the research unit in the next three years and beyond. Specifically, we intend to:

- a. Apply for infrastructure grant unit support from organizations such as Michael Smith Foundation of Health Research, Canadian Institutes of Health Research and others to support the operations of the unit;
- b. Apply for scholarship by and for Dr. Jarvis-Selinger to support her beyond the first three years of funding support of her faculty position;
- c. Work with the Provost office to develop a health informatics pursuit in UBC for students to contribute to the academic acumen;
- d. Continue to seek out research funding from different sources to support research and development of TEK T.

To date, CPD-KT has enjoyed some success in attracting research funding from major granting agencies such as CIHR and SSHRC, and policy research translation funding from provincial and national governments and international bodies. For example, in 2005, CPD-KT obtained more than \$1 million competitive and non-competitive funding for TEK T related research (see Appendix I). In addition, CPD-KT, under the joint direction of B.C. Ministry of Health and the Faculty of Medicine, is assisting in eHealth related implementation and evaluation in B.C.

During summer 2006, two important competitive grant funding have been achieved. We were successful in the 2006 Michael Smith Foundation of Health Research research unit infrastructure support grant competition and obtained funding support to TEK TIC of \$200,000 per year for four years starting in July 2006. We were also successful in the 2006 Canadian Institutes of Health Research Aboriginal Health Human Resources in Community-based Research Operating Grant competition and obtained funding support of \$100,000 per year for three years to carry out eLearning research in rural aboriginal communities. These two grant funding, in addition to research funding already in place, will stand TEK TIC in good stead to build on these early successes to firmly establish our unit over the next three years towards self sustainability.

I am therefore confident that, with the support of the first three years of funding from UBC Academic Provost, Faculty of Medicine and College of Health Disciplines, we will be able to successfully launch TEK TIC, and also achieve financial independence and sustainability through grant competitiveness, capacity building initiatives towards education and research training, and increasing collaboration with health and governmental agencies downstream.

## **VI. Conclusion**

Academically, clinically, and politically, now is the right time to invest in the implementation, research and development in technology enabled learning for health professionals. UBC is in an optimal position to take leadership in establishing such a centre to build capacity, carry out training, and stimulate research in this area. Setting up the UBC TEK TIC and providing this centre with appropriate space to facilitate coordination and exchange at this highly opportune juncture will accelerate the adaptation of ICT into health professionals' education, translational research to lead in this endeavour provincial, nationally, and internationally, and definitively provide influence and insights in the way health professionals and health systems will practice e-health in the future.

## Appendix I

### TEKT Related Research Grants – Year 2005

**Jarvis-Selinger S, Ho K et al.** Community Learning Centres: A Model of Community Engagement in Health, Education, and Training. Canadian Institutes of Health Research Aboriginal Health 2006 Human Resources in Community-based Research Operating Grant competition. \$300,000/3 yrs. Awarded 6/2006.

**Ho K et al.** Technology Enabled Knowledge Translation Investigative Centre. Michael Smith Foundation for Health Research 2006 team grant competition. \$800,000/4 yrs. Awarded 6.2006.

**Ho K & Woollard B (co-PI).** Collaboration in First Nations' Health Through Interprofessional Training and Community Engagement. BC Academic Health Council. \$148,400/1 yr. Awarded 12/2005.

**Ho K & Jarvis-Selinger S (co-PI).** Literature review: identification of best practices for evidence-based telehealth in B.C. \$24,775/6 mo. Awarded 07/2005.

**Fedeles M & Ho K (co-PI).** Design and Development of a PDA-Based Clinical Practice Guidelines Management System for Clinical Use at the Point of Care. BC Medical Association. \$75,150/1yr. Awarded 11/2005.

**Sheppard J (PI) <Ho K, co-investigator>.** Making Healthcare Safer: Evaluating the Effect of On-line Learning on Infection Control Practice among Healthcare Workers. Canadian Institutes of Health Research. \$101,000/3 yr. Awarded 10/2005.

**Fedeles M & Ho K (co-PI).** Clinical Information at the Point of Care Project: Development of a PDA Tool for Easy Access to Guidelines for the Management of Cancer. BC Cancer Agency. \$123,000/1 yr. Awarded 07/2005.

**Fedeles M & Ho K (co-PI).** The Primary Care Renewal Initiative – Professional Quality Improvement Days: Quality Assurance. BC Medical Association. \$65,862/1yr. Awarded 06/2005.

**Ho K (PI).** Academia's Influence on Cultural Change in Interprofessional Education. Health Canada IECPCP. \$123,500/1 yr. Awarded 08/2005.

**Ho K (PI).** Essentials in Health Informatics for Life Sciences & Computer Science Students Summer & e-learning Course. UBC TLEF. \$44,000/1 yr. Awarded 04/2005.

**Ho K (PI).** Patient Centred Wound Care Management via Telemedicine for Aboriginal Communities in B.C.: Pixalere Approach. BC Ministry of Health Aboriginal Program. \$49,490/1 yr. Awarded 06/2005.

**Novak Lauscher H & Ho K (co-PI).** Cancer Information at Point of Care Initiative: Primary Care Physicians Needs Assessment. BC Cancer Agency. \$39,200/1yr. Awarded March 2005.

**Ho K, Jarvis-Selinger S, Fedeles M, et al (PI).** Technology Enabled Academic Detailing versus Academic Detailing in Diabetes Management: Supporting Knowledge Translation in Appropriate Treatment Through an Interdisciplinary Approach. Canadian Institutes of Health Research. \$300,000/3 yrs. Awarded 02/2005.

For a full list of research grants related to technology enabled knowledge translation from UBC CPD-KT, which formally started its research efforts since 2001, please contact Kendall Ho at [kho@cpdkt.ubc.ca](mailto:kho@cpdkt.ubc.ca).