KUSP: Developing the Science behind Knowledge Translation

In this issue, we present the third in a series of profiles of nurse-led research units in Canada with a conversation between Dorothy Pringle (DP) and Carole Estabrooks (CE) who leads the Knowledge Utilization Studies Program based in the Faculty of Nursing in the University of Alberta.

Dr. Carole A. Estabrooks

Dr. Carole A. Estabrooks is a professor in the Faculty of Nursing at the University of Alberta as well as principal investigator of the Knowledge Utilization Studies Program (KUSP). She also holds a Canada Research Chair in Knowledge Translation. Dr. Estabrooks is affiliated with several associations and foundations including the AARN, Sigma Theta Tau, Canadian Association of Nurse Researchers and the Institute for Clinical Evaluative Sciences (ICES). She supervises students at all levels including Undergraduate, Masters, PhD and Postdoctoral Fellows and teaches INT D690 *Topics in Knowledge Utilization*. Her research interests focus on knowledge utilization and its various components. She is the recipient of a number of awards and achievements such as the Alumni Horizon Award (2002), CIHR/MRC Health Scholar (2000-2005) and AHFMR Population Health Investigator (2000-2003). Dr. Estabrooks is originally from New Brunswick, completing her undergraduate work at the University of New Brunswick.

DP: How was KUSP established, and where did the name come from?
CE: The origins were fairly informal. In about 2000, I needed a short URL address, so several of my students came to me with the acronym KUSP – Knowledge Utilization Studies in Practice. We put the URL on the web and printed signs for the workspace – the name stuck. Now KUSP is a fairly well-established entity with physical space and good support from the faculty albeit with no ongoing operational monies – those come entirely from operating grants.

DP: What about funding to support KUSP?
CE: In the beginning, I had a three-year establishment grant from the Alberta Heritage Foundation for Medical Research (AHFMR). At the time, I was a population health investigator. I also held a national grant within NHRDP, and so was able to use my establishment grant for infrastructure.

DP: What about now? What supports KUSP?
CE: KUSP is sustained in the great Canadian research way, cobbling together resources here and there. The staff in the unit are funded through operating grants. The revenue line, that is, operating grants, has to be continually fed as it is the only available revenue.

I did my post doc at Ontario's Institute for Clinical Evaluative Studies (ICES) and tried to modify aspects of that model, but that model doesn't fit very well into an academic department. ICES is an independent institution with considerable resources not usually available to academic departments and, in addition, a significant *critical mass* of investigators, not to mention the several layers of support to those investigators. What I did learn while doing my post-doctoral work was how vital infrastructure is to successful research.

I built KUSP in the beginning without much thought to sustainability, but sustainability has become the major issue with which I have to contend. I had a formal review done at one point and the major issue emerging from that review was how to create something that is sustainable with no predictable source of ongoing funding – in an academic unit with at least both teaching and research mandates. In a university department with 1,400 undergraduates, teaching occupies a lot of space on the agenda.

DP: Please describe KUSP 's research focus.
CE: The line of inquiry is knowledge translation – developing the science underpinning knowledge translation or evidence-based practices. Knowledge translation is a multidisciplinary field reaching well beyond the health sciences. To work productively within it requires a command of several literatures and a variety of approaches and theories – so I do not think of it as a nursing area of study per se.

Because nursing is such a large care provider in the healthcare system, and because of my own training; however, my research has had a significant focus on nursing. The majority of nursing services are delivered within an organizational context and consequently my research has become increasingly organizationally focused, although we are not organizational theorists.

Developing theory in knowledge translation has always been my goal but that is not in itself an easy goal with which to work; nor is it intuitively appealing to potential graduate students or funding agencies. It has taken me nearly a decade to sort through how to move from that singular line of inquiry and add another axis to the work. The major axis that we've added is facility based residential long-term care – knowledge translation in elder care. It is a relatively unstudied area in terms of knowledge translation. It also opens up many other possibilities, for example, safety and quality have a lot in common with knowledge translation in long-term care settings. We have been doing work in acute care hospitals for some time and the long-term care sector creates an opportunity for important comparative work.

So, in the beginning the research was just about knowledge translation. But as I have matured and evolved, it has become more affiliated with practical problems and issues that matter to people. It is also easier for me personally with these additional axes because, like most health researchers, I want to make a difference. Working in long term care I believe I can make some difference – it is hard to hang on to the belief that you are doing that when your energies are focused predominately on knowledge development and theory.

I've had to make some difficult decisions over this last 10 years in terms of how different projects and grants were running. Sometimes operating grants were not renewed or new initiatives were not successful and staff had to be laid off – this is a costly activity although all too common a one among Canadian researchers. When it happens you lose valuable staff, costly investments in training and institutional memory; much more worrisome in the long run is the toll this model exacts on individual investigators. However, without research infrastructure to fund core activities in health services and other research areas this is inevitable. I have been fortunate in that I have been able to secure two program grants that provide some degree of stability. The first one from 2002 to 2007 focused on theory development and testing; the second form 2007 to 2012 is a renewal of that program. This second program is called *Translating Research in Elder Care* (TREC). This is a large multi-method and multi-level program with several embedded projects. In it we are investigating the role of organizational context and its affect on residents' health outcomes, as well as, provider and some system outcomes in the three prairie provinces.

DP: Who are you working with, and in what areas are they working?
CE: I'm the primary and principal investigator, and while I work with numerous other investigators, most of them wouldn't consider themselves affiliates of KUSP. They are distributed throughout Manitoba, Saskatchewan and Alberta, with a few in Ontario. In the unit itself, I have two directly affiliated co-investigators who are former post-doctoral and doctoral fellows and two other somewhat less closely affiliated colleagues. Besides the theoretical and the research work, the other component I have and continue to concentrate on has been capacity-building. This is a major problem for most contemporary nurse investigators. There aren't a lot of people in nursing who necessarily want to or are able to work in research full time – even fewer, if you only count people who are interested in knowledge translation research. Coupled with the demographic challenges we face, it makes developing a critical mass of investigators difficult. I am focusing on doctoral and post-doctoral training because I think this is where we will get the best return on investment when we are considering building research capacity. In particular, I think post-doctoral training is an underdeveloped area in nursing. In no small part due to the nature of my field it has been challenging to create in-faculty synergies. External affiliations have been easier to establish although more challenging to maintain because of distances and the challenges of cross-disciplinary work.

DP: What staff work in the unit?
CE: The unit itself is populated by a handful of staff. At any time there are between three and eight staff. I probably am able to keep an average of four core staff through different funding. I also have a number of trainees all of whom have extramural funding. Most commonly that funding would be CIHR or AHFMR funding. Occasionally I have a Killam-funded trainee and sometimes post docs are CHSRF funded. In 2008, for the first time, I will have what I would consider a critical mass of three and quite possibly four or five post-doctoral trainees. A major concern for me continues to be how to create sustainability so that the resources that the Faculty and I have put into it do not evaporate. We need to find models that are sustainable and create capacity beyond the students I've trained who will continue to make a contribution. How does one create something that endures well past one's own working career?

DP: That question will interest many people who are facing the same dilemma.
CE: The best analogy is a three-legged stool: I've got a leg with TREC and other operating grants (the research line). I have another leg with the space and in-kind contributions from the faculty. If I add another leg, like a research infrastructure or a training centre, would the stool still stand on its own? The leg of the stool that I'm struggling with is infrastructure support.

Infrastructure on the order of $150,000 to $250,000 a year is about what a modestly sized unit requires. For example, one of the positions that I've protected over time is an information/scientific officer who does a lot of the health information and knowledge management work and also supports application processes. That position is difficult to keep funded from operating grants. It is also difficult to keep your key or lead administrative position funded without infrastructure support. It is also difficult to find money for recruitment and for top-ups. Currently our faculty is working on an approach to assist with topping up post-doctoral fellows for example. As well, high caliber doctoral students are now competitive for training positions and are being offered substantial recruitment packages. Finally, one of the most pressing needs and one that infrastructure support assists with is what I call *bridging and seeding*. Successful investigators need mechanisms and resources to bridge them through troughs in operating grant funding and they need monies to seed new work. It costs money to secure grants especially large and multi-year grants of the programmatic or team kind. Nursing has, I think, been slow to grasp this and to begin to find solutions.

DP: What role does interdisciplinary work play in KUSP?
CE: The field I am in is by definition diffuse and interdisciplinary, so the literature itself resides in a dozen fields. One of the challenges with interdisciplinary collaborations is the model you use to work. The reward and incentive systems, the actual object of interest for different disciplines outside the health sciences, is quite different. It's not as hard to work within the health sciences. But if you look, for example, to researchers in organizational studies or psychology or the humanities, their object of interest is different. This is really noticeable around things like health outcomes. Health outcomes are what we are working to improve in health. Other academic disciplines may be concerned with knowledge development or for developing a theoretical line. I have sometimes found it challenging to always be able to work as extensively as I would like with the non-health disciplines.

It's important to work on an interdisciplinary basis but it is much harder than the rhetoric would lead you to believe. So, for example, some non-health disciplines have little or no interest in publishing in health journals. It does not matter if the journal has a double-digit impact factor. They just do not care, because it doesn't advance their reward and incentive processes within their discipline or faculty. So there are issues at that level. There are also, for example, different practices and cultures around data sharing and how you work with students. At the same time working with different disciplines is both necessary and rewarding. You cannot be an expert in everything, organizational theory, health psychology or informatics for example, and those investigators bring the richness of expertise.

DP: How do you approach the training, both of the post-doctoral fellows and the doctoral students within your program?

CE: My belief is that training, especially at the doctoral level, should use an apprenticeship model. But it's increasingly challenging to do that in Canada with pressures to produce more graduates.

I have worked primarily with people who study with me full-time in Edmonton in an apprenticeship model. I expect them to publish with me and to increasingly develop their own publication records. They are also part of grant-writing and data collection; they're part of the entire process. The more senior post-doctoral and doctoral trainees sit in on negotiations around authorship, data access and budgeting, so that they learn the business side of research. My approach has been for a long time now to not do much solo writing. I think it is better to write in small groups, although it takes longer. In the end, it probably makes a better contribution. It also teaches students how to keep an active publication record, because one of the real challenges is to keep the research output side up. It is one thing to obtain grants quite another to publish consistently.

This was one of the most important disciplines I learned at ICES. They did not close the file until the paper was in press. This came down from David Naylor, whose own publication record is prodigious – there was a clear mantra, "The research is not done until it is published." Files were not closed until the paper was *in press*. That was a really important lesson at a time when I was anxious about my own ability. I had done a traditional dissertation, and nearly died trying to get the first name paper out of it because at the time it was (to me) such an emotional and cognitive burden to move from a dissertation to a published paper. So, as a consequence and because I think it is a better way in today's world to do it – all my students do paper-based theses and dissertations. It takes more up-front work and is a little bit more challenging in a number of ways. But the student learns how to publish and they come out of their doctoral program with strong publication records.

DP: How would you describe your leadership style?

CE: What I believe I do best is see the big picture, set the agenda – implementation is not my favorite part especially after a thing is well launched. To be honest, I sometimes default to much more operational things – much more than I want to. That is in part to do with the critical mass I have, or don't have, at any given time. If you do not have enough senior people, both on the project side and on either the faculty or the trainee side, you default to that. And it is likely hard for nurses to climb out of the operational world – we were trained in detail, the observation and interpretation of behavioral and physiological detail is a mark of a good clini-

cian. So it is a tension I have to manage all the time. I do prefer though to set the high-level agenda. I am reasonably participative, but I do not think that consensus is a very efficient way to do everything.

DP: Have you been influenced by other with whom you have worked?
CE: Margaret G. McPhedran, the dean of my undergraduate nursing program when I began it was without question the most influential individual in my professional life. I spent hours listening to her regale me with stories of *real* nursing (e.g., before antibiotics) and was deeply influenced by this woman's image of what real nursing indeed was – by her blunt (often painful) assessments of me, by the kindness and generosity of spirit she showed me, the (usually) gentle persistence with which she relentlessly urged me to continue my studies, and most importantly I learned as much from her failings as her successes. She was also the finest didactic teacher I have ever heard.

I did my master's work with Jan Morse. She taught me that methods are just tools, they are not ideologies. She also taught me to think programmatically although I did not realize it at the time. I learned a lot about making things human from my doctoral supervisor Phyllis Giovannetti, about the importance of making the explicit discussions of scientific integrity – and sadly, as I grow older I realize that I rarely understood the pressures of the academy or those she was under when I was her doctoral student. I've been influenced by Lesley Degner who has given me sage advice when it was most needed; by Peter Norton who has pushed me gently toward a safety and quality agenda, from whom I have learned much more than I have given and with whom I truly enjoy hard intellectual work; by Dot Pringle who has listened and advised (to whom I will listen), who has always made time, who has been there in my darkest professional hours (those being the failures), who cares deeply about the elderly; by Alison Kitson who is absolutely fearless about thinking big; by Chuck Humphrey with whom I have worked for nearly 20 years and who has taught me about data stewardship and sharing and having fun doing it and about friendship; by Jack Williams whose generosity has warmed my heart many times over; and by my colleagues in the UK and in Sweden.

DP: What has the University of Alberta gotten from KUSP? What's the return on investment?
CE: Ah, the return on investment. I have been invited to participate in a European Union bid and that fits with the university's international focus on several fronts. They want us to be competitive in Europe and in other places. I bring high-quality trainees, I have been successful at securing grants, I publish a lot – I have been successful. This goes to reputation for the university at large and for the

faculty of Nursing. They get a model that they may or may not want to emulate or see replicated. They also get experience. I sit on a lot of review boards, so I bring that kind of insider knowledge back in as another insight into research funding in Canada.

DP: You've mentioned capacity-building and sustainability. Have there been other challenges?
CE: Another challenge is that nursing research is often not read by others – despite the current state of on line library databases. Other professionals often will not read nursing literature. Additionally, we have limited nursing journals who publish sophisticated, high-quality research. There are probably only two of three top flight research oriented journals in nursing – this is not enough. Also, you do not see other disciplines publishing in our journals. This is also problematic; we surely publish in their journals. A major issue for me now is publishing outside the field while maintaining activity inside the field. It is more challenging to publish in high quality journals outside of nursing – and this is good for us. We all want others to read the research and cite it, because we are doing good work. This wider readership should not be only a factor of publishing external to nursing – our science should be good enough and our journals strong enough that it is just read!

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