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researchfanshawe

Putting knowledge to work



Applying humanity: research for a better world

What is “social
innovation”?

How to write a
research paper

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You've heard it from us, now get a student's perspective

Cover photo (from left to right): collaborators Dr. Jacqueline Specht, Western University; Claire Zeijdel, Bridges Canada; Fanshawe's Prof. Anne Hill, and Judy Coulter, Principal of Blessed Sacrament Catholic School, London.



Q & A

A few minutes with... Pam McLaughlin

Q. *The Faculty of Health Sciences and Human Services has traditionally been one of the most active areas for applied research and scholarship at Fanshawe College. Can you give us an overview of the types of projects undertaken in your Faculty?*

A. Innovation in practice is a very clear direction for us. Over the years, faculty have engaged in a number of projects in the areas of interprofessional education and practice, assistive technology for learning, hand hygiene, nursing education, simulation, early childhood education, autism and youth issues. People in our Faculty work across institutions, with acute care and community organizations, and school boards where we engage in academic research and community-based involvement to support innovation and practice.

Q. *How important is scholarly activity to your area? Why?*

A. Very. First, participation in applied research by nursing faculty is important to maintain our accreditation for our collaborative Bachelor of Science in Nursing (BScN) program with Western University. The BScN program is doing academic research, not just innovation. We do a lot of work that involves examining practice and how we educate students. We are engaged in a number of initiatives, publications and presentations with schools as far away as Australia. We also are co-sponsoring and participating in the Transcending Borders: Towards Global Health conference (international health, education, marginalized communities and ecohealth) with Western's Schulich School of Medicine & Dentistry (April 29-29, London Convention Centre, registration website at transcendingborders.ca/index.php). For example, the child and youth network, led by the city of London, is a tremendous example of community development (www.london.ca/d.aspx?s=/Child_Youth_Network/default.htm). Fanshawe provides integral partnership for the work [integration of social and community services, poverty, literacy, healthy eating and exercise], including involvement in system reengineering. We also are working with a local social innovation expert to explore the use of technology to support community development. Engagement in these types of projects solidifies theory and practice.

Q. *How would you like to see applied research and scholarship evolve in FHSHS over time?*

A. Internally, we are developing an interprofessional charter for our Faculty and updating it to become broader than the medical model we've used in the past. Language will be focused on community development. We hope to unify faculty -- and potentially collaborate with others across the College -- because Fanshawe can be a large player in community issues such as ending poverty. We will engage students in meaningful projects that build new skills and increase their employability. On the project front, we have been in communication, for example, with the simulation unit at the London Health Sciences Centre (LHSC).

There is a tremendous amount of work we can do with LHSC through the use of simulation to support and improve our ability to achieve quality parameters in health care. One example might be in the area of infection rates. Given the financial demands on the health care and social services systems these days, Ontario is looking to more illness prevention measures and community-based initiatives. Regardless of the setting - institutional-based or community-based - when we join with community partners in this work, we can have significant impact. Policy typically informs practice; perhaps practice might now inform policy.

Q. *How does engagement in applied research benefit your Faculty?*

A. What we are trying to accomplish is to both build internal capacity and establish partnerships in sectors in which we can contribute. All of our programs are fundamentally about making connections and helping people. Fanshawe is well-positioned to do so as educators, and as a community-driven organization. Another benefit is that the work is integrated into curriculum so it enhances student learning and provides a richness not available to faculty or students in a typical college program. Right now, for example, we are involved with a school in Liberia, Costa Rica (see page 8 for details) where students from our Child and Youth Worker, Early Childhood Education and Practical Nursing programs are working on the next phase of an interprofessional community development program [funded by Fanshawe's Research Innovation Fund].

Q. *How does it impact students?*

A. Perhaps the greatest benefit students get is the realization that they can make a difference. In the Costa Rican project, the students' work actually changed their practice. It was a transformative experience for many of them when they realized that helping to mobilize a community could really have an impact. That's the power of contribution. And once you've seen it, you can't go back.

Pam McLaughlin is the Dean of Health Sciences and Human Services at Fanshawe College.

newsflash



Dan Douglas

New Acting Dean among changes at ARI

Dan Douglas will serve as Acting

Dean of Applied Research and Innovation for a six-month term, Senior Vice-President Academic Lane Trotter has announced.

An architectural technologist and a graduate of Fanshawe College and Western University, Douglas joined the School of Building Technology 25 years ago after working with a consulting engineering firm. He has served in a variety of capacities at the College, including co-op consultant, professor, program coordinator, Chair and as Acting Dean, Faculty of Technology.

He has special interests in historical buildings and sustainable building practices, and has been instrumental in advancing sustainable initiatives at Fanshawe in both curriculum and practice. In particular, he has been involved with applied research and innovation within the School of Building Technology and within the Faculty of Technology. He is a past member of the executive council of the Association of Architectural Technologists of Ontario (AATO) and a Member of the Association of Architectural Technologists of Ontario (MAATO).

Douglas replaces outgoing Dean Greg Weiler. Weiler left Fanshawe in January to take a position as Director, Health Research Services, Faculty of Health Sciences, at McMaster University. Weiler was Fanshawe's first applied research dean and was appointed when the department was established in 2005.

Meanwhile, 2011 was a year of changes for the department. Its name was shortened to Applied Research and Innovation (ARI). The office moved to T3010 (third floor of T Building facing Oxford Street, London Campus). ARI's web pages can now found at www.fanshawec.ca/services/research. If you're interested in applied research, contact us!



**NSERC
CRSNG**

Companies, collaborators benefit from new equipment consultant and mentor

Fanshawe College's ability to help area companies with applied research, design, development and product testing has received a boost thanks to four new equipment grants from the federal government. The College has been awarded a total of \$333,209 to purchase a solar simulator, 3D scanner, and electromagnetic compatibility (EMC), acoustical (noise) and vibration measuring equipment. The equipment will be used for current and future innovation projects with companies in the region.

CSEE is an applied research centre of expertise that focuses on renewable energy technologies, green manufacturing and sustainable buildings/ infrastructure. Funded in late 2009 by a five-year College & Community Innovation Program (CCI) grant, CSEE is engaged in multiple projects with industry including renewable energy management, solar panels and arrays, solar-powered small utility vehicles, solar shading, construction and sustainable building design. This latest funding comes from CCI's Applied Research Tools & Instruments (ARTI) program. CCI programs are administered by the Natural Sciences and Engineering Council of Canada (NSERC)

New online resources for researchers at library

Research guides, publications and other materials are now available to researchers online thanks to Library and Media Services. The new Faculty Research guide pages contain a wealth of information, including links to virtual libraries, websites and research-related videos, style and proposal-writing guidelines, how-tos, and books on conducting research that can be borrowed through the London Campus library. There also is a link to Applied Research and Innovation (ARI), Fanshawe's research office. The site can be viewed at <http://fanshawec.libguides.com/facultyresearch>



Liz Lorruso and Carol Butler

Pair receives accolades for interprofessional education work

Liz Lorruso (left) School of Health Sciences, and Carol Butler, School of Nursing, were presented with an Interprofessional Leadership Award in March for outstanding involvement in advancing interprofessionalism in health care by the London Interprofessional Health Care Students' Association (LIHSA). LIHSA is a student group that is passionate about interprofessional education and collaborative practice. It represents students from Western University and Fanshawe College who are enrolled in, or considering health-related programs. Lorruso is well known for her work in promoting interprofessional education in the Medical Radiation Technology and Magnetic Resonance Imaging programs. Butler is a champion for interprofessional simulation and faculty education in simulation technology and the process of interprofessional teaching.

Fanshawe College Research Ethics Board Notice

Fanshawe College's Research Ethics Board (REB) meets on the second Thursday of each month, from September to June, to review applications. The deadline for submitting applications is 10 days prior to each meeting. Applications received after this deadline will not be reviewed. Application forms are available on the ARI website at:

<http://www.fanshawec.ca/services/research/research-ethics-board/application-information>

Rosenkrantz joins ARI as research consultant



Otte Rosenkrantz

Otte Rosenkrantz has been appointed as the new ARI research consultant, succeeding Dr. Roger Fisher. Rosenkrantz joined Fanshawe College in 1997, as part-time faculty in the Corporate Communication and Public Relations (CCPR) graduate certificate program, and was hired full-time in 2000. In addition to teaching, Rosenkrantz has acted as interim coordinator for the CCPR program, as well as coordinator for the Technical Writing program and General Education.

In 2008, he was seconded to the Centre for Academic Excellence as a curriculum consultant, where he was responsible for conducting

program reviews, new program development and mentoring faculty interested in curriculum coaching. He also co-facilitated the Orientation to College Teaching workshops, in addition to running professional development workshops on teaching and writing. In his capacity as Chair of the Research Ethics Board, a role he took on in 2010, he contributed to development of research strategy at Fanshawe. Currently working on his PhD, Rosenkrantz's dissertation focuses on the development of a policy framework for allowing college faculty to engage in advanced applied research and innovation.

Before joining Fanshawe, Rosenkrantz spent 15 years as a journalist, author and communications consultant. He is a graduate of Fanshawe College (Child Care Worker) and Western University (HBA History). He also has a Masters of History from Western, as well as a Masters of Education in Curriculum Development from the University of Toronto.



Retired researcher named Professor Emeritus

Dr. Roger Fisher, recently retired research consultant in Applied Research and Innovation (ARI), was named a Professor Emeritus in November.

An educator in Canada for over 35 years, Fisher's doctoral thesis established a framework for building research capacity at Canadian colleges, and his contribution has been recognized on a national scale by a wide range of institutions dedicated to building research cultures at Canadian colleges.

His significant and often cited research work has been supported by Industry Canada, the Canadian Council on Learning, Colleges Ontario, the Association of Canadian Community Colleges, and the Higher Education Council of Ontario.

Fisher authored Ontario's first approved college certification program in college teaching, a textbook on best practices in college teaching, co-authored a study of language programs at Ontario colleges, conducted a national study involving 2,400 college faculty, and undertook attrition research involving more than 6,500 college students.

Fisher also made substantial contributions to Fanshawe's Research Ethics Board. He will continue to represent Fanshawe as a contributor to provincial, national, and international organizations supporting college education and research.

Fisher is pictured with ARI Research Grants Administrator Jodie Firby (left) and Lynne Blunt, Assistant to the Dean ARI.

The REB schedule for the remainder 2011-2012 academic year is:

<i>Deadline for Submissions</i>	<i>REB Meeting</i>
<i>Monday, April 2, 2012</i>	<i>Thursday, April 12, 2012</i>
<i>Monday, April 30, 2012</i>	<i>Thursday, May 10, 2012</i>
<i>Monday, June 4, 2012</i>	<i>Thursday, June 14, 2012</i>

Submitted applications must be complete, including relevant supporting documents such as Letters of Informed Consent, survey questionnaires, etc. Please submit one (1) signed hard copy, and one (1) electronic copy of completed applications to:

Lynne Blunt, REB Coordinator, Applied Research and Innovation (ARI)
 Fanshawe College, Room T3010,
 1001 Fanshawe College Blvd., London, ON N5Y 5R6
 Telephone: 519-452-4430 x4703 lblunt@fanshawec.ca

research 101

HOW TO WRITE A RESEARCH PAPER

Research papers are written so that investigators can share their results and ideas with peers and others. Research papers provide several specific types of information, such as:

- What was the research question(s)?
- Why did the investigator choose to explore it?
- How did the researcher do the research (i.e., methodology)?
- What data was collected?
- What do the data mean?
- What conclusions can be drawn from this research project?

And, in the case of applied research, can this knowledge be applied to achieve some benefit? For whom? How?

To be sure that all of this information is in every paper, many researchers use a standard outline for their writing. This outline is sometimes called the “IMRAD” format and has five parts:

1. Introduction (I)
2. Materials and Methods (M)
3. Results (R)
4. Analysis (A)
5. Discussion or Conclusion (D)

Introduction (I)

The introduction section explains why you decided to conduct your research. It contains background and rationale for your project. For example: What questions are you trying to answer? What information about previous research or existing knowledge do you have? How did the existing knowledge help you decide what to do in your own research? What gaps in knowledge did your project fill? What was the purpose of the project?

Materials and Methods (M)

The materials and methods section provides a clear description of exactly what you did and how you did it. What methods did you use to collect the data? What kinds of data did you record? How did you record your data? You should provide enough information so that other people can understand what you did and can duplicate your work.

Results (R)

The results section presents your data. Content will vary depending upon the methodology or methodologies you use, e.g., surveys, focus groups, experiments, observation, etc. The results section should match your materials and methods section. That is, if you present temperature data in the results section, then the materials and methods section should say when and how you measured temperature. If you explain in the materials and methods section that you planned to conduct a survey, the results section should show how many people were surveyed, how many actually responded, and the results.

Analysis (A)

The analysis section says what the results mean. Many researchers confuse the results section and analysis section. The results section contains the data themselves—the specific numbers, responses or observations you recorded. The analysis section explains the relationships seen in these data. Patterns that you discovered in the results section are described in the analysis section.

Discussion and Conclusion (D)

The Discussion section answers the questions asked in the introduction. The discussion section reports the conclusions of your study by answering the question(s) asked in the introduction. For example: Did you discover what you thought you would find? Were the results different from what you expected? What have you learned from your analysis? How can this knowledge be applied to a situation? The discussion section also is the place to put questions that need to be answered by future research studies. You may have answered the big questions you started with, but now the answers lead to new questions. Put those new questions here, in the discussion.

Once you have written all these sections— I, M, R, A, and D — go back and check your work to see if everything is there, if it's in the right order, and if it makes sense.

You may have answered the big questions you started with, but now the answers lead to new questions...

*Adapted by Leslie McIntosh from **How to Write a Scientific Paper** by Dr. Bruce Lowenstein, professor of science communication at Cornell University. Used with permission.*

Simulations help students put theory into practice

By John Huff



Steve Vaughn was in serious trouble.

He was in the hospital with a tracheostomy tube in his throat, and when two respiratory therapists came in to change it, his blood pressure and heart rate dropped, suddenly and alarmingly. His therapists called a doctor and between the three of them, they managed to restore Steve's stats and get his tube changed.

It was a tense few minutes, but Steve survived. Fortunately, Steve feels no real pain. He's a very sophisticated mannequin and his therapists, Fanshawe College students, were participating in a simulation as part of their program. They passed the test, which means they'll be ready for a similar scenario when they have responsibility for live patients in the real world.

Over the past five years, simulation has become a big part of the learning experience for students in many of Fanshawe's health sciences and nursing programs. The College has developed learning labs – including labs for nursing, MRI, X-ray, and surgery – that are outfitted with professional equipment to simulate working conditions in hospitals and other care

centres. Carol Butler, Coordinator of Clinical Learning and Simulation, says students really enjoy the hands-on approach that simulations offer.

"I think simulations help them put it all together," Butler says. "They might learn something in theory, but in a simulation they actually have to put it into practice. We set up all of the props, so there's a supply cart and a medication cart and that kind of thing, so it's as realistic as possible. It's one of the few places that students can come and make

their own decisions. They get to play their own role without someone telling them what to do. They can make mistakes here and it's okay."



Key to the simulation experience is debriefing, which happens after each exercise is complete. Simulations are timed and viewed as part of the debriefing process, giving students a chance to see themselves in action and discuss what worked and what didn't.

Steve Vaughn (one of my aliases) and several other mannequins add a huge element of authenticity to the various scenarios. As a high fidelity mannequin, he has a programmable pulse, different breath and bowel sounds, a jaw that can be adjusted for intubation practice, a bladder that can be filled and emptied, and a wide variety of other features. He can even "receive" medications during surgical simulations through a built-in radio transmitter. Instructors use speakers and voice changing software to speak for him when the simulation calls for it.

While the simulations are definitely instructive for students, Butler says they also inform teachers and program coordinators.

"Simulation points out gaps in the curriculum, as well as things that people haven't learned properly," she says. "We did second-year practical nursing simulations that involved shortness of breath, and we found that the students didn't know very much about oxygen. If you do a whole group of students and some of them have learned it, but then others haven't, you can zero in on those students."

As Fanshawe continues to develop its labs and add more equipment, simulation will only keep growing as a feature of health sciences programs. Last year, students participated in more than 500 simulations, reporting very high levels of satisfaction with the experience and its value to their education.

"They love it," Butler says. "I collect a lot of satisfaction surveys and I do a lot of reports about how much the students like it and the results are always really positive. I think they really learn something that they see as meaningful."



Anatomy of a simulation lab

Visiting one of Fanshawe's health sciences and nursing labs is like walking onto the set for a television medical drama. They look like the real thing, from the fully functional headwalls and professional beds in the main nursing lab to the MRI lab, which features a very convincing MRI simulator.

Look closely and you might even see patients under the covers – mannequins of varying sophistication that play starring roles in simulations for students in Nursing, Practical Nursing, Respiratory Therapy, Anesthesia Assistant, and other related programs.

As with all of Fanshawe's programs, health sciences programs focus on practical, real world learning. Students in Medical Radiation Technology can scan a model with real bones on a traditional film scanner or more modern digital scanner. In the surgery lab and other rooms, students work with real monitors that keep tabs on mannequins that have programmable heart rate, blood pressure, pulse, and other vital signs. Students also use genuine tools of their trade – needles, tubes, stretchers, supply carts, a ceiling lift, and just about anything else they will find in clinical settings.

Several of the labs are also equipped with video cameras and control rooms where instructors use computers and software to manage student simulations. The most advanced mannequins at the College are capable of exhibiting a wide range of symptoms, all of which can be manipulated behind the scenes depending on the scenario. They can also be used for practicing intravenous line insertion and even defibrillation. Voice changing software allows instructors to speak for the mannequins as if they were real patients. The video cameras capture simulations from different angles so students can review their work as part of the debriefing process.

Of course, students in programs like Advanced Care Paramedic and Personal Support Worker might find themselves working in unusual places. Those students can run simulations in a room that is laid out like a house or apartment, with small bedrooms and even a kitchen – the ideal place to practice tricky "in the field" scenarios where patients need to be rescued, transported, or treated in difficult positions.



Children in Costa Rica benefit from research, placements

By Simone Graham

La Victoria School is a high-needs priority school in Liberia, Costa Rica, and this school and its children have a special relationship with Fanshawe College. Students from Fanshawe have been travelling to the school for field placements since 2008

In 2011, the placement plans were extended to include a interprofessional research project and involved students from Child and Youth Worker (C&YW), Early Childhood Education (ECE), and the Practical Nursing (PN) programs.

The research project took place in Liberia from February 21 to March 21, 2011 and investigated the impact of interprofessional team. The Fanshawe team consisted of 16 students, two mentors (C&YW graduates who had been to the school before), and Margot Sippel, Human Services, Janice Elliott, Coordinator of International Partnerships and Projects, Shelley Masse, Coordinator, Practical Nursing, Carol Butler, Coordinator - Clinical Learning & Simulation and Hossein Khalili also were involved.

Many children in Liberia struggle daily with serious issues such as sexual abuse, extreme poverty, abandonment, forced child labour, parents with drug addictions, and some live with mothers who are prostitutes (legal in Costa Rica) and see clients in their homes. Fanshawe students worked one-on-one with 70 school children and participated in the pilot study. They helped the children in play and art therapy activities, did health assessments, and introduced skills to cope with low self-esteem and anxiety.

“There are two very important outcomes from the 2011 placements,” explains Sippel. “First, we continue to see that the school children’s behaviours do improve and stick with them, through the work our college students do with them each year. Then this year, we saw some very positive collaborative skills also being developed and measured through the pilot research project. We are finding out ways to better prepare our students to work in interprofessional teams when they enter the workforce.”

“We wanted to promote and measure the beliefs and attitudes towards collaborative interprofessional care, and although we are still analyzing the research results, we can see the placements and the project have had an impact on our students,” says Elliot. Student comments upon completion included: “It is an opportunity to stretch beyond our limits and take on roles we never thought we could,” and, “I don’t think we could have had the impact we did without a team.”

But the comment that Sippel likes the best was, “Okay, we go to the same school but we don’t learn the same stuff.” This was the key. By learning to work together in such a close and immediate setting, the students learned to appreciate each other’s professional points of view as they all worked for the good of each child.



Professors Janice Elliot (left) and Margot Sippel.





Anne Hill

A DREAM TO ‘MAKE A DIFFERENCE’ GUIDES RESEARCHER’S LIFETIME OF WORK

By Leslie McIntosh

It all began with her sister Sherry.

Anne Hill’s applied research on helping learners with disabilities began with a commitment, then a quest – the commitment to support her younger sibling with developmental disabilities learn to read, and a quest for the knowledge that would make that possible.

Hill, a professor in the School of Human Services, is a prolific researcher and one of Fanshawe’s research pioneers. Her work focuses on ways to level the educational “playing field” for students with disabilities through new, innovative teaching strategies, including the use of the latest computer and assistive technology.

“My driving force has always been to make a difference. Growing up, I spent a great deal of time trying to understand why my sister Sherry had so much trouble learning to read and write. My mother ran the Parent Teacher Association at Sherry’s school, providing me with many opportunities to interact with families. This helped me understand the complexity and challenges of making a difference. I thought that if all these students could just read and communicate, their lives would be so much richer. It wasn’t about changing or ‘fixing’ them, but I was pretty sure we could do a much better job of helping them learn. So my driving research interest became literacy.”

Early on Hill recognized that her career goal of becoming an educator could best be achieved within the applied learning environment of a community college. “I have always thought that people on the front lines [in education and elsewhere] could, and do, have the most impact on people’s lives. If we can help these people understand and use the latest evidence-based ideas, they could make the most difference for students.”

When the first Macintosh computers became publically available, she realized they could open up a whole new world for people with disabilities. She wholeheartedly embraced the new technology with the

support of her computer savvy father, an aeronautical engineer who worked on the combustion system for the legendary Avro Canada CF-105 Arrow interceptor aircraft.

“Dad spent a lot of time looking for computer programs that would help my sister learn to read. He also taught me that we all need to share our ideas... he felt his work was built on the shoulders of others and we all learn and work better when we do it together and share our knowledge openly. I guess that’s where I learned to believe in collaboration.”

Following completion of her Master’s degree in Psychology, Hill began working at Fanshawe College. Along the way she got involved with a like-minded group of family members and educators and started the AccessAbility Technology Network (AATN). Recognizing the need to become more knowledgeable about the new field of assistive technology (AT), Hill worked part-time at the College for 10 years and spent the balance of her time taking courses, attending conferences, running conferences and conducting AT training for teachers and community members. That led to a 1997 grant – her first -- that enabled Hill and the AATN group to work with “identified” students at four Ontario school boards.

The collaborative working model “provided valuable insights into dealing with the challenges of effective inclusion of all students”, she says, adding that the project demonstrated that “technology as a tool can enable a wide range of learners to participate meaningfully in learning and social interaction.”

It was while teaching a class in group work that Hill’s determination to find better strategies to enhance student problem solving skills and cognitive behaviour led to her discovery of knowledge building. Dr. Marlene Scardamalia of the Ontario Institute for Studies in Education (part of the University of Toronto) and colleague Carl Bereiter were working with Apple computers and had developed what was then called a Computer-Support Intentional Learning Environment (CSILE), software later known as Knowledge Forum®.

“Wow, a tool that could help students problem solve together and sustain their efforts over time so they could actually solve problems!” A common interest in such new ideas drew Hill to collaborate with Professor Margot Sippel; they went to Toronto and met with Dr. Scardamalia. “It was a life altering experience for us,” explains Hill. That meeting led to the development of Fanshawe’s Educational Assistant Postgraduate program, with Professors Dorota Bugorski and Danielle Renaud, a series of externally funded research projects that probed knowledge building and the use



of AT and computer technology for learners with learning disabilities and acquired brain injuries. Sippel and Hill went on to obtain funding from the Canada Foundation for Innovation, the Ontario Innovation Trust and Human Resources Development Canada’s Office of Learning Technologies.

In 2010, Hill co-organized the third international AT conference in partnership with educational technology company and frequent partner, Bridges Canada. Hill obtained a grant from the Social Sciences and Humanities Research Council of Canada (SSHRC) to fund the research and dissemination portion of the conference. The conference featured a stellar array of AT experts and scholars from major American and Canadian universities. Faculty and students from Fanshawe’s School of Contemporary Media collaborated with Hill and her team to provide live web streaming of conference proceedings →

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and create online content to disseminate the knowledge exchanged at the event.

Hill's research interests also include transferring AT knowledge to teachers and other practitioners, and encouraging adoption of more technology in the classroom.

"I was positive from the time I was 20 that literacy would make an immense difference in Sherry's life. She wanted to read, but her school never attempted to teach her. In university I discovered a then new program called DISTAR, an evidence-based literacy instruction, and suggested Sherry's school use it. Despite polite interest, nothing happened. The theory in those days was that people's brains didn't grow. I remember them telling me that Sherry was 16, and after that point, nobody learned

anything new. I was horrified. We know now from new brain and learning research that this is totally wrong. Our brains are "use it or lose it" devices. We absolutely must consider the kinds of environments into which we are placing children with disabilities," she says.

Hill's philosophy and passion have always been about inclusive education for all people. She is continuing her exploration of AT and augmentative communication. Her latest research project – funded by the Fanshawe College Research Innovation Fund (RIF) – involves multimedia and gaming, through a concept known as "gamification". She continues to strive for a next-generation learning environment, one that supports knowledge building and creation.

"We can only move forward toward solving the big problems of this world, e.g., literacy, global warming, if we have genuine interdisciplinary

collaboration. We currently have many silos filled with well-intentioned people and we have some successes. However, for the next scalable leap, we need easy to use, intuitive tools that enable us to actively engage with each other in a meaningful discourse over time. Not just to share existing knowledge, but to innovate and create new knowledge – a model of continuous improvement of ideas."

Meanwhile, Sherry is working, continuing to learn, and Hill, too, remains steadfast in her goals to help create inclusive learning opportunities for all.



Prof. Janice Elliott (left) and Dr. Yolanda Babenko-Mould

NURSES FROM OUTSIDE CANADA STRUGGLE TO FIT IN

By Simone Graham

Culture, language and customs are hard enough to bridge when just visiting a new country, but imagine a professional nurse moving to Canada and trying to adjust to all that while seeking employment in an acute care hospital setting. This issue is important to consider because internationally educated nurses (IENs) have a role to play in addressing the needs of the Canadian health care system and ongoing critical nursing shortage.

Funded through Fanshawe's Research Innovation Fund (RIF), co-investigators Janice Elliott, a nursing professor at Fanshawe and coordinator of the Bridging for Internationally Educated Nurses (BIEN) program, and Dr. Yolanda Babenko-Mould, Assistant Professor at Western University, examined how BIEN students felt about integrating into a Canadian hospital setting as a learning environment. Qualitative data was collected through individual interviews held after completion of their clinical placement.

"It's a reality that nursing migration happens but there seem to be barriers. We are striving to understand the IEN's experiences so we can better understand their needs and work towards a smoother and more successful integration process in the future," says Babenko-Mould. "There are common themes already developing from our analysis so far."

In general, the current themes fall into four areas, the first being communication issues and language barriers, which manifest in a

number of ways. For example, some IENs find that many staff nurses speak very quickly and use slang or short-form expressions, which can take some getting used to. Given that client safety is directly related to effective communication, an increased understanding of the learning needs of an IEN may enhance overall client care experiences.

IENs say that they feel like they have a "dual identity". Fully-qualified, experienced nurses for years in their home countries, they are often seen and treated here as students, as outsiders by less tolerant colleagues, and thought to have little experience or education, which can be frustrating.

"We can already see that we may need to be building cultural competence among all health-care professionals, so they will handle these interprofessional situations more collaboratively when they interact with IENs," says Elliott.

The fourth theme relates to continuity of nursing staff. It seems clear that the IENs who are on student learning placements from Fanshawe benefit if the nursing staff members they partner with are not always changing. "This gives the IENs and nurses a chance to develop greater mutual trust and understanding over time. In turn, the IEN students then gain greater confidence in their professional nursing knowledge, judgments and skills," adds Babenko-Mould.

ECE STUDY LOOKS AT TEACHING KIDS EMOTIONAL LITERACY

By John Huff

Are you feeling red today?

If you are, you're probably agitated, frustrated, angry, tense, and perhaps even short of breath. No doubt you recognize the symptoms of stress, but do you know what to do about them?

If not, maybe your kids can help.

For the past few years, Fanshawe Early Childhood Education (ECE) professors Jan Blaxall and Janet Foster have been working with the Psychology Foundation of Canada (PFC) to test the effectiveness of a program called Kids Have Stress Too! from an ECE perspective. The program was developed by the PFC in response to alarming trends that suggest today's children are not equipped to handle increasing stress in their day-to-day lives.

Kids Have Stress Too! uses 10 activity toolboxes to help children identify different "red" or stressful emotions and learn strategies like deep breathing or yoga postures to help them calm down. The program was originally designed for elementary school children, but was then adapted for even younger kids based on research that says they are more likely to absorb its principles.

"People are recognizing that people of all ages don't have emotional literacy," Blaxall says. "They don't understand the connection between their internal stress and their external behaviour, and they don't take charge of those feelings. A lot of people just react rather than stopping and getting themselves calm. A lot of the brain research is telling us that the window where the brain is ready to learn that is between zero and six, so if we wait until public school, we have missed a huge part of the window."

While everyone involved agrees that the activities are effective, Blaxall and Foster were asked to find out whether ECEs themselves could pick up the curriculum and use it effectively. Their study was conducted over four semesters as ECE students completed work placements in five different child care centres. With help from a Western University research team, they gathered feedback from ECE students through surveys, case studies, and journals.

Students also were encouraged to develop and try activities that support the various toolboxes.

"We want to teach children that they can have different feelings such as anger, sadness, or worry," Foster says. "We go into different (activities) where they can begin to recognize if it's a big problem or a little problem, and then we have steps to walk through on how to deal with those types of problems. We offer them the different toolboxes and set up the environment to help them have the coping skills."

About 50 students participated in the study as volunteers. The research revealed that ECE students were able to adopt the toolboxes in their teaching, and that they became much more confident in their ability to recognize and manage children who are experiencing stress. Feedback from professional educators and child care centres was also very enthusiastic.

"The thing that was pretty clear very quickly was that it made a difference in the students' understanding of some of the more challenging kids," Blaxall says. "They got the vocabulary to articulate that this is a stressed child or an overwhelmed child, rather than a difficult child. Another thing that was very clear was their awareness of just getting down to the child's level and talking about feelings. They became very skilled at giving kids the vocabulary and we had lots of stories of children who would spontaneously pick up on these strategies."

Those skills will continue to find their way into child care centres in the coming years. Fanshawe is currently the only college that includes Kids Have Stress Too! training for every student in its ECE program.



Jan Blaxall



Janet Foster

New skills development has far reaching implications

By Simone Graham

When a new skill is introduced, it opens eyes, it opens hearts, and it opens up possibilities. That is just what happened during a recent research project made possible through the Research Innovation Fund (RIF) at Fanshawe College. The project was entitled: Out in the Field: Experiencing a Research Journey through an Authentic Community-Based Pilot Project.

Two sets of participants were impacted by this research project, say co-investigators Prof. Carmen Hall and Dr. Kimberly Maich, School of Human Services.

The first impact was on a group of nine Fanshawe College students from two programs: four students from the new Bachelor of Applied Arts in Early Childhood Leadership program, and five students from the Autism & Behavioural Science Graduate Certificate program (which Hall coordinates.) The participants were trained in various aspects of the research project for hands-on experience in conducting authentic research.

The second group impacted was made up of young children with Autism Spectrum Disorder (ASD) who were enrolled in childcare programs in London-Middlesex and Huron-Perth. These preschoolers and their peers were introduced to a new way of interaction - a peer-mediated approach whereby typically-developing children were shown how to model social skills to their peers with ASD.

"It was our supposition that the nine Fanshawe students would gain valuable hands-on research experience through implementing and evaluating the interactions they saw between the preschoolers, so our first task has been to analyze that part of the project," explains Maich. "Then we also have a secondary set of data which speaks to the effectiveness of the peer-mediated model of social skills development among the preschoolers."

While the analysis is ongoing, some trends and outcomes are already obvious. "Our data from the College student participants was collected using pre and post focus groups facilitated by an outside research assistant and then directly transcribed," says Hall. "We wanted to know what they thought about the research process before it started and what they felt they got out of it upon completion."

The initial focus group showed that students expressed anxiety about the whole experience of research. "We learned that we needed to provide additional mentoring to them so they would gain confidence to approach the task," says Maich. "This is valuable to know as we and other researchers set up future research projects involving College students."

The investigators were also surprised that there were two equally strong outcomes within the post focus group commentary. "We expected they would gain technical research skills which they clearly did," says Maich. "But we were surprised by the number of comments related to experiencing personal growth and development throughout the process too."

As for the social skills data collected from the preschooler interactions, preliminary results appear to indicate that peers can make a noticeable impact in influencing social skills development in young children ages 3 to 5 with ASD. "It is very positive, and other childcare sites in the community are already clamouring to be included in future developments," says Hall.

"We have developed a hands-on manual and related promotional material so we can reach more child care providers and show them how to implement a peer-mediated model within their centres too," she says.

Hall and Maich feel that the development of new knowledge like this is critical not only for the preschoolers with ASD who struggle to fit in socially, but also for College students who are getting their first taste of applied research and growing tremendously -- personally and professionally -- in the process.



Dr. Kimberly Maich (left) and Dr. Carmen Hall

project file

The project file features recently-funded and completed projects. Some are funded through Fanshawe College's internal seed funding program, the Research Innovation Fund (RIF). Others are funded from external sources such as the Colleges Ontario Network for Industry Innovation (CONII). For more information about funding, contact ARI at research@fanshawec.ca.



Professors **Dorota Bugorski**, principal investigator (PI), and co-investigator (CI) **Anne Hill, School of Human Services**, have been awarded a grant from Fanshawe's internal Research Innovation Fund (RIF) for a project entitled Thinking at the Centre of Knowledge Creation: Assessment of a Six Hats Thinking Tool. The project focuses on the embedded use of technology in classrooms in order to support students in learning to think.

A team of Fanshawe researchers will tackle the issue of malnourishment and obesity among Costa Rican children in a new project funded by RIF. Prof. **Janice Elliot, School of Nursing** (PI), and CIs -- Practical Nursing program coordinator **Shelley Masse, Prof. Margot Sippel, School of Human Services**, and **School of Design** coordinator **Lee-Ann Sandford** -- will conduct the study at the La Victoria school in Liberia, Costa Rica. Malnutrition and obesity are common in children from low-income and higher income families respectively: the study will explore the meaning of health and healthy lifestyles for a group of Costa Rican children through the use of Photovoice, a research technique that involves having the children take photos of healthy lifestyles. This study is a first step toward developing a health policy for the community. Masters student Amy Bishop, University of Victoria, and Maria de los Angeles Alvarez Brenes, a social worker at La Victoria, also will be part of the research team.

Support staff member **Eleanor Fullick**, multimedia technician (PI), and CI **Prof. Rob Haaf, School of Contemporary Media**, have received two RIF grants for 2012 projects. The first is for a pilot study to investigate the motivational effects of applying gamification principles to curriculum delivery in a college class, and to determine the features of a Web-based system to apply elements such as achievements, points and reward systems and levelling to student activities focused on course curriculum. The pair also received a RIF grant and funding from Colleges Ontario Network for Industry Innovation (CONII) -- with Haaf as PI -- to establish a collaborative venture with the Fusion Youth Centre in Ingersoll. The project will involve training a volunteer group of youth from the Centre in Unity3D, software that will allow the team to build a 3D interactive game that will be sold through App Stores to raise the profile and promote the work of the Centre.

Professors **Rob Haaf** (PI) and co-investigators **Ramon Delgado, John Bennett** and **Eleanor Fullick** -- all of the School of Contemporary Media -- received a CONII grant for an industry-led project with LIVE360. The London-based health and fitness company is working with the School to develop a mobile application targeting health, nutrition and fitness goals within a social media framework. Meanwhile, the four also received a RIF grant to for a large-scale longitudinal

study into technological approaches to improving key SEM parameters (such as program fit and student retention) via a profile-based social media framework that offers accessible career and program information, and contact opportunities with professionals, Fanshawe faculty, staff and students.

Testing of a peer-mediated model for children with Autism Spectrum Disorder (ASD) was the focus of the Camps on TRACKS project. Funded by RIF, Professors **Carmen Hall** (PI) and CI **Dr. Kimberly Maich, School of Human Services**, collaborated with City of London to test a model to increase social interactions between autistic children and typically developing children at city day camps. Maich (PI) and Hall (CI) also received a second grant for a study on the preparedness of Early Childhood Education graduates to participate in all-day kindergarten programs.

Prof. **Anne Hill, School of Human Services**, received a RIF grant for a project involving human services knowledge-building and gamification. The project focuses on creating a storyboard framework for a game to teach college students how to teach early literacy.

Prof. **Hossein Khalili, School of Nursing**, has received RIF funding to study the potential of a conceptual framework for interprofessional education. Khalili will examine development of a dual professional and interprofessional identity to better prepare health care and social work practitioners for future models of health care delivery.

Prof. **Anne Lamesse, School of Nursing**, received a RIF grant for Phase 2 of her research into the Lived Experience of Aboriginal Nurses in Successfully Completing an Undergraduate Nursing Program. Phase 2 will examine nursing graduates' perceptions of their educational experience with an eye to increasing participation and retention of Aboriginal peoples in postsecondary nursing programs.

Professor **Kit Silcox, Lawrence Kinlin School of Business**, and **Michael Feeny, School of Information Technology**, received a RIF grant for development and further testing of a mathematics game. The game is designed to teach business mathematics to students, and can be loaded with content from various math courses.

1. Janice Elliot
2. Shelley Masse
3. Margot Sippel
4. John Bennett
5. Eleanor Fullick

6. Rob Haaf
7. Carmen Hall
8. Dr. Kimberly Maich
9. Anne Hill
10. Anne Lamesse

presentations & publications



The issue of over-protective parenting versus risk is the subject of an article by **School of Human Services** faculty member **Tina Bonnett**. The article, *Taking All the Risk Out of Child's Play: Is This a Risky Business?* discusses contemporary parenting practices and the concept of managed risk in allowing child to play outdoors. Conclusions include recent research findings that children forbidden to take risks in safe, supportive settings, often find other, less safe, ways to meet their need to take risks. The article appeared in the spring 2011 issue of *Interaction*, published by the Canadian Child Care Federation (CCCCF).



A Solace in Quantum, a paper on the new quantum cryptography technology and its impact on computer network security, was the focus of a fall 2011 presentation by Prof. **Michael Costa, School of Information Technology**. Costa was a participant in the 12th Annual Conference on IT Education, which was held at the US Military Academy in West Point, New York. The conference was sponsored by the ACM Special Interest Group on Information Technology Education (SIGITE). Costa's paper can be downloaded at the conference site at <http://sigite2011.sigite.org/?presentation=a-solace-in-quantum>



Professors **Ramon Delgado** and **Robert Haaf, School of Contemporary Media**, presented a paper on Web and Social Media Platforms for Collaboration, Iterative Testing and Marketing Within a Client-Focused Curriculum: Considerations for Curriculum Planning, Student Engagement and Long-Term Success at the 2011 World Conference on Educational Multimedia, Hypermedia and Telecommunications. The presentation focused on results of their applied research into integration of client-based projects into college-level curriculum. The conference took place in June-July 2011 in Lisbon, Portugal. Online proceedings are available at <http://www.editlib.org/p/37857>



Prof. **Carmen Hall** and **Dr. Kimberley Maich, School of Human Services**, published an article on their research into increasing social interaction for children with Autism Spectrum Disorder (ASD). *Camps on TRACKS: Creating Meaningful Social Interactions for Children with ASD and Their Peers* was published in the Winter 2012 issue of *Autism Matters*. The article was co-authored by city of London area services supervisor Laurie Quinlan, and Karen Faragher and Fatima Machado, Thames Valley Children's Centre.

Prof. **Marguerite Moore, School of Information Technology**, has published an article on the legal issues and potential challenges to Ontario's Green Energy Act in the peer-reviewed publication *Municipal and Planning Law Reports*. A lawyer, Moore examines current, contentious topics such as consultation requirements, multi-government level regulations, Ontario Aboriginal policy, nuisance and Charter of Rights provisions involved in green energy, particularly in regard to industrial wind turbines.

Early Childhood Education program coordinator **Sheryl Ragobar** and **Kim Woods, School of Human Services**, participated in the province-wide Mentoring Pairs for Child Care program. In the Ontario-funded program, more experienced child care supervisors mentor less experienced ones in their communities. Ragobar was part of an advisory committee that evaluated the program, and she and Woods trained 45 child care directors over the two years of the project. Ragobar will continue the work as a participant in the project's second phase.



1. Tina Bonnett
2. Rober Haaf
3. Carmen Hall
4. Kimberley Maich
5. Marguerite Moore
6. Sheryl Ragobar (left) and Kim Woods



from where i sit

By Greg Weiler

Social Innovation – What’s with that?

Social innovation has many definitions. In very simple terms it refers to new strategies, concepts, ideas and organizations that meet social needs of all kinds - from working conditions and education to community development and health - and that extend and strengthen civil society. Social innovation is largely the realm of the social sciences and humanities.

That’s cool, but isn’t college applied research just about commercializing technology? Sure, many of the funding programs that are fostering colleges’ foray into applied research and innovation activity are driven by the government’s commercialization innovation agenda, but social innovation is also important to colleges and governments for two reasons in particular.

1. Colleges are increasingly being called upon to respond to growing social and economic needs for knowledge, solutions and strategies. Socio-economic development, job creation, ethics, public policy, social justice, literacy, suicide prevention, public health and community service delivery are but a few of the challenges facing our world.
2. Internally, as an educational institution charged with producing graduates for a 21st Century world, we constantly strive to improve our academic environment by providing students with engaging, hands-on learning opportunities that complement the curriculum and maximize student success.

People must ultimately use technology, not the other way around. Without social innovation, technological innovation is, at best, sub-optimal.

People need to be ready to change the way they do things to realize the full value of new technologies. For example, green technologies are only of value if people are willing to adopt them. We may know how to make things out of recycled plastics, but if people don’t bother to recycle then there is no raw material for the recycling process. Social networking is another great example of how society has changed to take advantage of the opportunities presented

with communications technologies. New tools and new ways of doing things go hand in hand.

Social innovation is about new ideas that work to address pressing unmet needs. Poverty, homelessness, violence are all examples of social problems that still need dedicated solution-seeking space. Social innovation addresses these challenges by applying new learning and strategies to solve these problems. For social innovations to be successful and have durability, the innovation should have a measurable impact on the broader social, political and economic context that created the problem in the first place.

*From Social Innovation: A Primer
(Social Innovation Generation Canada, 2011)*

Think about it. Community agencies are under pressure to do more with less. Businesses that have worked with colleges on technology and product-based applied research projects are realizing that they need collateral research into related areas such as environmental impact and market development. Great opportunities exist for multi-disciplinary teams to look at both the social and technological innovation aspects of a given opportunity. For example, recipe development is food technology, but consumer tasting and preference studies on that recipe are social science.

At the 2011 ACCC National Research Symposium a significant part of the agenda focused on social innovation activity within colleges and how we can go about accessing funding to help support these activities across the college system. I dare say Fanshawe College is among the most active colleges in this area.

In this issue we’ve focused on a number of projects in the social innovation realm that Fanshawe researchers and innovators have undertaken. I’m proud of these projects. They are an important part of what we do!

Greg Weiler is the outgoing Dean of Applied Research and Innovation at Fanshawe College.

next

By Michael Jubenville, guest columnist

A STUDENT PERSPECTIVE ON THE VALUE OF PROJECT-BASED LEARNING



I was at a decision-making point in my life, and realized a career change was in order. I chose to enroll in Fanshawe's Electrical Engineering Technology program. I liked that it was a two-year, accelerated program with an option for a co-op placement between academic years.

I was lucky enough to be placed in a co-op position in the School of Applied Science & Technology (my program is one offered by Applied Science). The research projects that

I am very thankful to have been able to participate in the first co-op position ever offered by my school...

I became part of included solar-charged utility vehicles (SUV), solar generation station (SGS) as well as a few tertiary investigations into supporting technology including electrical interference testing, a solar simulator and design software packages.

The two primary research projects in my portfolio have been SUV and SGS. The SUVs are electric golf carts that have been fitted with a photovoltaic (PV) or "solar"

panel and a controller which charge the batteries in an efficient manner taking into consideration the amount of power produced at any given time. This is referred to as Maximum Power Point Transfer, or MPPT.

The goal of this project is to make the best use of the power available, and to create a viable solution to either greatly reduce or completely eliminate the use of the grid for

these vehicles, which are found not only on golf courses, but large corporate sites, gated communities, retirement communities and recreational living parks and communities.

The SGS consists of roof-mounted PV panels and a system of controls and instrumentation devices housed in a small lab used for monitoring experimentation. With an installed capacity of 3600 Watts, and the ability to expand, SGS currently generates using four 210 Watt PV panels to feed into two MPPT charge controllers which in turn provide maximum useable energy to an inverter and battery installation. The entire system is monitored using a computer to interpret the data from the smart devices (the inverter and charge controllers); from a series of 4-20 mA voltage, current and power factor transducers; and from a weather station and cameras on the roof.

The resulting data is used for input to an interface created using LabView, and the data is mined to produce a dynamic display seen by the public on a wall-mounted computer monitor in the hallway. The interface, built in LabView, also controls the tracking motors by overriding the automatic tracking allowing for aiming the PV arrays. The interface also allows for isolation and control of the connections to the PV arrays, the batteries, and the AC Grid connection.

Throughout my co-op term, I have been able to design control systems and instrumentation both using conventional means (switches and gauges) and more complex systems

(transducers, relays, LabJacks, custom devices created in the lab). CAD has been an integral tool for both mechanical drawings for the equipment room and for electrical and wiring diagrams for the SUV and SGS projects.

Sourcing the materials needed to create the control and measurement systems, the fixtures and furniture, the contractors for electrical installation and even new tires were all part of the job. Creating documentation, reports, Gantt charts, parts lists, work orders and presenting them represent about one-third of my time; almost another third was used in hands-on designing and building of printed circuit boards, wiring harnesses, and the labs themselves. Some days are left to pure research, in the form of investigation of online resources, printed material or bench-testing a device to get information as to how it performs. All the information has to be collected, sometimes interpreted, and presented to those who need to review it.

I am very thankful to have been able to participate in the first co-op position ever offered by my school; it gave me a great deal of experience in the field, and offered a year of dynamic, cutting-edge projects led by some well-versed people. I know that when I graduate in May of 2012, I will not only be able to find a job as an electrical engineering technologist, but also be able to compete for that job with confidence ... and experience.

researchfanshawe

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On April 4, 2012, Fanshawe will host the

1st Annual

STUDENT RESEARCH & INNOVATION DAY

Students will be invited to submit their research and innovation projects from capstone projects, team projects or degree assignments for an opportunity to showcase their work to the College community and London's business and industrial communities.



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