

HINFormation

A Newsletter of the School of Health Information Science
University of Victoria

Fall 2015



MESSAGE FROM THE DIRECTOR

Another term has nearly completed as HINF students, faculty and staff have been busy with classes, teaching, research and community work. As many of you have experienced, it is amazing how time seems to fly when you work in an area as exciting and fast moving as health informatics!

In the fall we continued our HINF research seminar series and we are also now providing remote access to these lectures (as well as links to previously recorded lectures in the term), with presentations by a number of faculty, students, research visitors and international adjuncts and experts in a range of emerging areas of health informatics. Please let us know if you are not on the mailing list for this series. We will continue to run what we hope will be interesting and informative seminars over the upcoming terms (and will keep you posted

with links to new upcoming lectures)!

The School would like to welcome Erin Sebastian to the HINF office as our new Administrative Officer. Erin comes with considerable experience from having held varied positions across the university and we are very happy to have her here, so welcome Erin!

The HINF undergraduate students held a very successful social night in October and we hope to have more such events in the future. In addition, we held a successful open house in October to help inform potential students about the different undergraduate and graduate programs in HINF.

Finally, we want to congratulate the new graduates from our undergraduate and graduate programs in HINF. We had a record number of graduates in the last convocation and the demand for our graduates continues to grow as technology in healthcare expands and our graduates continue to be busy with projects in Canada and all over the world.

Please let us know for the next newsletter if you have any new announcements, pictures or interesting ideas you would like to share.

I wish you a great upcoming holiday season!

Andre Kushniruk,
Director and Professor

In Memoriam

Peter Hughes ('90)
December 5, 1945 – July 22, 2015

Peter always said his most rewarding work was in teaching and implementing health information systems in former Soviet Union countries – Ukraine, Kosovo, Georgia, Armenia and Azerbaijan.

STUDENTS

Alyssa Foote has received a Jamie Cassels Undergraduate Research Award (JCURA) for 2015-2016 worth \$1,500.

The Jamie Cassels Undergraduate Research Awards (JCURA) were instituted in 2009-10 as the Undergraduate Research Scholarship program by the Vice-President Academic and Provost.

The program is designed to provide support for exceptional undergraduate students who might otherwise not be able to

have direct research experience. Eligible students include all full-time third and fourth year undergraduate students (normally registered in 12 or more units of study in the winter session) in excellent academic standing (normally this is a minimum sessional GPA requirement of 7.0).

Congratulations

In June we said goodbye and good luck to our graduating students: Carrie Basek, Stephanie Cownden, Robert Day, Bandhna Giri, Nick Gordon, Adele Green, Amy Grover, Khalil Jabri, Samantha Keo, Wan-Yi Kuo, Jordan Lanyon, Emily Mailes, Andrea Marquez, Carly Pinchin, Ruiqiong June Sun, Jason Tran, Jelena Vataavuk, Xiaoliang Wu, Mengying Wu, Heewon Yang, and Stanley Zhou.

Our best wishes also go to the November graduates: Robert Bittner, Samantha Bratty, Antony Freeborn, Toni Huynh, Abdullahi Idle, Cristina Jurj, Devon Lionas, Genc Maksuti, Alexandra Ng, Joanna Pyke, Lir Rugova, Ivana Stanic, Jimmy Tran, Selina Ward, Elysee Wong, Pengyu Xie, Bing Xu, and Alice Yue.

ALUMNI

Allen McLean, ('15) RN, MN, MSc, PhD(c) is currently in his second year as a PhD student (Computer Science) at the University of Saskatchewan in the Computational Epidemiology and Public Health Informatics Lab. His research interests include the development of computer modeling and simulation software for addressing health

systems challenges, chronic diseases and health inequities at the population level, as well as machine learning techniques applied to large health datasets. Allen previously attended the University of Victoria earning an MN and MSc (Health Information Science) in their unique dual degree program for Nursing Informatics professionals. Allen has over 20 years' experience in healthcare as an ultrasound technologist, clinical educator, team leader and community health RN.

Mowafa Househ



Mowafa Househ (PhD '09)

From June 3 to June 15 I was invited as an Academic Visiting Researcher at the University of Oxford Nuffield Department of Medicine division of Tropical Medicine and Global Health to collaborate with my colleague Dr. Chris Paton on health informatics research.

Being a visitor at the University of Oxford and collaborating with leading researchers was a great honor for me and an important academic achievement.

On June 11, I was a guest of the leading UK health informatics company TPP based in Leeds. TPP is a UK based IT company, dedicated to delivering leading healthcare software through our innovative products; SystemOne, SystemConnect, SystemInsight and SystemOnline. They were very hospitable and I learnt a lot about their team and system development process.

It is a company that is leading edge focusing on continuous improvement of system usability through a learning health system approach. They also focus on improving system efficiency and take special care in dealing with the clients. Their primary care HI system currently holds 37 million unique patients serving nearly 5000 NHS organizations. LINK <http://www.tpp-uk.com/about-us>.

This is a company to watch as they are expanding currently in Saudi Arabia, China, and other countries around the world.

Mowafa Househ

Mowafa is co-author of the paper "Association of Online Health Information-Seeking Behavior and Self-Care Activities Among Type 2 Diabetic Patients in Saudi Arabia." For details see <http://www.ncbi.nlm.nih.gov/pubmed/26268425>

Mowafa was also co-author on the paper "A Social Media Campaign to Promote Breastfeeding among Saudi Women: A Web-based Survey Study" which was awarded the "Best Paper Award" at the 13th International Conference on Informatics, Management and Technology in Healthcare (ICIMTH) held in Athens, Greece from July 9 – 11, 2015. In addition, he was also an editor of the conference proceedings *Enabling Health Informatics Applications* for IOS Press.

Mowafa still found time to co-author a recently published book entitled *Transforming Public Health in Developing Nations*. It is available on the IGI Global website.

Transforming Public Health in Developing Nations showcases the latest developments, trends, and challenges within the field of international public health.



Stacey Slager

Stacey Slager (MSc '09) resumed her career in biomedical informatics early in 2013 after moving to Utah from North Carolina for her husband's job.

She joined the Biomedical Informatics department at the University of Utah in March 2013 working with Drs Guilherme Del Fiol and Charlene Weir as a research assistant and is currently in her second year of a non-thesis Master's in that program. Stacey's work at the University of Utah has centered around user interface design and usability testing of a clinical knowledge summary, as well as a number of qualitative studies using content analysis, observations, interviews, and surveys of physician users in the School of Medicine.

Stacey tweets for the department at @uubmi and individually at @ResearchStacey. She will be presenting a poster at AMIA in San Francisco this November so be sure to stop by and say hi! Future plans include applying for US citizenship in

early 2016 and looking for biomedical informatics research jobs in the Salt Lake Valley - she loves living in the desert. Feel free to send Stacey an email at stacey.slager@utah.edu or say hi on LinkedIn.

FACULTY AND STAFF

UVic involved in Multi-province CIHR Remote Monitoring Research

Dr. Elizabeth Borycki, Associate Professor at the School of Health Information Science is a co-investigator on a research grant entitled "Caring near and far – a multi province investigation of remote monitoring technologies connecting community based older adults and their care team". Led by a team of researchers from the University of Western Ontario (Dr. Regan and Dr. Donelle), the focus of the research will be on the development and scale up of a Remote Monitoring Home Care Model (RMHC). The work will build on an already established remote monitoring service in place in several provinces. The grant received \$1,480,742 (cash and in-kind) from the Canadian Institutes of Health Research (CIHR): eHealth Innovations Partnership Program (eHIPP).

UVic Leading eSafety Research

Dr. Elizabeth Borycki, Associate Professor at the School of Health Information Science recently spoke at COACH's National eSafety Summit in Edmonton, Alberta on October 27th, 2015. The title of the invited talk was about: "Improving Understanding and Education About Technology-induced Errors and eSafety: The University of Victoria Perspective." Dr. Borycki has been a leading researcher in the area of Technology-induced Errors and eSafety since 2004. The focus of this research has been on developing methods and frameworks that can be used to address technology-induced errors prior to and after systems implementation. Dr. Borycki was also the founding Chair of the International Medical Informatics (IMIA) Working Group on Health Informatics for Patient Safety and is currently the Vice-Chair of this group.

Center for Expanded Data Annotation and Retrieval (CEDAR)

Dr. Alex Kuo took his sabbatical leave opportunity to join the Center for Expanded Data Annotation and Retrieval (CEDAR) as a visiting scholar at the School of Medicine, Stanford University.

The CEDAR was a newly funded Center of Excellence supported by the US NIH Big Data to Knowledge (BD2K) initiative. Its main objective was to create a unified framework that researchers in all scientific disciplines can use to create

consistent, easily searchable metadata.

Alex's main work at CEDAR was to study new machine learning algorithm/tool for authoring good metadata and facilitating Big Data management.



Alex Kuo

Alex Kuo and his associate Ken Tan have received a grant of \$15,000 from the inaugural 2015 Collaboration Research Grant Competition sponsored by Island Health. The research will be based on the submitted abstract, "Design and Implementation of a Big Data Analytics Framework for Health Applications."

UVic Research in Human Factors in Healthcare

Dr. Andre Kushniruk, Professor and Director of the School of Health Information Science recently presented his work at the American Medical Informatics Association Fall meeting in San Francisco. This work focussed on research in the area of human factors of healthcare interoperability. The work was conducted with colleagues from the Bronx Veteran's Affairs and has characterized usability issues

and human factors issues that occur when attempting to integrate a large electronic health record system with patient information from a local health information exchange. The findings are being used to streamline and improve the exchange of information across systems and have implications for designing better user interfaces not just in the United States but also in Canada and internationally.

A Knowledge Translation Project on Benchmarking End-of-life Care Practices for the Elderly in Primary Care

Investigators: Francis Lau,¹ Doris Barwich,² Neil Hilliard,³ Bruce Hobson,⁴ Morgan Price⁵

¹University of Victoria, ²BC Centre for Palliative Care, ³Fraser Health, ⁴Private Practice, ⁵UBC

Purpose and Design: This was a 30-month project to translate best practice knowledge in end-of-life (EOL) care into a set of tools in the electronic medical record (EMR) for use by care providers in the community setting. The tools contain EMR-specific data entry templates, query/reporting functions, and access to downloadable resources such as advance care plans. They are based on the EOL learning module from the BC General Practice Services Committee Practice Support Program to improve EOL care by primary care providers in the province.

This knowledge translation (KT) project had five stages: (1) needs assessment to identify EMR features that support best practices in EOL care; (2) tool design to define generic requirements and build EMR-specific tools; (3) tool dissemination to promote the adoption of the EMR-specific EOL care tools by providers; (4) documentation analysis to identify the extent that EOL care is captured in existing EMRs; and (5) EMR user feedback on the utility of the tools.

Participants and Outputs: This KT project involved primary care providers, palliative care specialists, informatics researchers, provider led/support organizations, healthcare organizations and EMR vendors/consultants. The outputs included: (1) a generic specifications blueprint document on EMR-supported EOL care; (2) specific EOL care tools for OSCAR, Profile and Med Access EMRs; (3) a Web-based method to distribute the tools; and (4) the tools being available in the Telus EMR template library for all Med Access EMR users and in the eForm library for all OSCAR EMR users. By the end of the project, there were 65 downloads of the tools with mostly favorable feedback from 23 survey respondents who had adopted the tools. The level of adoption was below expectation but explainable by the challenges faced by the project team as lessons learned.

Key Lessons: (1) primary care providers and provider led/support organizations are interested in adopting EMR-supported tools to enhance EOL care; (2) despite best intent, it is difficult to engage providers due to competing priorities and demands; (3) existing EMRs are inadequate to document EOL care; (4) there is little attention from EMR vendors to support EOL care and provider workarounds have led to inconsistent EOL care documentation in EMRs; (5) inconsistent documentation has made it difficult to identify EOL patients; (6) there is a need for standardized approaches to document EOL care in EMRs that can be shared across providers and settings; (7) EOL care documentation should be consistent with how other chronic conditions are documented in EMRs to reduce provider cognitive overload; (8) alignment with healthcare organizations responsible for large scale change is needed to adopt, scale up and sustain EMR-supported EOL care tools; (9) engagement of provider led/support organizations such as the Divisions of Family Practice in BC and research networks such as the Canadian Primary Care Sentinel Surveillance Network is critical to the success of KT initiatives such as this project; and (10) funders need realistic time frame and funding provision to increase the likelihood of success of large scale KT initiatives that bring transformative changes to the health system.

Acknowledgment: Team members who worked on this project - Colin Partridge, Jes Bassi, Joanna Pyke, Julie Kim, Paule Bellwood, Anita Katahoire, Douglas McGregor, Michelle Howard, Sherrie Orr, Karim Keshavjee, Ronak Brahmabhatt, Marjan Mirzataheri, Nandini Natarajan, Sarah Sabri and Beverly Lawson. This research was funded by the Technology Evaluation in the Elderly Network (TVN), which is supported by the Government of Canada through the Networks of Centres of Excellence program.

GRADUATE STUDENTS

Student Publications

Corina Saratan and Valentina Young recently published articles based on their Masters Project Work. Congratulations on your publications!

Saratan, S., Borycki, E., Kushniruk, A. (2015). "Information Management Competencies for Practicing Nurses and New Graduates." *Knowledge Management & E-Learning: An International Journal*, 7(3), 378-394.

Yonge, V., Borycki, E., Kushniruk, A. (2015). "On-the-job Training of Health Professionals for Electronic Health Record and Electronic Medical Record Use: A Scoping Review." *Knowledge Management & E-Learning: An International Journal*, 7(3), 436-469.

PhD candidate Liz Loewen is a co-author on an upcoming book chapter: Muttitt, S., Seshia, M.M.K., & Loewen, L. (2016) "Telehealth in Neonatology." In: M.G. MacDonald & M.M.K. Seshia (Eds.), *Avery's Neonatology: Pathophysiology and Management of the Newborn* (7th ed.). (pp. 77-

84). Philadelphia: Wolters Kluwer. In Press.

Cori Thompson presented a poster at MedInfo 2015 based on her MSc. The abstract was entitled "Health Information Needs for Child-in-Care," and the poster "Health Information Needs for Child-in-Care: A preliminary analysis."

After the short visit to Sao Paulo, Cori highly recommends travel to Brazil.

Medinfo 2015



Medinfo 2015 Student Paper Finalists, São Paulo, Brazil
(Pictured center - Helen Monkman, HINF PhD Student)
Photo by Christian Nohr

In August 2015, Helen Monkman, a PhD student in Health Information Science traveled to São Paulo, Brazil to attend MedInfo 2015 - the 15th World Congress on Medical and Health Informatics organized by the International Medical Informatics Association (IMIA). The paper Helen co-authored with Janessa Griffith, a PhD Student at University of Toronto, and Dr. Andre Kushniruk, her supervisor, was one of the seven finalists selected in the student paper competition. Their paper, "Evidence-based Heuristics for Evaluating Demands on eHealth Literacy and Usability in a Mobile Consumer Health Application" was awarded second place. Helen was honoured to receive this award.

Their paper describes the development and application of a novel set of heuristics (or design guidelines) developed for simultaneously evaluating usability and eHealth literacy demands in consumer health information systems. Their heuristics were created based on evidence from published studies investigating eHealth literacy and usability. Moreover, their heuristics can be used to inform the design (or re-design) and evaluation of systems for consumers (i.e., laypeople, citizens) to help ensure the safety, usability, and understandability of these systems.

Helen would like to express her gratitude for the contributions of her co-authors, as well as the financial support she received for this trip from the MedInfo Travel Award and the Denis and Pat Protti Student Travel Award.

For more information about the MedInfo 2015 Student Paper Competition:
<http://medinfo2015.com/blog/2015/09/10/the-international-medical-informatics-association-imia-announces-the-winners-and-finalists-of-the-medinfo2015-student-paper-competition/>

The following five MSc students completed his or her program in the summer 2015 term:

Name	Topic
Warren Kufuor-Boakye	Rapid Usability Inspection via Heuristic Evaluation of the User Access and Account Management Module of a Public Facing Personal Health Portal; Inspection Outcomes and Assessment of Methodology Application to Organizational Fit
Jaclyn Morrison	The Impact of Stroke Assessment on Patient Outcomes Following an Initial Transient Neurological Event (TNE)
Nirmal Summan	Comparison of Hospital Information System Implementation Strategies in Canada
Qui William Yang	Applying Qualitative System Dynamics to Enhance Performance Measurement for a Sustainable Health System in British Columbia
Valentina Younge	Training of Health Professionals for Electronic Health Record and Electronic Medical Record Use: A Scoping Review

HINF 580 FALL 2015 – SEMINAR SERIES

Past Seminars

Date	Presenter and Title	Playback Recording Link
Oct. 7	Dr. Aviv Shachak <i>HIT in the Patient Clinician Encounter: A tale of Two Literature Reviews</i>	https://ca-sas.bbcollab.com/cr.jnlp?suid=C.B5C3A1378C1A03969B8F3391DB88D2&sid=2009331
Oct. 21	Dr. Karen Courtney & Dr. Judy Matthews <i>Does the Delivery Mechanism Matter? Translating Health Interventions to Telehealth Devices</i>	https://ca-sas.bbcollab.com/cr.jnlp?suid=C.281828B990621A74727453057B1581&sid=2009331
Nov. 4	Dr. Andre Kushniruk <i>Improving The Usability Of Health Information Systems: From Rapid Usability Testing To In-Situ Analysis</i>	https://ca-sas.bbcollab.com/cr.jnlp?suid=C.E00EC54B323F66E81849658B7C2295&sid=2009331
Nov 18	Dr. Farbod Hagigi <i>Application of Modular Design to IT Systems and Healthcare Services</i>	https://ca-sas.bbcollab.com/cr.jnlp?suid=C.5A71C35D23C20DBEB0FEB5EB3222E3&sid=2009331

Nov 20	<p>Dr. Brigitte Séroussi <i>How to Provide a Relevant Support for the Guideline-based Flexible Management of Complex Patients</i></p> <p>Dr. Stefan Darmoni <i>Health Terminology/Ontology Portal Cross-lingual terminology server</i></p>	<p>https://casas.bbcollab.com/cr.jnlp?suid=C.E9F60D360B349F6DA2DF0B00B85299&sid=2009331</p>
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Upcoming Seminar

Email his@uvic.ca to access the participant connection link

Date	Presenter and Title	Playback Recording Link (available after the seminar)
<p>Dec 2 Noon – 1:00 pm HSD A170</p>	<p>Dr. Christian Nørh <i>Patient Safety Through Intelligent Procedures in Medication - A European Human Factors User Driven Design Project</i></p>	<p>https://casas.bbcollab.com/cr.jnlp?suid=C.EC938D0E2AE90312056C91D681B090&sid=2009331</p>

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Please remember to send in news about yourself and colleagues to wood@uvic.ca for the next newsletter!