CO-OP PROGRAM

Employers benefit from the co-op program as much as the students!

Just some of the perks of hiring a co-op student:

Students at various levels are available year-round.

Students can often release regular employees for higher-level tasks.

Co-op provides employers with the opportunity to assess prospective full-time employees.

Students may provide a stimulus to regular staff.

Co-op student wages are lower than those of a regular, full-time employee.

Co-op provides opportunities for employers and educational institutions to interact and exchange information on such issues as: the human resources needs of employers and technology advances

Contact us today to learn more!

Patricia Meng
Co-op/PEP Coordinator
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Secretary—Undergraduate, Co-op/PEP
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UNB FACULTY OF COMPUTER SCIENCE

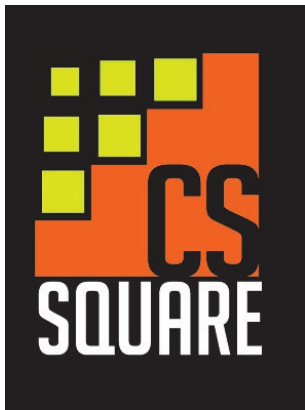# RESEARCH EXPO 2014

FRIDAY, MAY 2ND, 2014
8:30AM - 4:30PM
WU CONFERENCE CENTRE
6 DUFFIE DRIVE

cs.unb.ca/research-expo

Faculty of COMPUTER SCIENCE
UNB
Fredericton · New Brunswick · Canada

Ted McDonald

Professor of Economics, UNB, Director of the NB research Data Centre and Co-Director of the NB Institute for Research, Data and Training

Dr. Ted McDonald is a Professor of Economics at the University of New Brunswick in Fredericton. He holds a Ph.D. and a Master of Commerce in Economics from the University of Melbourne. Dr. McDonald was designated a UNB Research Scholar for 2012-2014 and has been PI or co-PI on over $1.5 million of research funding since 2009. He is the Academic Director of the NB Research Data Centre and the co-director of the NB Institute for Research, Data and Training, a newly established facility on the UNB campus to house administrative data from the Province of New Brunswick.

His main areas of research and expertise include the health status and health services use of immigrants, rural residents, minority groups and other subpopulations, as well as an ongoing program of research on the socioeconomic and demographic determinants of cancer. He has published his work in a broad range of academic journals including Social Science and Medicine, Canadian Journal of Economics, Canadian Public Policy, Oral Oncology, Thyroid, and the Canadian Journal on Aging. He has also co-edited a book on immigration in Canada published by McGill-Queen's University Press

Computing Science Creative Space: CS Square

CS Square is a Creative Space for peer learning, knowledge sharing, and extra-curricular technical-creative IT related activities and entrepreneurship.

An 'open space' entrepreneurship centre in the Faculty of Computer Science where students, faculty and local industry can meet to collaborate and exchange innovative ideas and vision.

As an INCUBATOR CS Square provides:
- Mentoring and networking opportunities
- Match making with CS entrepreneurs and business leaders
- One-on-one support, advice and counselling for new entrepreneurs
- Workshops and seminars
- Customized business development workshops

UNB
EST. 1785

Monica Wachowicz

CISCO Research Chair in Advanced Learning in Big Data Analytics
UNB Department of Geodesy and Geomatics Engineering

Dr. Monica Wachowicz is an Associate Professor and the Cisco Research Chair in Advanced Learning in Big Data Analytics at UNB's Department of Geodesy and Geomatics Engineering.

Her research work is closely associated with the prospect of global real-time acquisition of massive data by the increased availability of affordable technologies capable of identifying, sensing, networking and processing the mobility of things in the physical and virtual worlds of big data. She works at the intersection of (1) mobile location analytics that explores how to synthesize the mobile location, context and interaction information of real time massive data streams being harvest across the many technologies; and (2) ambient cartography intelligence for making the maps of the future which will be culturally, linguistically and nationally designed for providing a greater 'sense of place' in motion

Welcome to the 2014 Faculty of Computer Science Annual Research Exposition. I hope that you enjoy the exposition's program and find the experience of meeting and sharing thoughts with our students and researchers as well as one another unique and worthwhile!

The 2014 Faculty of Computer Science's Annual Research Exposition showcases the excellent research, new developments, and experience related to the area of information and communication technology. This year we have 29 posters. The coverage of the contributions is very wide, which is one of the features that distinguishes our research expo from other events that focus on more specific areas. The participants in the Exposition will have the opportunity to hear leading experts and IT leaders present keynote talks and have the opportunity to view the posters at the poster session.

Many people contributed to the success of this Exposition. I would like to thank all the organizing committee members, in particular, Dr. Huajie Zhang, Chair, and Drs. David Bremner, Virendra Bhavsar, and Weichang Du, of the organizing committee, for their effort and dedication. I am also very pleased to thank all the students and professors for their posters which are the main attraction, the keynote speakers, members of the panel, and to all the participants. You are the ones who make all this effort worthwhile!

Ali A. Ghorbani
Professor and Dean

8:30—9:00
Registration

9:00 - 9:05
Dr. Ali Ghorbani, Dean, Faculty of Computer Science, UNB

9:05—9:15
Dr. David Burns, Vice President (Research), UNB

9:15—9:40
Gaëtan Thomas, President and CEO, NB Power

9:40 - 10:00
Calvin Milbury, President and CEO, New Brunswick Innovation Fund (NBIF)

10:00 - 10:15
Dr. Eric Aubanel, Faculty of Computer Science, UNB

10:15-10:45
Break & Poster Session I

10:45—11:00
Jody Glidden, President and CEO, Introhive

11:00—11:15
Dr. Andrew McAllister, Faculty of Computer Science, UNB

11:15—11:30
Chris Mathis, President and CEO of SpringBoard Atlantic

11:30—11:45
Jamie Rees, Director of Information Assurance, GNB

11:45—12:00
Dr. Harold Boley, Faculty of Computer Science, UNB

Roman Coba
Chief Information Officer
McCain Foods Ltd.

Roman is the Global Chief Information Officer for McCain Foods Limited. In his role he has global responsibility for IT strategy, development and delivery, support, technical solutions and architecture as well as enabling the business globally through technology. Roman has and continues to be instrumental in bringing the synergies to be found with IS into the business realm of the company.

Prior to joining McCain Foods Limited Roman was the Senior Vice President/CIO for Loblaw Companies Limited and had enterprise-wide responsibility for all information technology infrastructure and beyond. Roman's realm of re sponsibil i ty expanded beyond technology and also encompassed telecommunications, web development, and Business Television.

Prior to joining Loblaw Companies, Roman spent eight years with Wal-Mart Stores International as Director of Information Services in Canada, South America, more specifically Brazil and Argentina and in Europe both Germany and the UK.

Prior to Wal-Mart International Roman worked in various IS management roles within the transportation industry and wholesale food environments in Canada.

Geoff Flood
President
T4G Ltd.

Geoff is the founder and the guiding force behind the continued growth of T4G Limited, a leading Canadian technology services firm. Geoff has provided the leadership, vision and strategic direction for the company since its inception. Geoff retains overall responsibility for strategy while ensuring that the individual business groups within T4G achieve their objectives. His experience and thought leadership, coupled with a robust knowledge of corporate finance and investment strategy, has enabled T4G to remain at the forefront of IT Professional Services firms.

Geoff was previously Chief Information Officer and Vice-President of Dylex Limited – a multidivisional specialty retailer with over 700 stores in North America. In this capacity, he had the executive responsibility for the information technology assets of the Dylex Group of companies.

Prior to joining Dylex, Geoff held the position of Information Systems Officer for George Weston Limited (Canada's largest food processor and retailer) where he coordinated information systems activity across the Weston/Loblaw group of companies. Earlier at George Weston, he was accountable for strategic and corporate planning and financial reporting.

Geoff is actively involved in several boards and charitable organizations and has a specific interest in T4G's philanthropic organization Future Focus which backs organizations with a track record of helping children succeed. Geoff is immediate past-President of the New Brunswick Information Technology Council and is currently co-Chairman of the Premiers Advisory Council on Technology.

Geoff holds and MBA in Finance from Queen's University, and a Bachelor of Arts in Economics from St. Francis Xavier University.

Geoff lives in Rothesay, New Brunswick. He is married and has three children.

12:00 — 13:00
Lunch & Poster Session II

13:00 — 13:15
Dr. Bruce Spencer, Faculty of Computer Science, UNB

13:15 — 14:15
Graduate Student Presentations:
Hugo Gonzalez, PhD Student, UNB
Panagiotis Patros, PhD Student, UNB
Victoria Pimentel, MCS Student, UNB
Konstantin Nasartschuk, PhD Student, UNB

14:15 — 14:45
Break & Poster Session III

14:45 — 16:15
Panel Discussion
Topic: Big Data and Data Science

Moderator: Geoff Flood, CEO of T4G

Panellists:
David Burns, UNB Vice President Research
Roman Coba, CIO, McCains
Monica Wachowicz, CISCO Research Chair in Advanced Learning in Big Data Analytics
Ted McDonald, Professor of Economics, Director of the NB Research Data Centre and the Co-Director of the NB Institute for Research, Data and Training
Jody Glidden, President and CEO, Introhive

1. Abdullah Alzahrani, Natalia Stakhanova, and Ali A. Ghorbani, *SMS Mobile Botnet Detection Using A Multi-Agent System*

2. Alireza Manashty and Christopher Baker, *Finding the Correlation between People Studying and Staying in Canada and Economic and Health Factors of their Source Countries using Semantic Web and Open Government Data*

3. Azden Bierbrauer, Kenneth Kent, Paul Plöger, Peter Shipton, *Memory Footprint Analysis and Object Sharing part of Footprint Reduction and Inter-JVM Sharing in IBMs J9-JVM.*

4. Baoguo Zhou, Gerhard W. Dueck, *Identifying cold objects in the IBM JVM*

5. Bing Yan, Kenneth Kent, Eric Aubanel, Karl Taylor, *Packed Object Synchronization*

6. Bo Yan, Kenneth B. Kent, *Synthesis and Improvement in Odin II*

7. Chandan Bagai, Kenneth B. Kent, *Characterizing and Improving the General Performance of Apache Zookeeper*

8. Chenwei Wang, Eric Aubanel, David Bremner, Michael Dawson, *Concurrency Benchmark Suite and Metrics for Java Programs*

9. Chintan Barad, Weichang Du, *Cloud Based Online Software Architecture Evaluation System*

10. Elaheh Biglar Beigi, Hossein Hadian Jazi, Natalia Stakhanova, and Ali A. Ghorbani, *Toward Effective Feature Selection in Machine Learning-Based Botnet Detection Approaches*

11. Hanieh Razzaghi and Ali.A Ghorbani, *Question Answering System for Legal Domain*

12. Hossein Hadian Jazi, Hugo Gonzalez, Natalia Stakhanova, and Ali A. Ghorbani, *The Impact of Sampling Techniques on Application Level DoS Attack Detection*

13. Hugo Gonzalez, Natalia Stakhanova, Ali A. Ghorbani, *DroidKin: Lightweight Detection of Android Apps Similarity*

14. Jesse English, Hugo González, Abdullah Alzahrani, Natalia Stakhanova, Ali Ghorbani, *NetDroid: Malware Detection via Application Profiling based on Network Connections*

Jamie Rees

Director if Information Assurance
Government of New Brunswick

Jamie Rees, Director of Information Assurance & CISO for the Government of New Brunswick, Canada is a career security practitioner and champion. Using experience from his time in the telecommunications, financial services and government to aid decision making via communicating information security to executives in language they understand.

Jamie has a track record of explaining the benefits of information security to various level of stakeholder stretching over a decade and a half. Starting with a strong technical background as a sysadmin and IT instructor, he later moved to leadership roles, documenting and communicating the value of the craft to secure funding for entire programs including the Security Event Management Center and ITGRC programs he currently oversees at GNB.

Chris Mathis
President and CEO
SpringBoard Atlantic

Chris Mathis has dedicated his engineering career to fostering the global commercialization of technology from Atlantic Canada. His entrepreneurial "teeth-cutting" came from founding and operating Mathis Instruments Ltd. to commercialize his wife's, Dr. Nancy Mathis, Ph.D. research at UNB. The resulting products and company were awarded numerous distinctions including Profits Magazines' Top 50, BDC's Young Entrepreneurs of the Year (N.B., 1997) and received an International R&D 100 Award (1999). As inventor of the technology, Dr. Nancy Mathis was later recognized with a Manning Innovation Award, the highest innovation award distinction in Canada.

Mr. Mathis' technical and entrepreneurial experience combined with four years of commercializing technologies and driving industry engagement at UNB's Office of Research Services, provided him with a broad spectrum of education and firsthand experience in supporting and developing commercial innovations.

Mr. Mathis now works with the Atlantic post-secondary institution members of Springboard Atlantic to accelerate innovation; pushing technology out to real-world applications, engaging with industry to encourage academic-industry collaborations, and supporting entrepreneurs to commercialize innovative technologies.

15. Junyan Zhang, Donglei Du, Weichang Du, *A Software Toolkit for Stock Data Analysis Using Social Network Analysis Approach*

16. Karthika Nanthakumar, Tristan M. Basa, Gerhard Dueck, *Tracing a Java Program on Java Virtual Machine*

17. Konstantin Nasartschuk, Marcel Dombrowski, Kenneth B. Kent, *Automated Trace File Generator for Virtual Machine Technique Evaluation*

18. Marcel Dombrowski, Konstantin Nasartschuk, Kenneth B. Kent, *Thread Local Heap Garbage Collection in a Simulated Runtime Environment*

19. Martin Koch, Prof. Kenneth Kent, Rainer Herpers, Eric Aubanel, Karl Taylor, *WebSphere eXtreme Scale as a Use Case for Packed Objects*

20. Mohammadreza Yavari and Bradford G. Nickerson, *Ultra Wide Band (UWB) real time positioning*

21. Nicolas Neu, Charlie Gracie, Prof. Dr. André Hinkenjann, Kenneth Kent, *Automatic Application Performance Improvements Through VM Parameter Modification after Runtime Analysis*

22. Panagiotis Patros, Eric Aubanel, David Bremner and Michael Dawson, *Measuring JUC Lock Contention in the IBM JVM*

23. Qing Shen, Wei Song, and Weichang Du, *Quality of Service Enhancement for Drive-Thru Internet*

24. Shijie Xu, David Bremner, *Method handle graph optimization in JVM*

25. Stuart A. MacGillivray and Bradford G. Nickerson, *Planar Subdivisions Arising From Overlapping Polygons*

26. Taees Eimouri, Kenneth Kent, Aleksander Micic, *Object Model Cache Locality*

27. Umang Pandya, Karl Taylor, Eric Aubanel and Kenneth Kent, *A Profiling Tool for exploiting the use of Packed Objects in JAVA Programs*

28. Victoria Pimentel and Bradford G. Nickerson, *Estimating the Safety Function Response Time for Wireless Sensor Networks*

29. Zahra Miri Kharaji and Bradford G. Nickerson, *Science Distributed Spatial Data Structures for Big Data*

David Burns
Vice President—Research
University of New Brunswick

Dr. Burns is currently serving as Vice President—Research at the University of New Brunswick. He obtained his Ph.D in Analytical Chemistry from the University of Washington in 1984 and has since mentored over 25 graduate and postdoctoral students, 20 honours projects, and 20 undergraduate and high school students. His current research deals with fundamental aspects of bioinformatics, non-invasive near-infrared assessment of health and development of smart polymer nanosensors with applications to water/soil quality analysis and the point of care, biotechnology/biomedical fields. Several aspects of Dr. Burns' work have led to intellectual property. In particular, a core platform technology was developed for near infrared spectroscopic assessment of (1) Lung edema, (2) in vivo lactate, (3) Fetal/Maternal Health from Amniotic Fluid, (4) Embryo Viability assessment from culture fluid, and (5) oxidative stress Assessment of Neurodegenerative Disease from Blood.

Gaëtan Thomas
President and CEO
NB Power

Mr. Thomas was appointed President & CEO of New Brunswick Power Corporation in February 2010. Prior to his current position, Mr. Thomas was the Vice President of NB Power Nuclear Corporation which he held since 2005. Previous to this, Mr. Thomas held the position of Vice President, NB Power Distribution and Customer Service. Gaëtan has a proven track record of over 30 years with operations experience in many areas of our business including Generation, Transmission, Distribution and Customer Service
Mr. Thomas holds a Bachelor of Engineering Degree (Electrical) from the University of New Brunswick and is a member of the Association of Professional Engineers and Geoscientists of New Brunswick.

Calvin Milbury
President & CEO
New Brunswick Innovation Fund

Calvin Milbury is the President and CEO of the New Brunswick Innovation Foundation, an independent corporation with the mandate of developing innovation and entrepreneurship in New Brunswick, where he manages NBIF's operations, leads its investment activities and actively manages its growing portfolio of venture capital and research investments. Calvin established the foundation's venture capital fund and has been instrumental in the creation and development of over 50 start-up companies
Calvin first joined the foundation in its inaugural year (2003) and was appointed to his current position in April 2009. Under his leadership, NBIF's capital has grown from $40M to $120M under management, having secured capital from several sources including returns from successful investments in local companies like Radian6 Technologies and UserEvents.
Calvin is a University of New Brunswick graduate with a Master of Business Administration degree and a Bachelor of Science degree in Biology-Chemistry.

Jody Glidden
President and CEO
Introhive

Jody is a four-time founder of enterprise technology companies. In his 17 years of start-up and development experience he has founded companies in eLearing, analytics, web and mobile technologies. Prior to founding Introhive Jody was CTO and COO of Chalk Media that was acquired by BlackBerry in 2009. Past Experience includes two successful eLearning companies that were acquired by global leaders in the market. Jody hold degrees in business and technology from UNB and Harvard. Jody is passionate about product development and can still roll up his sleeves and write code if the rest of the team will let him.