



**The Canadian Ergonomists Association
presents the**

2022 Virtual Symposium

October 17 - 19, 2022

**Consult with your organization to find out if you are eligible to receive
continuing education credits for attending this conference.**

Translations into English and French are available for every session.

Preliminary Program



**Association of Canadian Ergonomists
Association Canadienne d'Ergonomie**

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Association Canadienne d'Ergonomie
2- 555 Hall Ave E Renfrew,
Toll Free: 1-888-432-2223 Fax: (613) 432-6840
info@ace-ergocanada.ca



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Schedule at a Glance

Atlantic	Eastern	BC	Monday, October 17th	Tuesday, October 18th	Wednesday, October 19th
11:30-12:00	10:30-11:00	7:30-8:00	Preparation/Welcome		
12:00-1:00	11:00-12:00	8:00-9:00	Keynote [FR] Nancy Black "The Value-Added Roles of the Science & Practice of Ergonomics & Human Factors in the world of 2022 & Beyond"	Keynote Gary Dennis "Lessons Past and Future... a Journey through Ergonomics"	Speaker/Presenter Tanya Morose & Dwayne Van Eerd "The Art and Science of Ergonomics: Examples from policing"
1:00-2:00	12:00-1:00	9:00 - 10:00	Speaker/Presenter Steve Fisher "MSD exposure assessment – current practices and what the future may have in store"	Speaker/Presenter Sadeem Qureshi, Michael Greig & Patrick Neumann "Integrating HFE into Healthcare Systems Simulation for Better Work and Better Care"	Speaker/Presenter [FR] Jeanne Guérin & Danielle Lemay "Overview of Human Factors/Ergonomics by Ergo@Large"
2:00-2:30	1:00-1:30	10:00-10:30	Sponsors		
2:30-3:30	1:30-2:30	10:30-11:30	PhD Student Presentations Daniel Armstrong Galaad Lefay [FR]	Masters Student Presentations Cynthia Dion [FR] Jade Samping	CCPE Presentation
					Undergraduate Presentations Leah Dawson Richard Michaud Langis Jerome Range Marja Frederiksen
3:30-4:30	2:30-3:30	11:30-12:30	Masters Student Presentations Rodia Ida Tesilimi [FR] Virginie Tutenuit [FR]	Panel Discussion Working as a Canadian Ergonomist: Stories and Advice from Coast to Coast	Keynote Jason Kumagai "A Journey Through Ergonomics in Canada"
4:30 – 6:30	3:30-5:30	12:30-2:30		Social Event Ergotrivia	Conclusion & Presentation of Student Awards



Monday, October 17th

Atlantic	Eastern	BC	
11:30-12:00	10:30-11:00	7:30-8:00	Preparation/Welcome
12:00-1:00	11:00-12:00	8:00-9:00	Keynote "The Value-Added Roles of the Science & Practice of Ergonomics & Human Factors in the world of 2022 & Beyond" <i>[Nancy Black] [FR]</i>
1:00-2:00	12:00-1:00	9:00 - 10:00	Speaker/Presenter "MSD exposure assessment – current practices and what the future may have in store" <i>[Steve Fisher]</i>
2:00-2:30	1:00-1:30	10:00-10:30	Sponsors
2:30-3:30	1:30-2:30	10:30-11:30	PhD Student Presentations "Proprioceptive Acuity Influences Lifting" <i>[Daniel Armstrong]</i> "Transmission in the humanitarian field: a matter of efficiency, health, and inclusion" <i>[Galaad Lefay] [FR]</i>
3:30-4:30	2:30-3:30	11:30-12:30	Masters Student Presentations "Visual Research in driving simulators for paramedics (preliminary results)" <i>[Virginie Tutenuit] [FR]</i> "Ergonomics and the COVID 19-pandemic: impacts on musculoskeletal health of university workers" <i>[Rodia Ida Tesilimi] [FR]</i>



Tuesday, October 18th			
Atlantic	Eastern	BC	Monday, October 17th
11:30-12:00	10:30-11:00	7:30-8:00	Preparation/Welcome
12:00-1:00	11:00-12:00	8:00-9:00	Keynote "Lessons Past and Future... a Journey through Ergonomics" <i>[Gary Dennis]</i>
1:00-2:00	12:00-1:00	9:00 - 10:00	Speaker/Presenter Sadeem Munawar Qureshi, Michael Greig, & W. Patrick Neumann "Integrating HFE into Healthcare Systems Simulation for Better Work and Better Care" <i>[Sadeem Munawar Qureshi, Michael Greig, W. Patrick Neumann]</i>
2:00-2:30	1:00-1:30	10:00-10:30	Sponsors
2:30-3:30	1:30-2:30	10:30-11:30	Masters Student Presentations "Using the ergonomic features of a new smart sit-stand desk in the workplace" <i>[Cynthia Dion] [FR]</i> "Effects of using a gamified app with sit-stand desk and under-the-desk bike on heart rate variability" <i>[Jade Samping]</i>
3:30-4:30	2:30-3:30	11:30-12:30	Panel Discussion Working as a Canadian Ergonomist: Stories and Advice from Coast to Coast
4:30-6:30	3:30-5:30	12:30-2:30	Social Event Ergotrivia



Wednesday, October 19 th			
Atlantic	Eastern	BC	Monday, October 17 th
11:30- 12:00	10:30- 11:00	7:30- 8:00	Preparation/Welcome
12:00- 1:00	11:00- 12:00	8:00- 9:00	Speaker/Presenter "The Art and Science of Ergonomics: Examples from policing" <i>[Tanya Morose & Dwayne Van Eerd]</i>
1:00- 2:00	12:00- 1:00	9:00 - 10:00	Speaker/Presenter "Overview of Human Factors/Ergonomics by Ergo@Large" <i>[Jeanne Guérin & Danielle Lemay] [FR]</i>
2:00- 2:30	1:00- 1:30	10:00- 10:30	Sponsors
			CCPE Presentation
2:30- 3:30	1:30- 2:30	10:30- 11:30	Undergraduate Presentations "Creating the ultimate physical demands analysis: a critical review" <i>[Leah Dawson]</i> "Effect of using gamified app with sit-stand desk and under the desk bicycle on activity level" <i>[Richard Michaud Langis]</i> "Driving the prevention of low back pain in police officers: a narrative review" <i>[Jerome Range]</i> "A cab evaluation method for a seamless transition to modelling operator-equipment interaction" <i>[Marja Frederiksen]</i>
3:30- 4:30	2:30- 3:30	11:30- 12:30	Keynote "A Journey Through Ergonomics in Canada" <i>[Jason Kumagai]</i>
4:30- 5:00	3:30- 4:00	12:30- 1:00	Conclusion & Presentation of Student Awards



Keynote Speaker - Monday, October 17th, 2022



Dr. Nancy Black, Ph.D., P.Eng, CCPE

Nancy Black, Ph.D., P.Eng., CCPE, is an Associate professor in the Department of Mechanical Engineering at Université de Moncton where she has worked since 1994, initially within the Industrial Engineering Sector.

Nancy holds 3 engineering degrees focused on ergonomics and human factors: B.A.Sc. Systems Design (University of Waterloo), M.A.Sc. Industrial (T.U.N.S. now part of Dalhousie University), and Ph.D. Mechanical (University of New Brunswick). She holds the professional title 'Canadian Certified Professional Ergonomist' (CCPE) since 2021.

Her principal research focus relates to how to limit musculoskeletal disorders through tool and workstation design, particularly in sedentary (office) work environments. She is also investigating how ergonomics is taught in undergraduate engineering programs.

She has been an active member of the Association of Canadian Ergonomists – l'Association canadienne d'ergonomie (ACE) since 1992, starting as a student, before taking on regional roles (Atlantic - Director at Large, President elect, President and Past President) and moving into ACE National roles: President-elect, President (2017), and Past President. She represented ACE on the International Ergonomics Association (IEA) Council at meetings from 2016-2018. Nancy was active in the organizational committee of the 21st Triennial World Congress of the IEA hosted by ACE in 2021 as co-chair of the Technical Programming Committee; through that role, she helped coordinate scientific programming through the IEA Technical Committees and Executive representing Human Factors and Ergonomics leaders around the world. From 2021-2024, she is the chair of the IEA's Science, Technology and Practice Standing Committee which supports the Technical Committees, and IEA scientific publications as well as supporting scientific collaborations.

The value-added roles of the science and practice of Ergonomics and Human Factors in the world of 2022 and beyond

2022 is an exciting time for Ergonomics and Human Factors (E/HF). In Canada, we've recently welcomed the world virtually at the International Ergonomics Association's 2021 Triennial World Congress, bringing 1200 people together to learn, share and network to make E/HF stronger. The new IEA executive council (for the 2021-2024 period) is working to move E/HF forward with exciting initiatives. We will discuss these projects and the contribution of each of those in E/HF, and insights gained through her work with the IEA's Science Technology and Practice Standing Committee focusing on how it affects Canada and our roles internationally.

This presentation will be made in French.



Keynote Speaker - Tuesday, October 18th, 2022



Dr. Gary Dennis BSc (Hons) PhD CPE

Dr Gary Dennis BSc (Hons) PhD CPE, has consulted extensively for over two decades on ergonomic issues to a wide variety of industrial sectors both within Australia and internationally. He is a Certified Professional Ergonomist and is a past Chair of the Human Factors and Ergonomics Society in Australia. Combining a research Doctorate in spinal biomechanics with a tertiary background in engineering and a First Class Honours degree in Health Science, Gary has the ideal combination of an in-depth understanding of biological tissues with engineering based solutions to effectively address ergonomic issues that maximize the health, productivity, sustainability and diversity of the most important asset within a business its people. With an academic career at various universities, Gary now focuses his time as the Managing Director of both ErgoSolutions (an engineering driven ergonomic solutions company) and ErgoEnterprises (providing risk management solutions through its Participative Ergonomics risk management system ErgoAnalyst), and also concurrently holds an Adjunct academic appointment and an Industrial Fellowship in ergonomics and biomechanics with The University of Queensland.

Lessons Past and Future ... a Journey through Ergonomics

“Positive risk in the workplace is a good thing – it’s occupational exercise”

With more than 20 years in the field, Gary shares his holistic approach and learnings in managing the human asset based improving health, performance, diversity, and sustainability.

His focus is on an integrated participative model, which engages the workforce and manufacturers to improve productivity and achieve sustainable outcomes.

With a background in engineering and biomechanics, Gary will share his innovative approach and experience in preventing musculoskeletal injuries.

This presentation will be made in English.



Keynote Speaker - Wednesday, October 19th, 2022,



Jason Kumagai MSc, CCPE, CHFP

Jason Kumagai MSc, CCPE, CHFP is a Human Factors Consultant specializing in Fatigue Risk Management, Patient Safety, and Human Factors Engineering. He is President and Principal consultant of Optimal FiT Inc, based in Calgary, Alberta. Jason has held the positions of President of the Association of Canadian Ergonomists – Prairie and Northern Region, President of the Canadian college for the Certification of Professional Ergonomists, and Co-chair of the 2006 ACE conference held in Banff, Alberta.

A Journey Through Ergonomics in Canada

Join Jason as he shares his personal adventures and lessons learned applying ergonomics in a variety of ways in a variety of places across Canada. The field of Ergonomics has provided a range of opportunities such as: hiking with soldiers as they navigate through the woods at night to assess new technologies; riding the railways to help investigate human errors and fatigue; walking through lifesize mock-ups of hospitals to ensure they are designed for both providers and patients; and, visiting off-shore oil platforms to determine human performance activities that are critical to safe operations. The discussion will also draw upon the experiences and advice that have been shared by other notable Ergonomists.

This presentation will be made in English.



Speaker – Monday, October 17th, 2022



Steven Fischer, PhD, CCPE, RKin

Dr. Steven Fischer is Canadian Certified Professional Ergonomist, Registered Kinesiologist in the province of Ontario and an Associate Professor and Director of the Occupational Biomechanics and Ergonomics Lab in the Department of Kinesiology and Health Sciences at the University of Waterloo. Dr. Fischer currently serves as the Associate Director, Research for the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD), as a Scientific Editor for Applied Ergonomics and chairs the MSD Technical Committee for the International Ergonomics Association (IEA). Dr. Fischer was the 2014 recipient of the Major Sir Frederick Banting Award as presented by the Surgeon General of the Canadian Armed Forces in recognition of his high quality applied occupationally focused research aiming to prevent and mitigate neck pain among Canadian Armed Forces helicopter pilots. Dr Fischer is also a past ACE Founders Award recipient (2007) and has been a long-time member and advocate for ACE. Dr. Fischer has published over 75 peer-reviewed papers, holds 2 US Patents, and continues to provide post graduate research and training opportunities for our next generation of HFE professionals.

MSD exposure assessment – current practices and what the future may have in store

In this presentation Dr. Fischer will describe findings from a recent survey of ACE members about their current MSD exposure assessment practices, describe findings from a recent review of emerging multi-task exposure assessment tools, and will conclude by sharing preliminary findings related to the use of smartphone video and its potential integration into MSD exposure assessment.

This presentation will be made in English.

Speaker – Tuesday, October 18th, 2022



Dr. Sadeem M. Qureshi, PhD, CCPE

Dr. Sadeem M. Qureshi, is a Post Doctoral Fellow in the Human Factors Engineering Lab at the Toronto Metropolitan University (formerly Ryerson University). His research focuses on quantifying workload and its implications on quality using simulation technologies. Sadeem is a Chapter Leader (Toronto) for the Association of Canadian Ergonomists (ACE), and the Co-Chair of the newly formed subcommittee of Early Career Researchers and Professionals at the International Ergonomics Association (IEA). Sadeem's research has led to several awards. Few worthy of mention are the 'IEA K.U. Smith Award (Best PhD Paper)' and 4th Annual Ted Brown and Hal Hendrick 'Young Investigators Award 2021', given by the Organisational Design and Management (ODAM) technical committee of IEA.



Dr. W. Patrick Neumann, PhD, Eur.Erg., LEL

Dr. W. Patrick Neumann, is the Director of the Human Factors Engineering Lab and a Professor at the Toronto Metropolitan University (formerly Ryerson University). Patrick's research now focuses on the design of work systems that are effective and sustainable from both human and technical perspectives. Areas of research interest include: human factors and firm strategy; industrial system design processes; organizational design and change management; simulation and virtual performance modelling; and performance and exposure measurement.



Dr. Michael Greig, PhD

Dr. Michael Greig, is a Research Associate and Post Doctoral Fellow in the Human Factors Engineering Lab at Toronto Metropolitan University (formerly Ryerson University). His industry-based research and field research projects are aimed at incorporating human factors and ergonomics approaches into organisational processes, and developing user-driven tools and methods to predict and communicate human factors and ergonomics information to maximize performance and

wellbeing. He and his co-authors were awarded the 2020 Best Paper Award in the journal Ergonomics for their development work of the Human Factors Integration Toolset, a tool to assess human factors and ergonomics capability within an organisation.

Integrating HFE into Healthcare Systems Simulation for Better Work and Better Care

The International Council of Nurses predicts that 13+ million nurses would be required to bridge the worldwide nurse shortage gap. Due to the severe workload and work demands, both the existing workforce and new graduates are abandoning the industry. While much work has been done in assessing nurse workload, there exists a research gap in proactively quantifying nurse workload and its various impacts at the system design and planning level. Computerized simulation technologies might help. This session will consist of three presentations spanning across the realms of computerized simulation technologies as a way to identify and quantify the system design level drivers of the workload problem in nursing. Each talk provides a unique approach, through an HF lens. The first presentation takes a 'macro' (systems-level) approach to simulation by focusing on the use of System Dynamics to model the long-run effects of given nurse workload levels on employee health and the quality of the system output. This can help users explore the ergonomics-system performance relationship. The second presentation provides insight into a 'care unit' level stance to simulation, specifically Discrete Event Simulation (DES), to quantify nurse workload, work performance, and quality of care, in COVID-19 designated units and medical-surgical units. The last presentation takes a 'micro' stance to simulation by integrating DES and Digital Human Modelling (DHM) technologies to estimate workload induced biomechanical load, physical fatigue and recovery in non-cyclical work tasks over multiple days of work. Come see how computer simulation approaches can help establish workload measures and consequences that are negatively affecting nurses and patients. These approaches can help light the way to a better future healthcare system design.



This presentation will be made in English.

Speaker – Wednesday, October 19th, 2022



Tanya Morose M.Sc., CCPE, CRSP

Tanya is the Director Prevention, Engagement and Retention for the Public Safety and Health and Community Care sectors at Public Services Health and Safety Association. Tanya has over 20 years' experience in health and safety and ergonomics in a variety of industries with a particular focus on municipal government and public safety. Tanya has a strong skill set in auditing, leading projects and the assessment, review and implementation of effective health and safety programs. In her spare time, Tanya is an Auxiliary Acting Sergeant with Waterloo Regional Police Service and the ACE National Secretary.

She holds a Bachelor and Master of Science in Kinesiology from the University of Waterloo and is a Canadian Certified Professional Ergonomist (CCPE) and Canadian Registered Safety Professional (CRSP).



Dr. Dwayne Van Eerd, PhD

Dr. Dwayne Van Eerd is a scientist at the Institute for Work & Health, where he has been a researcher since 1997. He has an MSc and BSc in kinesiology from the University of Waterloo, an MSc in health research methodology from McMaster University, and a PhD in work and health from the Faculty of Applied Health Sciences at the University of Waterloo. As a scientist with the Institute for Work & Health, he focuses primarily on the prevention of work-related injuries, as well as on the implementation of programs and practices to prevent work injury and disability related to physical and mental health. His research projects include evaluations of participatory ergonomics interventions, evaluations of workplace MSD and mental health practices/programs and their implementation, and systematic reviews of the prevention literature. Van Eerd also practices and researches integrated knowledge transfer and exchange.

The Art and Science of Ergonomics: Examples from policing

The science of ergonomics is evidence-based and well established in undergraduate and graduate courses. However, the art of ergonomics is implementing that science in the context of the work/workplace. The art can be considered tacit knowledge which is not easily taught in school therefore must be learned in the field. Ergonomists are called on to apply the science but must use their own creativity to provide effective solutions to problems identified in workplaces. This is particularly important in non-cyclic and dynamic environments such as policing. This presentation will describe the context of policing and how this challenges the creativity of the ergonomist. This will be done through examples from experience comparing policing to other contexts.

Then we will present on a recently completed study on RTW in policing where occupational injuries are common. The challenging physical demands of police work along with operational stress, are barriers to



return to work (RTW) for police service members. The objective of this qualitative research was to examine RTW practices in Ontario police services. In-depth interviews were conducted with members (sworn and civilian) of Ontario police services who have experience with work absence and RTW. Thematic analysis was used for the qualitative interview data. The interview data yielded rich descriptions of the RTW processes in policing. Five themes were generated that describe key aspects of the RTW process: Context, Culture, Accommodation, Communication, Trust, as well as Context and Culture. The themes highlight some of the challenges that ergonomists may face in supporting RTW in policing.

Documenting physical and cognitive job demands is an essential component of a successful return to work and stay at work program. We will explore the role of a job demands description in stay at work and return to work programs and the unique challenges of identifying job demands in a highly variable, non-cyclic work environment. Benefits of job demands descriptions and how they can be used as both preventative and responsive tools for stay at work and return to work after injury will be discussed.

This presentation will be made in English.

Speaker – Wednesday, October 19th, 2022



Jeanne Guérin, CCPE, M.Sc.-HFE, PVT

With over 25 years of experience in ergonomics, human factors and industrial design, Jeanne has successfully held various positions internationally during her career. She is a Human Factors specialist in the aerospace industry (cockpit and aircraft interior design and space capsule design). She is also a Certified Ergonomist (CCPE) in Canada with over 10 years of experience in occupational health and safety. She holds a master's degree in Human Factors-Ergonomics (microgravity in space context) and a bachelor's degree in Industrial Design. Her educational background, combined with industry expertise in digital

human modeling ergonomics in a computer 3D environment and a pilot certificate with an instrument rating, allows her to understand how the human element engages and reacts physically and mentally in a complex system. Jeanne is a certified trainer with Emploi-Québec and is passionate about knowledge transfer.

She has trained engineers, ergonomists, designers, manufacturing workers, office workers, trainers and has presented papers internationally on several occasions.

She has carried out several hundred on-site office ergonomic assessments in administrative offices, medical clinics and laboratories, and is now adapting her practice to on-site and virtual home office assessments to meet the changing needs of the industry.

Most of her industrial experience has been in project management, analysis, design, data collection, testing, and the optimization of human performance in the industrial manufacturing sector. Health, safety and wellness are Jeanne's top priorities. She focuses on the objective measures that new



technologies bring to the advancement of safe human performance in complex systems for users and customers while improving the financial performance of companies.

She is involved in improving the HF/E profession by chairing the Ergo@Large subcommittee of the Association of Canadian Ergonomists (ACE), she sits on the selection committee of the Canadian College for the Certification of Professional Ergonomists (CCCPE) and is a member of the Standards Council of Canada (SCC).

This presentation will be made in French.



Danielle Lemay CCPE, M.Sc

Danielle Lemay is a Certified Canadian Professional Ergonomist (CCPE) and works at Suncor Energy in Calgary, Alberta. She holds a B.Sc. in kinesiology, physical activity and wellness from the University of Sherbrooke and a M.Sc. in kinesiology, major in ergonomics, from the University of Quebec at Montreal.

She spent over 10 years working in the aerospace industry at Pratt & Whitney, where she held various positions in the Environment, Health & Safety field and managed several sites around the world. As her primary responsibility, she developed, led and implemented various HF/E tools and processes on various sites and at the corporate level, to name a few.

She is currently the Corporate Ergonomist at Suncor Energy, tasked with developing and building the company-wide HF/E management program, while supporting all sites. In addition to her current position, Danielle is also the President of ACE-Prairie and Northern Region.

Overview of Human Factors/Ergonomics by Ergo@Large

Ergo@Large has been active since the end of 2020. In this presentation, we will identify:

- o The reasons which led to the creation of the group
- o Our team
- o The 4 priority areas to work on
- o Our achievements
- o Our vision, our five-year plan, our direction
- o Our findings on FH/E around the world
 - United Kingdom
 - United States
 - Brazil
 - India
 - Upcoming (Australia, Africa, Germany, France)

This presentation will be made in French.



Working as a Canadian Ergonomist: Stories and Advice from Coast to Coast

Speaker Bios

Linda Sagmeister – East Coast:

Linda Sagmeister, CCPE and CRSP, works for the Occupational Health and Safety Division for the Government of Newfoundland and Labrador. As the Ergonomist at the Division, she enforces the OHS Act and Regulations from the perspective of ergonomics, in addition to reviewing investigation techniques for Human Factors elements, and acting as a resource in investigation task analysis. She is also active with CSA and with Standards Canada Council (SCC), working on ergonomics standards in Canada and internationally (ISO).

Larissa Fedorowich - Quebec:

I am Larissa Fedorowich and work as an ergonomist, providing ergonomics consulting services for preventative, injury risk and return to work cases in both the private and public sectors. I have a Master of Science designation with a specialization in biomechanics and ergonomics and have obtained the certification of Associate Ergonomist.

Emma Christensen – British Columbia:

I am the ergonomist in Employee Health, Safety and Wellness and look after the ergonomic needs of the approximately 3500 staff and contractors for WorksafeBC. I perform in person and virtual assessments for staff working in the office, at home, in vehicles and on the road. I collaborate with other departments and participate in a consulting role on many projects in our organization that require ergonomic expertise.

Kim Meszaros - Ontario:

Kim Meszaros is a Canadian Certified Professional Ergonomist and has a Master of Science in Kinesiology from the University of Waterloo. Kim has joined the team at the Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD) as the Ergonomics Research Coordinator and she is the Principal Ergonomist at Kinetic Kare. She is passionate about increasing awareness of MSD prevention in the workplace and providing resources to promote employee health, safety and wellness.

Linda Miller – Alberta:

Dr. Linda Miller - OT (C), OTD, MEDes, CPE, and CCPE, is the CEO and Founder of EWI Works International Inc., Western Canada's leading ergonomics and wellness company. With more than 30 years of experience in ergonomics and occupational therapy, Dr. Miller continues to lead EWI Works into new territory, particularly in tech. She is currently an advisor for WELL, an international building standard focused on promoting healthy work environments. Dr. Miller's passion for education and empowerment is reflected not only in EWI Works' services and products, but also in her position as an adjunct professor at the University of Alberta's Faculty of Rehabilitation Medicine.