



**FROM SEA TO SKY:
EXPANDING THE REACH OF ERGONOMICS**

**ÉLARGIR LA PORTÉE DE L'ERGONOMIE
ENTRE CIEL ET MER**

**44th Annual
Conference of
the Association
of Canadian
Ergonomists**

**October 8-10, 2013
Whistler, British Columbia, Whistler Conference Centre
www.ace-ergocanada.ca**

**Workshops
October 7, 2013**

**Conference Proper
October 8-10, 2013**

**Exhibitor Showcase
October 8-9, 2013**

PRELIMINARY PROGRAM



Continuing Education Credits have
been applied for, or are eligible for:

ABIH
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CCPE
BCAK



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

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Association of Canadian Ergonomists
Association Canadienne d'Ergonomie

We are pleased to announce the **44th Annual Conference of the Association of Canadian Ergonomists (ACE)**. The theme, **"From Sea to Sky: Expanding the Reach of Ergonomics"**, is not only symbolic of the world-renowned highway connecting Vancouver to Whistler, but is also resonant with our continued effort to increase awareness of ergonomics to the world. The ACE 2013 Conference will explore the many ways ergonomics knowledge is enlarging and how the application of this knowledge can positively impact everybody.

ACE 2013 will be of interest to ergonomics/human factors professionals, researchers and students, as well as members of allied professions, including: safety, health, rehabilitation, industrial hygiene, industrial design, human resources, psychology, engineering, usability, user experience and facility planning.

Internationally renowned speakers, practicing ergonomists, researchers and students will present their most recent work in oral or poster presentations, panel discussions, workshops, and symposia sessions. The annual conference will also provide ample opportunities for professional networking.

The **technical programme** will include, research, applied studies, and panel discussions on a range of topics spanning the physical, cognitive, behavioural, psychosocial, and organisational aspects of ergonomics. Pre-conference workshops will offer professional development opportunities. We have some exciting keynote speakers and symposia presenting the latest research and practice in ergonomics.

The annual student paper competition in the Undergraduate, Masters Level and PhD Level will be held in conjunction with the conference.

The conference will be held in the **Whistler Conference Centre** in Whistler, British Columbia. It is a world-class facility located in the centre of Whistler Village, a mere two minute walk from the shops and restaurants in Village Square. Whistler also offers a wide range of accommodation options, from hostels to hotels and a large selection of private condos and residences for rent, all within easy walking distance to the Conference Centre. There is something for everyone in Whistler – for more information please visit www.whistler.com.

Please plan on joining us in beautiful Whistler, British Columbia in October 2013.

*Kirsten Willms, M.Sc., CCPE
2013 ACE Conference Chair*

Organizing Committee

Kirsten Willms, M.Sc., CCPE
Conference Chair

Judy Village, CCPE, PhD Candidate
Technical Chair

Abigail Overduin, M.Sc., AE
Sponsorship and Exhibitor Coordinator

Margo Fraser, M.Sc., CCPE
ACE Executive Director

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Register on-line at www.ace-ergocanada.ca For information, call 1-888-432-2223 or 403-219-4001

Keynote Speaker - Tuesday, October 8



Dr. Colin Drury

Distinguished Professor Emeritus of Industrial and Systems Engineering at University at Buffalo: SUNY

Quality and Ergonomics: Coexistence or Collaboration?

Over the past 15 years we have seen evidence that actions to improve industrial HF/E can have positive quality benefits. From the HF/E viewpoint, we expect that improving system ergonomics to reduce system errors will lead to higher quality. System ergonomics typically includes some task variability to meet human needs for both physical ergonomics and socio-technical systems design. However much of the quality improvement literature ignores HF/E, concentrating instead on reducing variance. So how do we reconcile the demands of quality (reduced variance) with the demands for both reduced errors and the human need for some variation? Here we can invoke Ashby's Law of Requisite Variety which states that the controller of a system (machine, task, process, plant) must have enough variability to deal with system disturbances, e.g. from raw materials changes or environmental factors. The implication is that to reduce output variability in the product, we need human variability in the control systems. Both the quality movement and the HF/E movement are indeed correct in their aims. Examples show how this can be achieved in practice and what we can do to make the two disciplines mutually beneficial.

Colin G. Drury is Distinguished Professor Emeritus of Industrial and Systems Engineering at University at Buffalo: SUNY, where his work is concentrated on the application of human factors techniques to inspection and maintenance processes. Since 1989 he has been leading a team applying human factors techniques to reduce errors in aviation maintenance and inspection as Director of Research Institute for Safety and Security in Transportation (RISST). He is also President of Applied Ergonomics Group Inc. He has over 200 publications on topics in industrial process control, quality control, aviation maintenance, security and safety. He is a Fellow of the Institute of Industrial Engineers, the Ergonomics Society, the International Ergonomics Association and the Human Factors & Ergonomics Society, receiving the Bartlett medal of the Ergonomics Society and both the Fitts and Lauer Awards of the Human Factors Ergonomics Society. In 2005 he received that FAA's Excellence in Aviation Research award, while in 2006 he was awarded American Association of Engineering Societies' Kenneth Andrew Roe Award.



Association of Canadian Ergonomists
Association Canadienne d'Ergonomie

ACE 2014 Annual Conference
Montreal, Quebec - Fall 2014

Joint Keynote Speakers - Wednesday, October 9



Dr. David Rempel

Professor of Medicine, UC San Francisco, Professor of Engineering, UC Berkeley, Director, Ergonomics Graduate Training Program, UC Berkeley

Results of multi-center prospective studies on occupational carpal tunnel syndrome

Between 2001 and 2010 six research groups in the US conducted coordinated multi-year, prospective studies of carpal tunnel syndrome (CTS) incidence among US workers from broad range of industries and collected detailed biomechanical and psychosocial exposure data with follow-up symptom, physical examination, and nerve conduction measures on every subject. After pooling the data, the sample included 3,515 participants, followed up to 7 years, who did not have CTS at baseline. Exposure assessment included worker estimated and objective measures of hand repetition, duty cycle, wrist posture and grip force. Early findings on risk for new CTS and personal factors (e.g., age, BMI, medical conditions, non-occupational hand activities) and work psychosocial and biomechanical factors will be presented. For some risk measures clear exposure-response relationships were observed. The findings provide practical information that can improve the effectiveness of workplace ergonomic programs.

David Rempel is Professor of Medicine at the University of California at San Francisco, Professor of Engineering at UC Berkeley, and director of the ergonomics graduate training program at UC Berkeley. He is a Fellow of the American College of Occupational and Environmental Medicine, a Fellow in the American College of Physicians, a Fellow of the Human Factors and Ergonomics Society and a Certified Professional Ergonomist.

His research is on understanding how tendons, muscles, and nerves are injured at work and how workplace tools and tasks should be designed in order to prevent musculoskeletal disorders. In the past 10 years his research team has conducted randomized controlled trials of workplace ergonomic interventions in the office, garment, dental, and construction sectors. The publications of his group and a description of research projects are at <http://ergo.berkeley.edu/>

Conference Proceedings on CD

All full conference and full day conference delegates will receive one complimentary copy of the conference proceedings on CD. Individuals who are unable to attend the conference or are attending only the workshops or for a half day of the conference, or delegates wishing an additional copy, may purchase the proceedings for a fee of \$40.00 per copy.

Purchase can be made via the attached registration form or on-line registration.

Joint Keynote Speakers - Wednesday, October 9

Dr. Stephen Bao, CPE, CCPE

Ergonomist, Washington State Department of Labor & Industries Safety and Health Assessment and Research for Prevention (SHARP) Program

Breadth and Depth Trade-offs in Tackling Musculoskeletal Disorders in the Workplace

Although SHARP has been studying musculoskeletal disorders in industry for the last 20 years, two important efforts bring both breadth and depth to the effort. The first has been the Consortium of 7 different research groups (NIOSH, SHARP, UCFS, U Iowa, Washington University-St Louis, U Wisconsin-Milwaukee, and University of Utah-Salt Lake). This allows for greater power in detecting important relationships than any single study alone. Coming up with case definitions for specific disorders (e.g., CTS, hand/wrist tendinitis and epicondylitis) has been relatively straight forward compared to coming up with common exposure matrices. For example, although we all collected TLV for HAL, we did not necessarily collect it in the same way. Follow-up frequency of exposure assessment varied between research groups.

Nonetheless, the pooling of consortium member data (after the fact) provides incredible opportunity to determine what are important contributors to CTS and epicondylitis in the workplace.

An additional effort being conducted by SHARP involves visiting workplaces in the same industry subsectors and size workplaces, but with one company with high WC rates and the other with low rates to figure out what makes the difference. We are using 6 different checklist type exposure assessment methods to assess the workplaces, and management and worker safety committee member interviews regarding organizational culture and safety climate with the goal of developing better methods for engineers to use in design and for health & safety practitioners to use in musculoskeletal injury and assessment.

Stephen Bao received his Ph.D. and Licentiate both in Industrial Ergonomics from the Luleå University of Technology, Sweden, an MS in Orthopaedic Biomechanics from Shanghai Second Medical University, and a BS in Mechanical Engineering from Shanghai Jiaotong University. Before joining SHARP in November, 1997, Stephen spent over 12 years in ergonomic research and consultation with the University of Waterloo (Canada), Advanced Ergonomics Inc. (Canada), Ergonomics Plus Inc. (Canada), Atlas Copco Tools (Sweden), the Swedish National Institute for Working Life, Luleå University of Technology, and Tongji Medical University (China). Stephen's major research interests include physical exposure assessment and workplace ergonomics risk evaluation, ergonomics intervention and hand tool ergonomics.

Keynote Speaker - Thursday, October 10



Dr. John Lewko

Director, Centre for Research in Human Development, School of Rural and Northern Health, Laurentian University

Advancing Safety From the Front Line: The Ergonomist as Investigator and Change Agent

Ergonomists often find themselves working through the immediate causes of an occurrence at what Reason calls the 'sharp end'. What they do from there can be influenced by which ergonomics hat they wear: physical, cognitive, or organizational. Drawing on various success and failure experiences from the mineral processing industry, it will be argued that risk mitigation and prevention of future occurrences calls for shifting the focus from the front line worker to the conditions of work and its complexity. Integrating the three hats better positions the ergonomist to function within a systems framework and increases the possibility of contributing to system change. Using a human factors investigation model assists the ergonomist in integrating the three hats.

John H. Lewko is Professor of Human Development at Laurentian University in Sudbury Ontario. He spent his early professional years as a human performance specialist dealing with individual and team performance. He transitioned in to dealing with health, safety and environmental issues over eighteen years ago, giving particular attention to the areas of human factors, traumatic injury prevention, safety management systems and organizational change in various sectors, from heavy industry and transportation to health care and sports. He is a trained Transportation Safety Board of Canada human factors investigator and continues to both actively investigate and train investigators in industrial settings. He has worked with various stakeholder groups, including safety associations (Ontario Service Safety Alliance; Mines & Aggregates Safety & Health Association; Construction Safety Association), regulators (Transport Canada), unions (USW) and private sector firms (INCO Ltd Ontario, Manitoba & Europe; Vale Ltd., Falconbridge Ltd., Hawker Beechcraft; Mac's Convenience Stores Inc.). He is a former Board Member and past Chair of the Injury Prevention Committee of the Ontario Neurotrauma Foundation. He is currently working with Dr. Angela Colantonio of Toronto Rehabilitation Institute on analyzing the investigation reports of 200 construction fatalities in Ontario.



Ergonomics Canada magazine

Watch for issue 5 of *Ergonomics Canada*, ACE's annual magazine for the public. Available in both hard copy and electronically, *Ergonomics Canada*, provides timely information on various aspects of ergonomics and human factors. The electronic issue will be available via the ACE website (www.ace-ergocanada.ca) in mid-September, 2013. You can also download copies of past issues.

Schedule at a Glance (subject to change)

Time	Monday October 7	Tuesday October 8	Wednesday October 9	Thursday October 10
7:30	Registration	Registration	Registration	Registration
8:00	Workshops	Welcoming Address	Joint Keynote Address	Keynote Address
8:30		Keynote Address	Dr. David Rempel and Dr. Stephen Bao	Dr. John Lewko
9:00		Dr. Colin Drury		
9:30				
10:00	A.M. Break	A.M. Break & Exhibitor Showcase	A.M. Break & Exhibitor Showcase	A.M. Break
10:30	Workshops	Concurrent Paper and Symposia Sessions	Concurrent Paper and Symposia Sessions	Concurrent Paper and Symposia Sessions
11:00				
11:30				
12:00	Lunch	Lunch / ACE AGM Exhibitor Showcase	Lunch & Exhibitor Showcase CCPE Q&A Session	Lunch, Student Awards & Closing Address
12:30				
13:00	Workshops		Concurrent Paper and Symposia Sessions	
13:30		Student Papers		
14:00				
14:30				
15:00	P.M. Break	P.M. Break & Exhibitor Showcase	P.M. Break & Exhibitor Showcase	
15:30	Workshops		Concurrent Paper and Symposia Sessions	
16:00		Concurrent Paper and Symposia Sessions	Concurrent Paper and Symposia Sessions	
16:30				
17:00				
17:30		ACE Regional Meetings	Delegate Social Garibaldi Lift Co. Bar & Grill	
18:00		Opening Reception & Exhibitor Showcase		
18:30				
19:00				
19:30				
20:00				

Pre-conference Workshops - Monday, October 7, 2013

We are pleased to present a diverse selection of educational workshops for you to update your skills and knowledge. Learn from experts and share experiences with colleagues who have similar interests. **Please note that workshop fees are not included as part of the conference registration rate.**

Pre-Conference Workshops

This year, 2 full-day workshops and 6 half-day workshops are being offered on Monday, October 7, 2013. Participants may attend 2 half-day workshops for the same price as a full-day workshop (see Registration Form at the back of this program). Workshops will be given in the language indicated in the descriptions below.

Workshop Schedule

Full Day Workshops 8:00 am - 5:00 pm

1. Practical Safety Risk Management Training – From Hazard Identification to Effective Safety Action
2. Getting Proactive – Approaches Tools and Metrics for Integrating Ergonomics into Work Systems

Half Day Workshops 8:00 am - 12:00 pm

3. Behaviour Change Workshop
4. Let's Talk About Office Ergonomics—points beyond today's guidelines
5. Gaining Insight from Organizational Stakeholders: Using Qualitative Interviewing in Ergonomics Research

Half Day Workshops 1:00 pm - 5:00 pm

6. Sampling Strategy for Ergonomists: Who, When and How Long to Measure
7. Implementing the Leadership in Energy and Environmental Design (LEED) Ergonomics Credit for New Construction
8. Introduction to Human Vibration

Workshop Descriptions

1. Practical Safety Risk Management Training—From Hazard Identification to Effective Safety Action

Duration: Full day **Level:** Beginner to Intermediate **Language:** English

Everybody in a work environment should be a risk manager, either as a legal obligation or because their safety culture demands it. Routinely, often by default, the role of the risk assessor falls to the staff ergonomist. While much has been written academically about how to conduct the risk management process, managers, ergonomists and other designated personnel often find themselves frustrated when trying to do it in their real world setting. Drawing on the knowledge and skills of two experienced practitioner, this workshop is constructed around skills development and adult learning principles. As such, the focus is on participant involvement, making use of case studies and facilitated discussions. The following topics will be covered:

- Proactive and Reactive Hazard Identification – recognizing those conditions that can lead to harm
- Investigations – recognizing the critical link between investigations and risk management; ensuring a proper understanding of factors that account for the hazards, and that need to be addressed
- Practical Risk Assessment – what safety issues do I need to worry about first
- Developing effective action plans – from buffering the sphere to transforming the organization
- Assessing Return on Investment – how can you establish that you have made a difference?

Target Audience: The workshop will be of interest to all those interested in developing skill in effectively assessing and managing risks, for example Managers, OHS Committee members, Ergonomists, Safety Management Systems managers, OHS and Risk Managers, and Injury Prevention Coordinators.

Facilitated by: Maury Hill, MASc (Ergonomics / Human Factors) Mary Louise Gifford, MASc (Health Ergonomics)

Register on-line at www.ace-ergocanada.ca For information, call 1-888-432-2223 or 403-219-4001

Workshop Descriptions continued...

2. Getting Proactive—Approaches, Tools and Metrics for Integrating Ergonomics into Work System Design

Duration: Full Day

Level: All

Language: English

This workshop will provide a framework and evidence for why and how to integrate human factors (HF, or ergonomics) more proactively into the design of production systems to prevent injuries and optimize operator performance. This is based on our current research with Manufacturing Engineering teams at BlackBerry®. Several tools and techniques, adapted for HF from fields such as operations research and industrial engineering, will be demonstrated and discussed to illustrate how ergonomists can learn more about the design process in their organization, and the strategic business goals of their management teams. The use of process maps can help indicate for ergonomists and others in the organization the best approaches for integrating HF into production systems design. Several other adapted industrial engineering tools will be demonstrated, such as a HF-failure mode and effects analysis, and a HF-design for assembly scorecard. We will illustrate the process of how these tools were customized in participation with Manufacturing Engineers at BlackBerry®, and led to required HF targets in production design processes. The workshop will be interactive, with short exercises for participants and discussions among the group.

In the afternoon, the workshop will shift its focus to ways of assessing the level of HF integration in an organization. Have you ever wondered "How will I know when the HF we are doing is *World Class*"? Have you had people ask "How is that HF stuff going? My boss would like to know"? We have heard these questions from managers or supervisors but have yet to find an off-the shelf, comprehensive tool to assess the level of HF integration and performance in an organization. Throughout the afternoon session we will explore why it is important to measure HF integration, the various approaches that might be taken to measure integration, and the areas of influence for HF within the organisation. Participants will be introduced to a new tool called "HFIT" - the Human Factors Integration Tool. The audit-like tool can be used to indicate how close your organization is to achieving *World Class* HF integration, and, hopefully, inspire actions for continuous improvement. The final discussion of the day will cover some of the lessons learned, facilitators, and barriers to integrating HF in design processes within organizations. (Please note that the presenters will be audio recording the afternoon discussion about measuring HF integration. This information will be used to improve the tool to better suit user needs. All contributions will remain anonymous.)

Target Audience: Ergonomists, Engineers, Managers, OHS Personnel

Facilitated by: W. Patrick Neumann, Michael Greig & Judy Village

3. Behaviour Change Workshop

Duration: Half day—morning

Level: All Levels

Language: English

Understanding the drivers behind health-related behaviours has been a challenge for many decades and a number of explanatory models have been developed. The Theory of Planned Behaviour (Ajzen, 1991; Ajzen & Madden, 1996) is one of the most widely used models, and whilst the majority of studies fall within the field of 'health', it has been used within 'health & safety' in relation to driver behaviour (Elliot, Armitage & Baughan, 2003), wearing of protective equipment (Quine, Rutter & Arnold 2001), food hygiene (Clayton & Griffith 2008), and manual handling (Johnson & Hall, 2005).

A fairly simple model, it suggests that intention to undertake a particular behaviour is influenced by three main issues, namely: attitude towards that behaviour; the subjective norms (pervading culture) in relation to the behaviour; and the degree to which an individual feels able to exert control over their behaviours. Drawing on applied and fundamental research from psychology, this workshop will support attendees to understand the drivers of behaviour and use this understanding to improve the success of their workplace interventions.

Goals:

- provide up to date theory about Behaviour Change models from evidenced based psychology
- apply these models to the workplace
- give attendees the opportunity to apply this knowledge to issues in their workplaces/practice

Target Audience: Ergonomists and allied professionals

Facilitated by: Dr Claire Williams, Mr Andrew Baird, Prof David Sheffield

Workshop Descriptions continued...

4. Let's Talk About Office Ergonomics—Points Beyond Today's Guidelines

Duration: Half Day morning **Level:** All **Language:** English

Many of us as practicing ergonomists have done office ergonomics evaluations. We often give our clients recommendations and trainings based on currently available office ergonomics guidelines (e.g. Office Ergonomics: Guidelines for preventing Musculoskeletal Injuries, by WorkSafe NB, How to make your computer workstation fit you, by WorkSafe BC, Guideline on Office Ergonomics, by Canadian Standards Association, etc.) in order to improve musculoskeletal health conditions among office workers. It would be interesting to see how successful we are or sad to learn how unsuccessful we were. Either way the information about our past work in office ergonomics interventions would help us in improving our future ergonomics practices in the office environment.

Just like the rapid advances of computer technology, office equipment and technologies that are used to better the ergonomics of office work and knowledge of ergonomics improvements for office workers keep updating. How do many of the new office equipment (e.g. ergo keyboard/mouse, office ball, treadmill workstations, etc.) work, and how many of us have applied some of the new concepts (e.g. using negatively tilt keyboards) in our recommendation and do they really work? These might be some of the questions that many of our ergonomics practitioners have in our minds.

Target Audience: This workshop is designed for ergonomists, kinesiologists, physical therapists and other safety practitioners who practice office ergonomics, and managers who are responsible for the health of office workers. It will also be beneficial to students who plan to practice ergonomics in the office environment.

Facilitated by: Stephen Bao, Ph.D., CCPE, CPE

5. Gaining Insight from Organizational Stakeholders: Using Qualitative Interviewing in Ergonomics Research

Duration: Half Day morning **Level:** Intermediate **Language:** English

This workshop is intended to introduce researchers and practitioners to the topic of qualitative interviewing and qualitative data analysis. In the field of ergonomics the use of qualitative interviewing has gained more popularity as a way of examining contextual factors that influence ergonomic interventions. Effectively conducted qualitative interviews with organizational stakeholders can provide us with critical data to understand organizational context and potentially improve intervention outcomes. This session will help participants answer questions such as, "How can I better understand workers' and managers' perspectives?" "What information can qualitative interviews provide that other methods cannot?" "How do I carry out a qualitative interview?" "How do I analyze the data from qualitative interviews?" This workshop will be divided into two parts: the first portion of the workshop will focus on qualitative interviewing and the last hour will introduce participants to the basics of qualitative data analysis. In the interview portion of the session we will discuss the fundamentals of qualitative interviewing and participants will be taken through the steps of interviewing – from sample selection to the interview itself. In particular, we will explore the differences between qualitative interviewing and survey (structured) interviewing, interview question development, elicitation techniques (e.g., verbal and non-verbal cues), and question types. In the last hour of the session we will discuss the analysis of interview data and go through the steps in inductive data analysis including the coding of data, identification of patterns in data, and issues of validity and reliability.

Target Audience: Ergonomists, OHS Personnel, Engineers

Facilitated by: Shane Dixon, Human Factors Engineering Lab, Dept of Mechanical & Industrial Engineering, Ryerson University, Toronto, Ontario

Workshop Descriptions continued...

6. Sampling Strategy for Ergonomists: Who, When, and How Long to Measure

Duration: Half Day afternoon

Level: Intermediate

Language: English

Have you ever had the experience of going to a worksite for an ergonomics assessment and the workers say: "You should have been here yesterday when we had 14 orders to fill and then a giant spill... Today is too easy!"

When using observational methods, how should professionals decide whom to measure, for how long, and when? How do we know our measurements reflect the 'true' scenario?

Assessment of posture, manual materials handling, and vibration are critical to modern ergonomics practice. Whether we want to check for compliance with an exposure limit, or test for changes before and after an intervention, ergonomic measurements are critical to quantifying working conditions. For practical reasons, observation and checklist methods are most often used by ergonomists in the field.

However, there is very little information for practicing professionals on whom they should measure, for how long, and how many times. This course will explain the challenges and strategies of planning measurements using exposure variability as a framework.

Learning Objectives

At the end of the course, attendees will be able to:

- Describe the sources of variability in physical exposure measures like posture and manual materials handling
- Use existing information to estimate variability
- Describe the challenges of highly-precise measurement
- Balance the trade-off of time and cost with measurement precision
- List strategies to get the most measurement precision out of existing resources
- Draft sampling plans that are efficient and informative

Who Should Attend: practicing OHS professionals, with an emphasis on ergonomists. This is an intermediate level workshop. Attendees in this course should:

- Have experience with field-based, observation-based ergonomic assessments
- Have familiarity with observation/checklist methods such as RULA, REBA, PEO, OWAS

Facilitated by: Catherine Trask, PhD, University of Saskatchewan

Workshop Descriptions continued...

7. Implementing the Leadership in Energy and Environmental Design (LEED) Ergonomics Credit for New Construction

Duration: Half Day afternoon

Level: Intermediate

Language: English

Despite guidance from the United States Green Building Council (USGBC) on the requirements for earning a Leadership in Energy and Environmental Design (LEED) ergonomics credit in the Innovation in Design category, few projects have received the credit. The University of California, Berkeley ergonomics program, Ergonomics@Work, has aligned the ergonomics strategy to those of the USGBC and LEED to achieve the ergonomics credit in several new buildings. This half-day workshop for intermediate ergonomists and associated professionals will teach the steps needed to obtain the credit and offer small group discussion on ways to move the process forward at your location. As a profession it is up to ergonomists to create the road map that incorporates ergonomics into the green building design. The attendees will leave the workshop with the following information:

1. A general understanding of USGBC and LEED

- Environmentally responsible buildings that are profitable and healthy places to live and work
- LEED professionals
- Assessing building performance and meeting sustainability goals

2. The components of the ergonomics credit for new construction

- Four steps required to achieve the credit
- Credit interpretation ruling
- Developing an ergonomics strategy that links to the USGBC requirements

3. Knowledge of the design team members for a new construction project

- Roles and responsibilities
- Ways to get buy-in for ergonomics

4. Ways to develop the supporting documentation

- Checklists for ergonomics strategy and design elements
- Pre-approved product lists
- Workstation evaluations and user survey
- Narrative

5. Two projects that have received the LEED credit for ergonomics

- Activities achieved prior, during and after the project
- Lessons learned
 - Ways the process did not work and how it was handled
 - LEED equivalence

6. How to take the process forward where you work

- Small group discussion

Target Audience: Intermediate ergonomists and associated professionals

Facilitator: Mallory Lynch, Ergonomist, University of California, Berkeley

Workshop Descriptions continued...

8. Introduction to Human Vibration

Duration: Half Day afternoon

Level: All Levels

Language: English

As ergonomists or safety practitioners, many of us probably have been asked whether a worker who is using power tools or driving a forklift truck is at risk to the vibrations that he or she is exposed. It is a well-known fact that vibrations have adverse health effects on human operators. How can we evaluate human vibration exposures? What are the relevant standards and guidelines related to human vibration exposures? What shall we do when we find out a worker is under excessive vibration exposures? How effective are some of the commonly recommended PPEs such as anti-vibration gloves in protecting workers using vibrating tools? These might be some of the common questions for many of our safety and health practitioners and ergonomists.

Human vibration exposures are often resulted from hand-held or hand-guided power tools (e.g. jack hammers, impact wrenches, and lawnmowers), and various motor vehicles (e.g. forklift trucks, backhoe loaders, and asphalt pavers). Vibrations are often transmitted to the human operators through the operators' hands (the so-called hand-arm vibration, or HAV) or through the buttock and feet (the so-called whole-body vibration, or WBV).

This workshop aims at (1) providing participants with introductory information about how HAV and WBV exposures are transmitted to and throughout the body, (2) stating the adverse health associated with HAV and WBV exposures, (3) explaining how HAV and WBV exposures are measured and how they can be roughly estimated for practical purposes, (4) citing core components of relevant HAV and WBV standards, and (5) identifying possible ways to control or reduce HAV and WBV exposures.

Target Audience: This workshop is designed for ergonomists, kinesiologists, physical therapists and other safety practitioners who practice ergonomics in industrial settings where vibrating power tools and/or vehicles/equipment are of concerns. Managers who are responsible for health and safety in these settings will also find the workshop be informative. This workshop will be beneficial to students who plan to consider ergonomics as their future career as well.

Facilitated by: Stephen Bao, Ph.D., CCPE, CPE

CCPE Certification Application Question & Answer session

A special question and answer session on the professional certification (CCPE) application process will be held during lunch on Wednesday October 9, 2013 (12:15 pm to 1:30 pm). A separate table will be available for applicants to meet and have lunch with one or more CCCPE board members.

This session will allow potential applicants to ask questions about the specifics of the process and requirements, to assist them in completing their applications. Participants are encouraged to preview the application information available through the www.cccpe.ca web site in advance and to submit their questions ahead of time to info@cccpe.ca.

Cost: No Charge

Facilitators: CCCPE Board Members

Symposia and Panel Sessions

This year, nearly every session will include an option for a panel or symposia. These sessions will be led by industry experts in a number of topics. Each contributor will present their take on the session topic, and time will be allowed at the end of each session for discussion. These will be a great opportunity for interaction with your colleagues and potentially even some debate!

Here is a peek at the titles and facilitators of the sessions planned to date:

Panel/Symposium Title	Facilitators
Office Ergonomics Training: Comparing In-Person Training to e-Learning Training to a Blended Training	Dr. Benjamin C. Amick III, Dr. Dwayne van Eerd, Trevor King, Karen Turner
Ergonomic Projects gone wrong – lessons learned from the field	Dr. Maury Hill, Audrey Lalumiere, Jason Kumagai, Dr. Patrick Neumann
Knowledge Transfer and Exchange: Approaches, Networks and Messages	Dr. Dwayne Van Eerd, Trevor King, Dr. Benjamin C. Amick III
Ergonomics and Sustainability – a natural fit	Aaron Miller, Mallory Lynch, David Antle, Dr. Colin Drury
Unintended Consequences of Adaptive Behaviour – Can the MSI Risk Factors Predict?	WorkSafe BC: Heather Kahle, Jenny Colman, Tami Perkins
Gaps in Accident Investigation	Dr. John Lewko, Maury Hill, Jeff Dolan, Wendy Olsson, Bruce Jackson
Work Related Musculoskeletal Disorder Prevention—where do we go from here?	Dr. David Rempel, Dr. Barbara Silverstein, Dr. Jim Potvin, Dr. Benjamin C. Amick III

ACE Corporate Membership

ACE aims to promote ergonomics and to raise the standards of practice in ergonomics. Through our Corporate member program, we are building stronger links between ACE and private and public enterprise in pursuit of this mission.

Corporate members will be recognized as supporters of ergonomics in Canada. They will help ACE to achieve its goals and ACE will reciprocate with special Corporate member benefits. The program is a great step for both ACE and the field of ergonomics in Canada and we welcome the partnership opportunities it will provide!

Some of the advantages associated with Corporate membership include:

- Recognition as a supporter of ergonomics in Canada
- Visibility on the ACE Web site
- Access to the network of Canadian Ergonomists including professional consultants and researchers
- Access to national and regional conferences and workshops
- Member advertising rates for *Ergonomics Canada* magazine

For more information about Corporate membership, please contact the ACE National Office at 1-888-432-2223

Conference Social Events



Welcome Reception & Exhibitor Showcase

Tuesday, October 8, 2013

Sea to Sky Ballroom B/C, Whistler Conference Centre

Join other conference delegates and presenters at this year's opening reception to be held on Tuesday, October 8, in the Sea to Sky Ballroom B/C. This is an excellent opportunity to catch up with school mates or network with like-minded colleagues from across Canada, the United States and other parts of the world. In addition, you can view the latest and greatest ergonomics products and services being showcased by our exhibitors!

Time: 6:00 pm -8:00 pm

Cost: Included when registered as a full conference delegate (includes one complimentary drink ticket and appetizers). Additional tickets can be purchased for guests or delegates not registered for the full conference using the registration form or on-line, at a cost of \$40.00 each.



Social Event

Wednesday, October 9, 2013

Garibaldi Lift Co. Bar & Grill
Whistler Village

This year's social event for the ACE Conference will be held at the Garibaldi Lift Co. Bar & Grill. Nestled at the base of Whistler Mountain, above the Whistler Village Gondola, the GLC has classic ski lodge charm with an open-floor plan, floor-to-ceiling windows and a giant rock fireplace. Join your friends and colleagues for a drink, appies and/or dinner. A full menu will be available. The details for this event are as follows:

Time: Arrive any time after 6:00 pm

Transportation: Walk—it is right in the Village

Cost: **One free drink ticket** is included with conference registration, compliments of the BC-YK and PNR Regions. Individuals are responsible for purchasing their own food and beverages beyond this from a full pub-style menu. Mains range from \$13-\$16.

Minors are permitted until 8 pm.

This event promises to be memorable and enjoyable for everyone; we hope to see you all there!

Conference Social Events

Tours, Activities, and Tourist Attractions

Arranged via Club Intrawest

We have arranged with Club Intrawest to coordinate social tours you may be interested in before or after the ACE conference. They are doing all the booking and arrangements for us and providing a special discount for our ACE conference attendees and families. If you are interested in any of the activities, please contact Iona Lake directly. You can put together a group, include family members, or go alone. Iona will connect with you directly.

For your convenience please refer to the short reference sheet found on the ACE 2013 conference website for your Activity options on your Whistler visit.

Once you have an idea of which activity you are interested in please view our web site link www.activitiescentral.com for an in depth description's and views. This usually can answer your questions and confirms your interest in which activity to enjoy.

Once you have decided which activity you would like to attend please email ilake@clubintrawest.com with your activity request, stating the following:

Conference Name: Association of Canadian Ergonomists Annual Meeting

Name of Activity:

Number in your group:

Date preference:

Approximately Time preference:

Intrawest can then contact you directly to confirm your activity reservation. They will also be issuing you a welcome resort package that you can receive upon your arrival. This will assist you in retail and restaurant reduced prices for your visit. Also village maps, discounted access to the Aboriginal Cultural Center and current local events.

If you have any questions please email Iona Lake so their team can be of assistance.

Iona Lake

Activity Central Ambassador/Marketing Representative

Club Intrawest - Whistler

Member Since 2007

4580 Chateau Boulevard

Whistler, BC

Canada

V0N 1B4

604.938.8114 (p)

604 698 0656 (c)

604.938.4584 (f)

www.clubintrawest.com

Venue & Accommodations

Accommodation

Rooms rate have been arranged at the Hilton, Aava, Crystal Lodge and Listel Hotels in Whistler just a short walk from the Whistler Conference Centre. Bookings can be made via this link: <http://www.whistler.com/delegates/ace/>

Hilton Whistler Resort and Spa	Rooms starting at \$149/night
Aava Whistler Hotel	Rooms starting at \$99/night
Crystal Lodge and Suites	Rooms starting at \$124/night
Listel Hotel Whisler	Rooms starting at \$115/night

Travel - Getting to Whistler

Whistler is compact and vehicles are not needed to move between the WCC and hotels nor to move about most areas of the village.

Whistler is easily accessible from Vancouver. Vancouver International Airport (YVR) is a main port of entry into Canada with direct connections to large cities around the world. Options for travel from YVR to Whistler include:

Bus:

Pacific Coach Lines – Scheduled & Charter Bus Service www.pacificcoach.com

Greyhound Bus Service – Scheduled Bus Service www.greyhound.ca

VIP Whistler Transportation - Sedan, SUV, Charter & Executive Van www.vipwhistler.com

Whistler Connection – Van, Minibus & Motor Coach www.whistlerconnectiontravel.com

Rail:

Take the Whistler Sea to Sky Climb and discover the dramatic beauty of British Columbia's Sea to Sky Corridor from a unique perspective while relaxing in comfort and style. As the train hugs the oceanfront of Howe Sound, then winds through deep canyons and climbs the steep mountain grades towards Whistler, you will enjoy the front row seat to the endless array of breathtaking views!

Rocky Mountaineer – Sea to Sky Climb Train www.rockymountaineer.com

Air:

The Coast Mountains of British Columbia boast some of the most spectacular wilderness scenery in the world and there's no better way to appreciate it than from the air! The jewel of this amazing landscape is Garibaldi Park, just a few minutes by air from the heart of Whistler. Transfers include knowledgeable commentary regarding the fascinating history and geology of this amazing area.

Whistler Air – Scheduled or Charter Floatplane service www.whistlerair.ca *May to October

Blackcomb Aviation –Helicopter service www.blackcombhelicopters.com *Weather dependent

Rental Car:

Rental cars are available from the Vancouver International Airport. Note, though, that vehicles are rarely needed when in Whistler. Most individuals tend to park their vehicles when in Whistler and not use them again until they depart.

Exhibitor Showcase

Join our exhibitor showcase!

ACE 2013 brings together a diverse and influential group of professionals from throughout North America whose common goal is to enhance the safety and effectiveness of people at work and at play. Involvement with this event provides high profile exposure for your people, your products and your organization. Contact info@ace-ergocanada.ca for more information!



ergoCentric is committed to fitting 100% of office workers with an ergonomically correct seating solution. Our new 100% money back comfort guarantee ensures you can't go wrong recommending ergoCentric seating.

www.ergocentric.com

ACE Corporate Member
Platinum Conference Sponsor



WorkSafe BC is dedicated to promoting workplace health and safety for the workers and employers of BC. We consult with and educate employers and workers, enforce the Occupational Health and Safety Regulation, and work with affected parties to provide return-to-work rehabilitation, compensation, health care benefits, and a range of other services.

www.worksafebc.com

Platinum Conference Sponsor



The Global Group Introducing Productivity Solutions™. A comprehensive series of ergonomically sound products, naturally connecting people with technology to enhance comfort and productivity. Designed to Fit* you and your technology and fully integrate with Global products for Total Office Solutions. *Fit = Move + Match + Support

www.globaltotaloffice.com

ACE Corporate Member
Silver Conference Sponsor



Lifeform Furniture Manufacturing Inc. products have been engineered to provide the best support for virtually any user. These chairs and support cushions combine many ergonomic features along with a memory foam antimicrobial to insure proper posture for any period of time.

www.lifeformchairs.com

ACE Corporate Member



VistaLab Technologies has revolutionized the look and performance of hand-held pipetting with our ergonomic Ovation BioNatural Pipettes. Ovation has numerous features not found in other pipettes that boost efficiency, complement a unique ergonomic design, and ensure reliable, consistent accuracy and precision, especially at low volume settings. Electronic, multichannel, macro, adjustable and fixed volume models cover liquid handling volume ranges from 0.2µL to 10mL. VistaLab Technologies offers Canadian Ergonomists in-house educational displays as well as demo Ovation Pipettes for in-lab evaluations.

www.vistalab.com



Angel Accessibility Solutions Ltd. is a British Columbia based company with 16 years' experience of providing patient handling solutions. At Angel, we stress the importance of quality installations, ensuring all potential concerns are addressed at the design stage of your project and commit to supporting each of our clients over the long term. Our Brand Promise: 'The Right Solution Every Time' provides the foundation for what Angel is built on and gives our clients the confidence in knowing they will be provided with a solution to overcome any patient handling situation. The continuity between Angel's support team and your staff maintain long standing local relationships striving to improve the future of patient care. Our commitment to provide service, training and support is why Angel continues to be one of the largest distributors of patient handling solutions in North America.

www.angelsolutions.com

Exhibitor Showcase



Chairlines is your trusted Ergonomic product specialists, providing product information and practical advice aimed at improving comfort, health, and productivity. Being one of the first Ergonomic furniture stores in Canada, our reputation is spoken highly of within the Ergonomics community. Chairlines is locally owned, serving the Lower Mainland and shipping nationally for more than 25 years. Offering an extensive line of chairs and accessories, Chairlines is also starting to be recognized as the equipment experts for sit to stand applications. We value the relationship that we have built with our community of Ergonomists, Occupational Therapists and Occupational Health and Safety professionals. We look forward to hearing from you on how we can help problem solve to find a solution for your clients' needs.

www.chairlines.com



Ergostanz. The STANZ is a unique upright workstation that gets people out of their chair and onto their feet, without the fatigue of standing up all day. Using the STANZ means people are leaning back at an ergonomically ideal angle for work efficiency.

www.ergostanz.com



Office Comfort Ergonomics

Raise your desk, don't replace it .

Accessories to transform your workstation to an effective standing configuration

- Semi-permanent Standing configuration

- Suitable for wide adoption

- Easy, modular and stable installation

- Non-marking

www.sitstandoffice.com



Contour Design has specialized in manufacturing ergonomic input devices since 1995. Our core philosophy is to continue to provide evolutionary products that allow computer users to work on their computers for extended periods of time without the risk of physical pain or injury. Our RollerMouse products help eliminate the need to reach for or grip the mouse. Visit our booth to experience unrivaled comfort, control, and pinpoint accuracy with RollerMouse Re:d, an innovative, ergonomic mouse that sits in front of a keyboard and allows users to stay in the optimal work zone with relaxed hands and a neutral wrist posture.

www.contour-design.com



Dalimar Instruments. For over 25 years, Dalimar Instruments Inc. has offered cutting-edge products and service in the area of acoustic and vibration testing equipment, sensors and data collection. We cater to a wide range of customers and applications where accelerometers & transducers are needed, as well as calibration services for all types of equipment used in the testing of electric motors and human /

system vibration levels, as well as sound level and pressure testing.

www.dalimar.ca



Department of Biomedical Physiology and Kinesiology, Ergonomics Certificate and BPK Co-op program, Simon Fraser University

ACE 2013 Registration Form (page 1 of 3)

On-line registration on our conference web site at www.ace-ergocanada.ca is the fastest way to complete your registration. However, if you prefer, you may fax or mail this form with your registration information.

Personal Information

☐ Mr. ☐ Mrs. ☐ Ms. ☐ Dr. ☐ Prof

Name _____

Job Title _____

Company _____

Mailing Address _____

City _____ Prov/State _____ Postal Code: _____

Phone: _____

E-mail: _____ (all updates and confirmations will be communicated via e-mail)

☐ I require special services and have attached a list of my needs

CONFERENCE REGISTRATION

Full Conference – Oct 8 – 10, 2013

(Includes lunch each conference day, conference program and conference proceedings on CD-ROM)

All rates in \$CDN	ACE Member	Non-Member & ACE Affiliate Members	Student
Early (by Sept 6, 2013)	565.00	665.00	115.00
Late (after Sept 6, 2013)	655.00	755.00	165.00

Day Rate - Full Day

(Includes lunch, conference program and proceedings on CD)

All rates in \$CDN	ACE Member	Non-Member & ACE Affiliate Members	Student
Early (by Sept 6, 2013)	285.00	335.00	70.00
Late (after Sept 6, 2013)	330.00	380.00	85.00

Select date(s) of attendance:

☐ Oct 8 ☐ Oct 9

1/2 Day Rate

(Includes lunch, and conference program)

All rates in \$CDN	ACE Member	Non-Member & ACE Affiliate Members	Student
Early (by Sept 6, 2013)	190.00	225.00	50.00
Late (after Sept 6, 2013)	220.00	255.00	60.00

Select date(s) of attendance:

☐ Oct 8 am ☐ Oct 8 pm ☐ Oct 9 am ☐ Oct 9 pm ☐ Oct 10 am

Conference registration subtotal: \$ _____

Continued on next page...

ACE 2013 Registration Form (page 2 of 3)

Pre-Conference Workshop Registration

Pre-Conference Workshops Workshop registration is not included in the Conference Registration Fee. If you wish to attend a workshop(s) please check your choice(s) below.

Full Day Workshops

- ☐ 1. Practical Safety Risk Management Training—From Hazard Identification to Effective Safety Action
- ☐ 2. Getting Proactive—Approaches Tools and Metrics for Integrating Ergonomics into Work System Design

8:00 am Half Day Workshops

- ☐ 3. Behaviour Change Workshop
- ☐ 4. Let's Talk about Office Ergonomics—Points Beyond Today's Guidelines
- ☐ 5. Gaining Insight from Organizational Stakeholders: Using Qualitative Interviewing in Ergonomics Research

1:00 pm Half day Workshops

- ☐ 6. Sampling Strategy for Ergonomists: Who, When and How Long to Measure
- ☐ 7. Implementing the Leadership in Energy and Environmental Design (LEED) Ergonomics Credit for New Construction
- ☐ 8. Introduction to Human Vibration

CCPE Certification Question and Answer session

(12:15pm—1:30 pm Oct 9) No charge

- ☐ I plan on attending

Pre-Conference Workshop Rates

Full Day Workshop or Two Half Day Workshops

Note: all workshops include lunch served from 12pm to 1pm

All rates in \$CDN	ACE Members	Non-members and ACE Affiliate Members	Students
Early (by Sept 6, 2013)	250.00	299.00	150.00
Later (after Sept 6, 2013)	287.50	344.00	172.50

1/2 Day Workshop

All rates in \$CDN	ACE Members	Non-members and ACE Affiliate Members	Students
Early (by Sept 6, 2013)	150.00	199.00	100.00
Later (after Sept 6, 2013)	172.50	229.00	115.00

Note: Early rates in effect until September 6, 2013. ACE Affiliates pay Non-member rates. Workshops that do not meet the minimum number of registrations by Sept. 6 will be cancelled. Please ensure that you register as soon as possible.

Pre- & Post-Workshop Registration Subtotal: \$_____

Continued on next page...

ACE 2013 Registration Form (page 3 of 3)

EXTRAS

Welcome Reception with the Exhibitors: Tuesday, October 8, 2013

(Full conference delegates receive one complimentary ticket)

Number of Guests _____ x \$40.00 = \$ _____

Additional Conference Proceeding on CD ROM

(Full conference and full day delegates receive one complimentary copy)

Number of CDs: _____ x \$40.00 = \$ _____

Extra Lunch

Extra lunch at conference (included for conference delegates)

Number of lunches _____ x \$30.00 = \$ _____

Extras Subtotal: \$ _____

TOTAL PURCHASE

\$ _____ Conference Registration Subtotal

\$ _____ Workshop Registration Subtotal

\$ _____ Extras Subtotal

\$ _____ Subtotal

\$ _____ GST (5%)**

\$ _____ **TOTAL**

**All delegates must pay GST regardless of country or province of origin unless their organization is GST exempt. GST Exempt organizations must provide a letter of certification stating exempt status and that the registration is being paid by said organization.

Method of Payment

☐ A cheque or money order in the amount of \$ _____ (CDN) and payable to ACE is enclosed.
Please charge \$ _____ (\$CDN) to my ☐ MasterCard or ☐ Visa

Credit Card Number: _____ Expiry: _____

Authorized Signature: _____

Name of Cardholder: _____

Cancellation Policy: In the case of cancellation of any workshop, the conference or any supplementary program, ACE will be liable for refund of the registration amount only for the respective event. Requests for refunds for the conference or the pre-conference workshops must be sent in writing to ACE. A refund minus a \$50.00 processing fee is available if the request is received by September 6, 2013. After this date, refunds are subject to a \$100.00 processing fee.

No refunds will be made for cancellations received after September 20, 2013. Substitutions, from the same company only, may be made at any time and must be submitted in writing. The appropriate member/non-member rate will apply for substitutions.

Fax to: (403) 451-1503 or Mail to: ACE, Suite 1003, 105-150 Crowfoot Cr NW, Calgary, AB, Canada T3G 3T2

ACE GST#: 10242 3761 RT0001