

# Three-Year Work Plan 2009-2011



Centre of Research  
Expertise for the  
Prevention of  
Musculoskeletal Disorders

RESEARCH MEETING PRACTICE TO PREVENT MUSCULOSKELETAL DISORDERS





## Table of Contents

Introduction.....	1
Three Year Strategic Plan 2009-2011 .....	3
1. MSD-Prevention Research Strategy .....	3
2. Researcher Strategy .....	5
3. Research to Practice (r2P) Stakeholder Strategy .....	8
4. Sustainability Strategy .....	12
Moving Forward .....	14
Appendices:	
1. Three-Year Plan Summary	
2. Active Researchers	
3. Supported Students	
4. Seed Grants	
5. Position Papers	
6. WSIB-RAC Grants	

## Introduction

There is a growing sense of pressure to find ways of preventing and reducing musculoskeletal disorders (MSDs). This is true both world-wide and locally in Ontario. MSDs, also known as “Pains and Sprains” or Repetitive Strain Injuries (RSI), are painful or disabling injuries to the muscles, tendons or nerves in the back, legs, shoulders, neck, elbows, wrists or hands. They are aggravated or caused by overexertion and overuse at work. They are complex and multi-faceted problems, which typically have a gradual onset; the latency period may range from a few hours to years, depending upon the exposures and tissues loaded.

The modern recognition of these disorders and their workplace determinants extends back into the 1960’s and since then MSDs have received extensive attention in multiple jurisdictions worldwide. Despite this attention, the effectiveness of our prevention efforts has been only modest, and MSDs are increasing as a percentage of compensable claims. MSDs now represent about 42% of all lost-time injuries in Ontario. Estimates of the reported direct cost of an MSD injury range anywhere from \$700 to \$70,000. These costs do not include the physical, social and psychological burden on workers and their families, and the indirect costs to employers that are often estimated as four times this figure.

We believe that only through an examination of our current knowledge and practices, can we move forward and improve our prevention of MSDs. Improving our knowledge of the prevention of MSDs demands a multi-disciplinary, multi-perspective approach that calls on knowledge that includes research from fundamental/basic research to applied workplace-based intervention research. As the WSIB Chair, Steve Mahoney, said in February at a Centre-organized conference on the prevention of MSDs in the Transportation sector, research may be the only way of tackling this intractable problem.

Over the last five years, the Centre has developed a network of outstanding researchers and students who are actively engaged across the spectrum from lab-based to workplace intervention research. They have come together under the auspices of the Centre, and have responded to the

encouragement and structure of the Centre. They have risen to the challenge of the Centre's focus on collaborative research projects with workplace and safety system parties, and created research which has led to findings that have been disseminated as best current knowledge on the complex nature of MSDs and intervention strategies.

The Centre's unique thrust for collaborative research that is co-created by researchers and users-of-research is offering insights into areas of inquiry that have not yet been explored, or into areas where solutions are scarce.

As we move forward, the Centre will be building on our momentum from the last five years with four distinct strategies. Firstly, we have refined our MSD Prevention research agenda and will be initiating a new research agenda. This initiative will include the Centre's research focus, but also has a broader perspective on MSD prevention that will involve the Centre collaborating with research centres locally and across Canada. Secondly, we are focusing our Researcher strategy to encourage established researchers, young faculty and students to engage with collaborative-partners. Thirdly, we have launched a new Research-to-Practice (**r2P**) initiative which highlights our commitment and dedication to stakeholder involvement and knowledge transfer. Research-to-practice emphasizes the value-added proposition underpinning the Centre's activities -- *Research Meeting Practice to Prevent MSDs*. And fourthly, the Centre is developing a sustainability strategy in concert with our Advisory Committee, collaborators, the University of Waterloo and the WSIB.

## Three Year Strategic Plan 2009-2011

During the first five years of the Centre's existence, the Centre's network of researchers, partners and collaborators have initiated activities that have addressed the challenging problem of preventing MSDs. Our activities have been guided by the WSIB-RAC's mandate to the Centre to increase the research capacity in Ontario, develop a coherent research program, engage in knowledge transfer and exchange, and build the Centre's infrastructure. In the next three years we will build on these accomplishments. We plan to build on the knowledge, collaborations and the lessons we have learned. We have refined our goals as: 1) To support workplace-partnered, stakeholder-focused research into the primary prevention of musculoskeletal disorders, and 2) To generate transferable knowledge on the primary prevention of musculoskeletal disorders at work.

Going forward we have four main strategies to achieve these goals: an MSD-Prevention Research Strategy; a Researcher Strategy; a Research to Practice (r2P) Strategy; and a Sustainability Strategy.

### 1. MSD-Prevention Research Strategy

The Centre's initial research program was based upon a "cell-to-society" framework and a philosophy of "let a thousand flowers bloom". The breadth of our research into MSD prevention ranged from laboratory-based studies of injury mechanisms to the evaluation of implementation strategies in workplaces. This encouraged new faculty and students to become involved in MSD prevention research, opened up new sectors that had not been studied before, and gave established researchers the opportunity to explore new directions. The Centre's researchers continue to pursue their varied programs of research – both laboratory and workplace based—in multiple sectors, and continue to be well represented in every call for research proposals by WSIB-RAC, CIHR, SSHRC and NSERC.

#### *6-Q Initiative*

MSDs are multi-factoral in cause and the exposures are ubiquitous. Despite worldwide and multi-jurisdictional efforts, the effects of prevention

activities remain only modest. Building upon the foundation of these first five years of research activity and in the context of MSD-prevention activities world-wide, the Centre has identified six key questions that we believe will help address the apparently intractable nature of MSDs. We believe that the answers to these six foundational questions could help determine whether we are moving in the right direction or whether our efforts are being derailed by not addressing one of the key issues. We believe that research and practice suggests that the existing approaches to some or all of these issues are not adequate, and the ramification of a poor understanding of these questions is ineffective prevention.

The questions address: (1) our understanding of MSD etiology, diagnosis and burden; (2) the identification of multiple domains of risk factors; (3) the ability of workplaces to identify risks effectively and efficiently; (4) the development of efficacious interventions for MSD prevention; (5) barriers and facilitators for the wide and intensive implementation of interventions; and (6) our ability to improve MSD disability outcomes.

The questions are framed to discover possible barriers to effective prevention, identify gaps in research, possibilities for improvement in our practice, and consequently, where increased workplace and research focus is needed. The questions therefore form the basis for a fruitful research agenda. Because of the very broad nature of these questions, they will require a comprehensive, multidisciplinary approach.

In order to maximize the Centre's impact, CRE-MSD's research portfolio will therefore concentrate on a subset of these questions: 3) the ability of workplaces to identify MSD risks effectively and efficiently; 4) the development of efficacious interventions for the prevention of MSDs; and 5) the implementation of interventions widely and intensive in organizations. However, the Centre's MSD-Prevention Strategy, called the "6-Q Initiative", will include finding partners to engage in all six questions.

The 6-Q Initiative will be a program of research to explore each question, often by collaborating with other research centres in Ontario and across Canada. We will be hosting a stakeholder workshop and two invited-researcher workshops later in 2009, and four more in 2010 that will address these questions. We plan to invite researchers from across Canada and Europe

to these workshops with the goal of creating a state-of-the-art commentary. The findings of the workshop will be published in a special issue of the *Journal of WORK* to be published in 2011. Our vision is that this initiative will initiate a national network of researchers and students dedicated to clarify the underpinnings of an effective MSD-prevention strategy.

### ***Centre's focus of research***

The three central questions within the 6-Q Initiative will steer the Centre's selection of seed grants, position papers, interns, and workshops. To help us address the other questions, we will explore strategic alliances with our sister provincial research partners, such as CREIDO and IWH, but also out-of-province researchers in Quebec, British Columbia and Newfoundland, as well as international researchers in the US and Europe.

## **2. Researcher Strategy**

A key strength of the Centre is the expertise and energy of our network of researchers and students. Going forward, the Centre's strategy for researchers comprises: funding seed grants; supporting and encouraging young faculty; profiling the researchers in our network; funding graduate and under-graduate students to pursue research in MSD prevention; and holding Researcher Days which are an opportunity to establish future research collaborations among Centre researchers and students.

### ***CRE-MSD Researcher Network***

A primary mandate of the Centre was, and continues to be, to attract established and new researchers to help identify and prevent work-related musculoskeletal disorders. This strategy has increased occupational health & safety research capacity in Ontario. Because of the complex, multi-faceted nature of MSDs, the Centre's network of researchers reflects the multi-disciplinary expertise that is required to address workplace problems. Centre research includes the disciplines of biomechanics, physical ergonomics, kinesiology, engineering, sociology, epidemiology, occupational medicine, health economics.

At its start, the Centre comprised 19 researchers in seven provincial institutions. Over the past five years, this number has increased considerably. The Centre now lists over 35 active researchers from more than nine Ontario

research institutions. A researcher becomes part of our network if they have been involved in the last three years in a seed grant, a position paper, or are a member of the Centre's Steering or Scientific committees. Over the previous five years, we have seen increased interaction between the Centre's network of researchers in different institutions, the recruitment of new researchers and their institutions, and the involvement and engagement of stakeholders (employers, associations, unions, ergonomists) in the studies.

To grow our network of researchers, the Centre has been funding six to eight seed grants a year. The seed grants are modest research grants to initiate research collaborations aligned with the Centre's MSD-Prevention Research Strategy. The grant proposals are judged on scientific soundness, whether they will have a high workplace impact, whether they have included workplace parties as partners of the research, and whether they will attract both new and established researchers and students to the field. The number of proposals we receive for each call-for-funding has increased each year. Seed grants need to meet the Centre's goals to:

1. Support workplace-partnered, stakeholder-focused research into the primary prevention of musculoskeletal disorders.
2. Generate transferable knowledge on the primary prevention of musculoskeletal disorders at work.

### ***Students and young faculty***

It is important for young faculty to have the opportunity to write proposals, receive feedback on their proposals, and have access to financial support as preparation for writing proposals for larger grant applications in the increasingly competitive research environment. We believe that the best way to nurture new faculty is to have them take the lead on seed grant applications and work in collaboration with more senior researchers. This collaboration is formalized by requiring that every seed grant application have at least one established researcher on the team. These collaborations between new faculty and their mentors have laid the foundation for strong research relationships. The Centre also encourages senior PhD students to take the lead on position papers. This is an opportunity for the researchers of tomorrow to work with acknowledged leaders in the field. The seed grant funding is also a way to fund graduate and undergraduate student research activity. To date, we have involved over 35 students in MSD-prevention research.

In 2009, we plan to link each aspect of our Researcher Strategy more closely with our emerging MSD-Prevention Research Strategy and with the Six-Q Initiative. We will continue our research in under-researched areas such as construction, mining, farming, electrical utilities and transportation. Other sectors will emerge out of our work with partners.

In 2009 we will hold a “Researcher Day”. The event will be hosted by Laurentian University – and will bring researchers from southern and northern Ontario together. The Researcher Day conference will be an opportunity for students, new faculty members and more senior researchers to get together and share their research, build research projects within the program, and define opportunities for future collaborations. The 6-Q Initiative will feature prominently during this event.

### ***Research partners***

The Centre meets regularly with the Institute for Work & Health, CRE-OD, and CRE-IDO, and shares a number of stakeholder initiatives. The KTE Hub, as this entity is informally called, sends out a shared monthly summary of recent research to stakeholders under the logos of the research partners, has a regular column in the IWH newsletter, and has a common strategy to engage Safety Groups with mutual research messages. At the instigation of CRE-MSD, a network of ergonomist educational-influentials has been formed, that can be used by any of the research entities as sounding boards for emerging research. Based on the Centre’s preliminary investigation, a new focus for the KTE Hub is outreach and knowledge transfer to employers via Safety Groups. The Centre will focus on Safety Groups that are in the sectors where we already have research initiatives (construction, transportation, mining and manufacturing).

Centre research projects that will be conducted in collaboration with our sister research centres, include an exploratory study on barriers to return-to-work in health-care with CREIDO; partnering on a systematic review on knowledge transfer and a study on comfort and performance with hand-held devices such as cell phones with the Institute for Work and Health; and an exploration of joint interests in hand-arm and whole-body vibration and gloves with CRE-OD.

Historically we have been very focused on Ontario partners, but recently, in the context of the 6-Q Initiative, we have been exploring

connections with SafetyNet in Newfoundland, a group of researchers in Quebec, and others in British Columbia. Going forward, as part of our 6-Q Initiative, we plan to explore connections with other researchers and research organizations in Canada and abroad, who we believe can engage in the conceptual work that each of the six questions demand.

### **3. Research to Practice (r2P) Stakeholder Strategy**

The Centre will continue to build upon its foundational work of addressing stakeholder needs with a new Research-to-Practice (r2P) initiative. Research-to-Practice emphasizes the value-added proposition underpinning the Centre's activities; "*Research Meeting Practice to Prevent MSDs*" and mirrors a recent NIOSH initiative in the USA. This highlights our commitment and dedication to stakeholder involvement and partner collaborations on our research.

#### ***Stakeholder partnerships (employer, organized labour, ergonomists, HSAs and Safety Groups)***

We consider involving stakeholders in the research process as a particularly effective knowledge transfer strategy. The Centre's stakeholder partners include professionals or consultants with the health and safety associations (HSAs), ergonomists, workplace parties, management, employer groups, workers and organized-labour representatives. With our partner-collaborative research projects, the partners help formulate the research question, help with the design, proposal writing, data collection, interpretation, writing-up and dissemination of the research findings.

The Centre's initial focus was on the health and safety associations as our primary audience and link to workplaces. We have now had many years of experience with having collaborative research partnerships with the HSAs, and these fruitful research partnerships will continue. These partnerships have been an opportunity for the HSAs to have access to the best current knowledge to inform their products and training initiatives. For example:

- Research in the transportation sector was facilitated by close contact and consultation with the Transportation Health & Safety Association, the Teamsters Union, and six transportation companies in two sub-sectors.

- Research in the electrical and utilities sector was led by that sector's health and safety association (EUSA). This project looked at both the utility of ergonomic safety groups to reduce the risks of MSDs, as well as the impact of Safety Climate on reducing both injuries and MSDs.
- Projects with the mining sector identified concerns with underground mining vehicles and has resulted in interactions with the vehicle manufactures on changing the vehicle's design.
- The Construction Safety Association of Ontario (CSAO) has been involved in nearly five years of research studies with us, identifying innovations to reduce musculoskeletal disorders and determining their most effective dissemination pathways.
- Stakeholder partnerships have also been very productive with Centre-funded research projects in the law-enforcement, mining, health-care, office, and forestry sectors.

In the next three years, the Centre will explore the possibility of engaging the 50 sector-specific Safety Groups that are organized by the WSIB as possible pathways to disseminate our research. The Safety Groups are employer groups, made up of large, medium and small companies, that encourage sector-specific groups of employers to come together to initiate safety policies and procedures. They are treated as a unit for WSIB safety-related rebates and have a number of elements that relate to MSD-prevention and ergonomics. A large number of the groups are in the sectors in which the Centre is already conducting research. Initial approaches have already been made to the organizers of the construction and transportation Safety Groups. These linkages will continue, expand, and be cemented over the next three years.

CRE-MSD has had three internship arrangements which have built trust and collaboration between the Centre and a stakeholder association or organization. The internships are a formal arrangement whereby the intern is seconded to the Centre (typically for about 1 day per week for one or two years) with the goal of initiating collaborative research projects. Our present internship is with Keith McMillan, National Representative: Health and Safety at the Communications, Energy and Paperworkers Union. This internship has resulted in a WSIB-RAC proposal that has Keith McMillan and Richard Wells as co-principal investigators. The proposal also involves the CAW,

Steelworkers and OHCOW. This internship will continue in 2009. New internships will be created for 2010 and 2011.

The Centre continues to interact on a regular basis with the WSIB group of ergonomists, which is the largest group of ergonomists in Ontario, and the Ministry of Labour's ergonomists. Representatives from these groups have attended all the Centre's stakeholder events. Centre researchers have also presented emerging research to them as a group. In 2009, facilitated by the WSIB representatives on the Centre's Advisory Committee, the Centre's researchers will focus on presentations on the prevention of MSDs to the group. This regular interaction will continue in 2010 and 2011.

The Centre has sponsored and facilitated a number of conferences aimed at a more general stakeholder audience on issues that are considered difficult and challenging. These meetings have been an opportunity to raise awareness and promote a culture among employers, workers and other stakeholders in the OH&S system to seek out and use current research-based knowledge to inform their decision-making and workplace interventions to reduce MSDs. We held a conference on manual material handling in collaboration with Canadian Centre for Occupational Health and Safety (CCOHS), a conference on job rotation with the involvement of unions and workplaces, two conferences on MSD prevention in the transportation sector in collaboration with the Transportation Health & Safety Association of Ontario (THSAO) – the second of these two conferences was held in February 2009 and attracted over 120 participants.

In the next three years we will be holding a series of workshops with potential topics including; "Research to Practice: How to get the best evidence into the hands of workplace parties" which would be aimed at a general audience, "Threshold Limit Values for Mechanical Exposures; Evidence and Utility" for a more technically oriented audience such as ergonomists and health and safety professionals, and "Communication between ergonomists, workers, workplaces and return to work specialists: tools and procedures" for those involved with return to work activities. As usual we will be drawing on expertise from our researcher network, our research partners and experts nationally and internationally.

### ***Collaborative Research Methodology***

For many years, the Centre has been a strong proponent of stakeholder-focused, workplace-partnered, collaborative research as its major technique of knowledge transfer. Centre researchers have now conducted collaborative research projects with members of seven sector-specific health and safety associations (including transportation, manufacturing, service sector and electrical utilities) as well as ergonomists, health and safety professionals from companies, and union representatives. Our workplace partners act as links to Ontario's 500,000 workplaces.

The collaborative process has become well established. A small research team (less than eight people) is created with equal and strong representation from researchers, intermediary associations and workplaces. Activities of the team may include, framing the problem, making decisions on the research question, deciding on the research methodology, writing the proposal, conducting the workplace interventions, collecting data, interpreting the data, and writing up and disseminating the findings.

This collaboration allows researchers to gain a deeper knowledge of the sector, explore the areas of greatest need for investigation and intervention, identify some of the barriers and facilitators of implementing the intervention, and get a "feel" for the uniqueness of the sector. Another advantage is that the engagement of workplace parties as partners in the research process leads to findings that are more transferable to the complex realities of workplaces and improves the uptake and utilization of the findings.

In the next three years, the Centre will continue being a strong advocate for a stakeholder collaborative research model. The Centre will be developing its knowledge transfer conceptual model by conducting research into knowledge transfer techniques. The Centre's funded seed grants encourage workplace-partnered, stakeholder-focused research. Most of the seed grants include workplace parties as either very strong supporters of the research or as research partners on the research study. Academic journal articles, posters, presentations, and plain language reports will be produced in the next three years to highlight this aspect of the Centre's research focus.

### ***Transferable Knowledge***

CRE-MSD has produced two brochures that profile its research, researchers and stakeholder collaborations. These products are targeted at a general audience. They have received wide distribution and have been helpful

in increasing our profile. The Centre's website ([www.cre-msd.uwaterloo.ca](http://www.cre-msd.uwaterloo.ca)) also has plain language versions of the seed grants, a series of position papers that are written with a lay audience in mind, video-taped versions of the Centre's stakeholder conferences and workshops which can be downloaded, and fact-sheets and brochures that have been developed in collaboration with our health and safety association research partners.

The CRE-MSD website is undergoing a major redesign which will be launched in the early summer. We are focusing our website on products and links for our stakeholders, and the findings from the Centre's collaborative research. The new website will highlight our four research strategies and the Research to Practice (r2P) initiative. These distinct strategies will be strongly supported by the website design. A final point is that our newly designed website will profile the researchers who make up the Centre's network. These profiles will include the researchers' biographies, their journal articles, and their presentations.

## 4. Sustainability Strategy

### *Centre Leadership*

The Centre's infrastructure is quite flat and manageable and there seems no imperative for change, although the next three years may see the creation of an Ad Hoc Sustainability Committee (this is still under discussion with our Advisory Committee). The Centre's Director is Richard Wells; Associate Director Knowledge Transfer is Desre Kramer; Associate Director Research is Jack Callaghan. There is an Advisory Committee, a Steering Group, and a Scientific Committee.

The Centre has two internal committees: the Steering Group and the Scientific Committee. These committees are important to the achievement of the Centre's goals. The Centre's Steering Group is currently made up of Jack Callaghan, Phil Bigelow, Peter Keir and Desre Kramer, and is chaired by Richard Wells. This group provides strategic advice on the Centre's research strategy, and makes final decisions on the funding of seed grant and position paper applications. The Centre's Scientific Committee is made up of Jim Potvin, Joan Stevenson, Ted Haines and Clark Dickerson. This committee evaluates the seed grant and position paper proposals.

The Centre's Advisory Committee is a dynamic group made up of two directors from the WSIB (Linda Kelly and Susan Fuciarelli), CEOs of the health and safety associations (Elizabeth Mills and Alec Farquhar), key personnel at the Ministry of Labour (John vander Doelen and Anne Duffy, who also acts as a connection to the Association of Canadian Ergonomists), a representative of the injured-worker community (Catherine Fenech), an employer representative (Michelle Morrissey from Hydro One), and two union representatives (Keith McMillan from the Communications, Energy and Paperworkers Union, and David Robertson from the CAW). We currently have a vacancy for a second employer representative. This committee meets about three times a year and offers us strategic advice and wisdom. Members have joined research projects, lent their support for research grants, and helped us access workplaces for workplace intervention research.

### ***National Research Partnerships***

We have begun to create partnerships outside Ontario. We are partnering with researchers in Quebec, Newfoundland, Washington State and British Columbia on a CIHR five-year strategic team grant. This grant application includes 14 researchers from three provinces, and seven major stakeholder partners, including three from Ontario (Hydro One, Steelworkers Union, and the Industrial Accident Prevention Association). The proposal is to create a model of workplace intervention to reduce the risk of workplace-based musculoskeletal disorders (MSDs), and pilot the model in workplaces in each province. The proposal includes a number of Centre researchers: Richard Wells, Ben Amick, Phil Bigelow, Desre Kramer, Patrick Neumann, Ivan Steenstra, and Emile Tompa.

We have also established an informal collaborative partnership with SafetyNet, an Occupational Health & Safety research institute in Newfoundland, and are presently exploring commonalities and opportunities for mutual research projects including a number of knowledge-transfer products that may be applicable for small businesses in both provinces.

### ***Funds Development***

We are exploring federal and provincial research agencies, and organizations and foundations in order to secure future support for our core collaborative and knowledge-transfer functions. The typical research funding that is accessible to our network of researchers does not cover many of the core activities of the Centre such as interactions with employers around

difficult issues, HSA and union partnerships and maintaining a network of researchers, which our stakeholders consider so valuable. Therefore, funding for these functions does need to be identified and obtained from other sources.

However, we are taking the advice of our Advisory Committee to heart that we should be focusing on our core business of building a national MSD prevention strategy and conducting knowledge transfer, and not be distracted by attempting to be experts in fundraising. As a result, we will be asking the WSIB and the University of Waterloo to help us develop a plan on how we should proceed in assuring our future survival.

## **Moving Forward**

The Centre sees the next three years as both an opportunity to build upon our achievements and to make a bold new contribution to the problem of preventing MSDs in workplaces. In the next three years, the 6-Q Initiative will become the organizing principle for the Centre's work and our goal to build and take leadership of a national research agenda. It will help prioritize our outreach to other researchers and research institutions across the country and in this way will have a determining effect on how our researcher network grows, develops and is sustained. The 6-Q Initiative will focus the Centre's core research agenda including what seed grants and position papers we will fund, and the contribution that individual researchers within our network can make to these difficult, yet essential questions.

Our Research to Practice (r2P) Strategy will also be guided by the 6-Q Initiative. We will be reaching out to stakeholders who can help us identify gaps and needs based on the six questions and the Centre will focus on collaborating with partners to help produce plain-language products that will bring these issues and their solutions to workplace decision-makers. We are excited by the opportunities that this new initiative will be affording us, and look forward to developing the Centre for the next three years and beyond in order to achieve its vision of preventing MSDs.

# Appendices



## CRE-MSD Active Researchers

Abdoli-E, Mohammad	Ryerson University
Amick, Ben	Institute for Work & Health
Andrews, David	University of Windsor
Beaton, Dorcas	Institute for Work & Health
Bigelow, Philip	University of Waterloo
Callaghan, Jack	University of Waterloo
Cole, Donald	Institute for Work & Health
Dickerson, Clark	University of Waterloo
Drake, Janessa	University of Windsor
Dumas, Genevieve	Queen's University
Eger, Tammy	Laurentian University
Frank, James	University of Windsor
Frazer, Mardy	Sandalwood Engineering & Ergonomics
Gignac, Monique	University of Toronto
Godwin, Alison	Laurentian University
Green, Howard	University of Waterloo
Grenier, Sylvain	Laurentian University
Haines, Ted	McMaster University
Keir, Peter	McMaster University
Kramer, Desre	University of Waterloo
Maly, Monica	University of Western Ontario
McGill, Stuart	University of Waterloo
Moore, Anne	York University
Naqvi, Syed	Occupational Health Clinics for Ontario Workers
Neumann, Patrick	Ryerson University
Potvin, Jim	McMaster University
Ranney, Donald	University of Waterloo
Salmoni, Alan	University of Western Ontario
Steenstra, Ivan	Institute for Work & Health
Stevenson, Joan	Queen's University
Theberge, Nancy	University of Waterloo
Tompa, Emile	Institute for Work & Health
Van Eerd, Dwayne	Institute for Work & Health
Weir, Patricia	University of Windsor
Wells, Richard	University of Waterloo

## CRE-MSD Supported Students

Beach, Tyson	University of Waterloo
Bozzo, Stefano	University of Waterloo
Brookham, Rebecca	University of Waterloo
Carlan, Niki	University of Windsor
Chopp, Jaclyn	University of Waterloo
Chow, Amy	University of Waterloo
Clark, Jessica	University of Western Ontario
Cort, Joel	McMaster University
Damecour, Caroline	Ryerson University
Demerchant, Amy	Laurentian University
Dixon, Shane	University of Waterloo
Fiedler, Krysia	University of Windsor
Fischer, Steven	University of Waterloo
Fox, Jocelyne	University of Windsor
Frost, David	University of Waterloo
Gallagher, Kaitlin	University of Waterloo
Godwin, Alison	Queen`s University
Gooyers, Chad	Queen`s University
Gregory, Diane	University of Waterloo
Hall, Laurie	University of Waterloo
Henry, Danielle	Laurentian University
Hodder, Joanne	McMaster University
Holmes, Mike	McMaster University
Kajaks, Tara	McMaster University
Kanne, Carolien	Vrie University, Amsterdam
Kusins, Mallorie	Laurentian University
Lamontagne, Julie	Laurentian University
Leduc, Mallorie	Laurentian University
Lembke, Jennifer	University of Windsor
Linseman, Mark	University of Waterloo
Malcho, Tonya	Laurentian University
Marshall, Leigh	University of Waterloo
McKinnon, Colin	University of Waterloo
Mekitiak, Megan	Ryerson University
Moreton, Jesse	University of Waterloo
Nairn, Brian	University of Windsor
Nouraei, Hooman	Ryerson University
Parkinson, Robert	University of Waterloo
Perdeaux, Keven	University of Waterloo
Peterson, Anne	Ryerson University
Picco, Bryan	University of Waterloo
Scrivens, David	Ryerson University
Selman, Katie	University of Waterloo
Smith, Kristy	University of Windsor
Twiddy, Alexis	Queen`s University
Upjohn, Tegan	Queen`s University
Van Wyk, Paula	University of Western Ontario
Yates, Justin	University of Waterloo

## **CRE-MSD Seed Grants: 2006 – 2008**

### **FUNDED IN 2008**

#### **Examination of Vibration Characteristics and Benefits of "Anti-Vibration" Mats and Insoles for Workers Exposed to Vibration Via the Feet**

Lead Researcher: Tammy Eger (Laurentian University)

Co-Researchers: Alison Godwin, Sylvain Grenier, Mallorie Kusins\*\* (Laurentian University); Jim Dickey (University of Guelph)

Funding Awarded: \$9,999.00

#### **Establishing the Effect of Whole-Body Vibration, Mechanical Shock Loading, and Postural Considerations on the Progression of Intervertebral Disc Herniations: An Investigation Implementing Radiographs, CT Imaging and Dissection Techniques with Relevance to Occupational Drivers**

Lead Researcher: Stuart McGill (University of Waterloo)

Co-Researchers: Justin Yates\*\* (University of Waterloo)

Funding Awarded: \$9,850.00

#### **An Evaluation of the Reliability and Usability of a Workplace Hazard Identification and Assessment Checklist Included in the New MSD Prevention Guideline for Ontario: A Pilot Study**

Lead Researcher: Syed Naqvi (Occupational Health Clinics for Ontario Workers)

Co-Researchers: Desre Kramer (University of Waterloo); Ted Haines (McMaster University)

Funding Awarded: \$9,995.00

#### **Optimizing the Use of Digital Human Models for Performing Valid Proactive Ergonomic Analyses**

Lead Researcher: Jim Potvin (McMaster University)

Funding Awarded: \$9,750.00

#### **Virtual Ergonomics in Production Planning**

Lead Researcher: Patrick Neumann (Ryerson University)

Funding Awarded: \$9,000.00

#### **The Feasibility of Using a Video-Based Approach to Quantify Cumulative Low Back Loads of Nurses in an Acute Care Hospital**

Lead Researcher: Patricia Weir (University of Windsor)

Co-Researchers: David Andrews (University of Windsor); Alan Salmoni, Michael Kerr (University of Western Ontario); Jack Callaghan (University of Waterloo)

Funding Awarded: \$8,340.00

**The Sensory Feedback Mouse Study: Pilot Study on the Effectiveness of Sensory Feedback in VDU Workers**

Lead Researcher: Ivan Steenstra (Institute for Work & Health)

Co-Researchers: Dwayne Van Eerd, Donald Cole, Ben Amick, Philip Bigelow (Institute for Work & Health)

Funding Awarded: \$10,000.00

**Is There a Relationship Between Qualitative Whole-Body Movement Screen Scores and Low-Back Mechanics?**

Lead Researcher: Stuart McGill (University of Waterloo)

Co-Researchers: Jack Callaghan, David Frost\*\*, Tyson Beach\*\*(University of Waterloo)

Funding Awarded: \$10,000.00

**Developing a Posture Correction Approach of ISO Vibration Standards: A Pilot Study**

Lead Researcher: Jack Callaghan (University of Waterloo)

Co-Researchers: Tammy Eger (Laurentian University); Peter Keir, Bruce Wainman (McMaster University); Diane Gregory\*\*(University of Waterloo)

Funding Awarded: \$9,846.00

**FUNDED IN 2007**

**Manual Materials Handling Tasks in Those with Knee Osteoarthritis: Could Compensations Due to Knee Symptoms Increase the Risk of Low Back Injury?**

Lead Researcher: Monica Maly (University of Western Ontario)

Co-Researchers: Scott Lynn (Queen`s University); Monique Gignac (University of Toronto); Jack Callaghan (University of Waterloo)

Funding Awarded: \$10,000.00

**Including Biomechanical Shoulder Modeling in Job Assessments**

Lead Researcher: Clark Dickerson (University of Waterloo)

Co-Researchers: Jennifer Marshall, Kirsti MacAulay (Options Inc.); Christopher McLean (Toyota Motor Manufacturing of Canada)

Funding Awarded: \$9,975.00

**Refining Exposure Measurements in VDU Workers: Comparison of Four Methods**

Lead Researcher: Dwayne Van Eerd (Institute for Work & Health)

Co-Researchers: Ivan Steenstra, Donald Cold, Philip Bigelow, Ben Amick, Dorcas Beaton (Institute for Work & Health)

Funding Awarded: \$10,000.00

**Assessment of Joint Loads Responsible for Musculoskeletal Symptoms During the Tree-Planting Task**

Lead Researcher: Genevieve Dumas (Queen`s University)

Co-Researchers: Tegan Upjohn\*\* (Queen`s University); Peter Keir (McMaster University)

Funding Awarded: \$9,987.33

**Feasibility Assessment of a Multi Methods Approach for Evaluating Risky Driving Posture Adopted by Operators of Industrial Equipment**

Lead Researcher: Tammy Eger (Laurentian University)

Co-Researchers: Jack Callaghan (University of Waterloo); Sylvain Grenier (Laurentian University); Alison Godwin\*\* (Queen`s University)

Funding Awarded: \$9,980.00

**Quantifying Spinal Loading and Mechanics in Industrial Tasks: Effects of Load Magnitude, Gender, and Coupled Postures**

Lead Researcher: Janessa Drake (University of Windsor)

Co-Researchers: James Frank (University of Windsor); Jack Callaghan, Robert Parkinson\*\* (University of Waterloo)

Funding Awarded: \$9,960.00

**Three Dimensional Estimation of the Dynamic Moments on the Lumbar Spine Among the Cylinder Drivers and Dock Workers at Superior Propane Inc.**

Lead Researcher: Mohammad Abdoli-E (Ryerson University)

Co-Researchers: Jim Potvin (McMaster University)

Funding Awarded: \$10,000.00

**The Role of Dynamic Torsion on Disc Herniation Mechanisms**

Lead Researcher: Sutart McGill (University of Waterloo)

Co-Researcher: Leigh Marshall\*\* (University of Waterloo)

Funding Awarded: \$6,021.00

## FUNDED IN 2006

**Approaches to Reducing Upper Extremity Loading and Injury Risk Factors During the Installation of Hydro Meters**

Lead Researcher: Clark Dickerson

Co-Researchers: Shannon Maracle, Carrie Boyle (Electrical & Utilities Safety Association)

Funding Awarded: \$9,503.50

**Quantifying Physical Exposure in Police Cruiser Operations**

Lead Researcher: Jack Callaghan (University of Waterloo)

Co-Researchers: Clark Dickerson, Jennifer Durkin (University of Waterloo)

Funding Awarded: \$9,825.00

**Development of a Risk Index for Shoulder Cumulative Exposure and a Linking of AUTO21 Low Back Cumulative Exposure Data with the OUBPS LBPRI Data Sheet**

Lead Researcher: Jack Callaghan (University of Waterloo)

Co-Researchers: Richard Wells (University of Waterloo)

Funding Awarded: \$10,005.00

**Tai Chi Chuan Workplace Intervention for Improving Musculoskeletal Fitness Among Female Computer Users**

Lead Researcher: Hala Tamim (York University)

Co-Researchers: Peter Keir (McMaster University); Norman Gledhill, Sherry Grace, Veronica Jamnik, Alison Macpherson (York University)

Funding Awarded: \$10,000.00

**Developing a Measurement Tool: Assessing Respect and Disrespect in the Workplace**

Lead Researcher: Ann-Sylvia Brooker (University of Waterloo)

Co-Researchers: Wayne Lewchuk (McMaster University); Dorcas Beaton (Institute for Work & Health)

Funding Awarded: \$5,849.66

**Empirical Quantification of Shoulder Muscular Demand/Perception Relationships for Low Physical Demand Tasks**

Lead Researcher: Clark Dickerson (University of Waterloo)

Co-Researcher: Rebecca Brookham\*\* (University of Waterloo)

Funding Awarded: \$9,971.00

**Finalize Prototype and Collect Baseline Data on Women Wearing an On-Body Personal Lift Assistive Device (PLAD)**

Lead Researcher: Joan Stevenson (Queen`s University)

Co-Researchers: Jim Potvin (McMaster University); Alison Godwin\*\*, Alexis Twiddy\*\* (Queen`s University)

Funding Awarded: \$10,000.00

**Towards A Virtual Workspace Design Tool for Ergonomic Assessment of Vision and Arm Function**

Lead Researcher: Patrick Neumann (Ryerson University)

Co-Researchers: Anne Moore (York University); Farrokh Janabi-Sharifi (Ryerson University); David Scrivens\*\* (Ryerson University)

Funding Awarded: \$10,000.00

**Multi-Task Jobs and Job Rotation**

Lead Researcher: Jim Potvin (University of Windsor)

Co-Researchers: Carolien Kanne\*\* (Vrije University, Amsterdam)

Funding Awarded: \$5,900.00

**\*\*Student**

## CRE-MSD Position Papers: 2006 - 2008

### FUNDED IN 2008

#### **Musculoskeletal Threshold Limit Values (TLVs)**

Researcher: Jack Callaghan (University of Waterloo)

Student: Chad Gooyers (University of Waterloo)

#### **Factors Affecting Whole-Body Vibration in Transportation**

Researcher: Alan Salmoni (University of Western Ontario)

Student: Paula Van Wyk (University of Western Ontario)

#### **Do Mechanical Lift Assist Devices Reduce the Risk of Injury in Health Care Facilities?**

Researcher: Peter Keir (McMaster University)

Students: Joanne Hodder, Mike Holmes (McMaster University)

#### **Whole-Body Vibration: How Risk Assessments Can Be Influenced By the Standards Used**

Researcher: Tammy Eger (Laurentian University)

Student: Mallorie Leduc (Laurentian University)

#### **Improving Participatory Ergonomic Interventions by Understanding Their Social and Political Dynamics**

Researcher: Philip Bigelow (University of Waterloo)

Student: Shane Dixon (University of Waterloo)

#### **Issues in the Selection of Gloves**

Researcher: Richard Wells (University of Waterloo)

Student: to be determined

### FUNDED IN 2007

#### **Human Factors and the Daily Work of Engineers - Burden or Benefit?**

Researcher: Patrick Neumann (Ryerson University)

Student: Megan Mekitiak (Ryerson University)

#### **Overhead Work: Job Design Considerations and Evidence-Based Decision Criteria**

Researcher: Clark Dickerson (University of Waterloo)

Student: Steven Fischer (University of Waterloo)

#### **Low Back Cumulative Loading**

Researcher: Jack Callaghan (University of Waterloo)

Student: Robert Parkinson (University of Waterloo)

## WSIB-RAC Grants: 2006 - 2008

### FUNDED IN 2008

#### **The Safety Case for Business: A Multi-Stakeholder Examination of Best Practices and Health and Safety Outcomes (#08010)**

Principal Investigator: Mark Pagell (York University)

Co-Investigators: Markus Biehl, David Johnston (York University); Robert Klassen (University of Western Ontario); Emile Tompa, Sheilah Hogg-Johnson, Lynda Robson, Benjamin Amick (Institute for Work & Health)

Sponsoring Institution: York University

Three-Year Funding: \$387,300.00

#### **Development of an Ontario-Wide Survey to Study Factors Impacting the Health and Safety of Truck Drivers in Ontario (#08031)**

Principal Investigator: Philip Bigelow (University of Waterloo)

Co-Investigators: Sheilah Hogg-Johnson, Benjamin Amick (Institute for Work & Health); Karl Sieber (U.S. Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health)

Sponsoring Institution: University of Waterloo

One-Year Funding: \$29,905.00

#### **A Randomized Controlled Study of Targeted Occupational Health and Safety Consultation in Ontario (#08035)**

Principal Investigator: Sheilah Hogg-Johnson (Institute for Work & Health)

Co-Investigators: Linda Robson, Donald Cole, Benjamin Amick, Peter Smith, Emile Tompa, Cameron Mustard (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

One-Year Funding: \$59,700.00

#### **A Versatile and Comprehensive model to Predict the Effort Required by the Hand and Wrist During Manual Work: Development and Evaluation (#08008)**

Principal Investigator: Richard Wells (University of Waterloo)

Co-Investigators: Russ Tupling (University of Waterloo); Shannon Hunt (Electrical & Utilities Safety Association)

Sponsoring Institution: University of Waterloo

Three-Year Funding: \$240,999.00

**Assessment of the Effectiveness of Heavy Machinery Seats for Multi-Axis Vibration Environments (#08011)**

Principal Investigator: James Dickey (University of Guelph)

Co-Investigators: Tammy Eger (Laurentian University); Michele Oliver (University of Guelph)

Sponsoring Institution: University of Guelph

Three-Year Funding: \$299,995.00

**A Randomized Controlled Trial of the Effectiveness of Two Office Ergonomic Training Approaches for Seated Environments: Comparing an In-Person to Computer-Based Training (#08024)**

Principal Investigator: Benjamin Amick (Institute for Work and Health)

Co-Investigators: Ivan Steenstra, Peter Smith, Donald Cole, Emile Tompa, Philip Bigelow, Dorcas Beaton (Institute for Work & Health); Michelle Robertson (Liberty Mutual Research Institute for Safety)

Sponsoring Institution: Institute for Work & Health

Two-Year Funding: \$235,047.00

**The Behavioural Incentives of Experience Rating: An Investigation into the Health and Safety Consequences of the New Experimental Experience Rating Program in Ontario (#08025)**

Principal Investigator: Emile Tompa (Institute for Work & Health)

Co-Investigators: Benjamin Amick, Sheilah Hogg-Johnson, Lynda Robson (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

Two-Year Funding: \$121,960.00

**The Problem of Claims Persistence: What is Driving Increases in Persistent and Locked-In Claims? (#08027)**

Principal Investigator: Sheilah Hogg-Johnson (Institute for Work & Health)

Co-Investigators: Emile Tompa, Benjamin Amick (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

Two-Year Funding: \$182,583.78

**Encouraging Construction Companies to Adopt Innovations to Reduce MSDs Using Different Knowledge Transfer Techniques (#08007)**

Principal Investigator: Desre Kramer (University of Waterloo)

Co-Investigators: Philip Bigelow, Richard Wells (University of Waterloo); Peter Vi, Enzo Garritano (Construction Safety Association of Ontario)

Sponsoring Institution: University of Waterloo

Three-Year Funding: \$348,870.00

## FUNDED IN 2007

### **Mortality by Occupation in Canada: A Ten-Year Follow-Up of a 15% Sample of the 1991 Census (#07004)**

Principal Investigator: Cameron Mustard (Institute for Work & Health)

Co-Investigators: Kristan Aronson (Queen's University); Benjamin Amick (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

Two-Year Funding: \$224,300.00

### **Development and Evaluation of a Novel Shoulder Occupational Exposure Analysis Tool (#07006)**

Principal Investigator: Clark Dickerson (University of Waterloo)

Co-Investigators: Jack Callaghan (University of Waterloo); Richard Wotherspoon (Cooper Standard Automotive)

Sponsoring Institution: University of Waterloo

Three-Year Funding: \$172,211.00

### **Evaluating the Effects of Cold and Glove Use on Manual Dexterity and Performance and the Testing of Potential Solutions (#07104)**

Principal Investigator: Richard Wells (University of Waterloo)

Co-Investigators: Shannon Maracle (Electrical & Utilities Safety Association)

Sponsoring Institution: University of Waterloo

One-Year Funding: \$29,818.00

### **Economic Evaluation Workbook for Workplace Partners and Systems Partners (#07114)**

Principal Investigator: Emile Tompa (Institute for Work & Health)

Co-Investigators: Benjamin Amick, Kiera Keown, Anita Dubey, Emma Irvin (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

One-Year Funding: \$40,000.00

### **Biodynamic Response of Human Subjects Exposed to Complex Multi-Axis Vibration (#07021)**

Principal Investigator: James Dickey (University of Guelph)

Co-Researchers: Tammy Eger, Sylvain Grenier (Laurentian University); Paul-Émile Boileau (Institut de recherche Robert-Sauvé en Santé et sécurité du travail); Michele Oliver, Peter Kim (University of Guelph); Subhash Rakheja (Concordia University)

Sponsoring Institution: University of Guelph

One-Year Funding: \$149,085.00

**Identification of Biomechanical Risk Factors Responsible for Musculoskeletal Disorders in the Northern Ontario Tree Planting Population (#07110)**

Principal Investigator: Genevieve Dumas (Queen's University)

Co-Investigators: Peter Keir (McMaster University)

Sponsoring Institution: Queen's University

One-Year Funding: \$48,461.30

**User-Acceptability and Effectiveness of a Personal Lift Assist Device (PLAD) in an Automotive Industrial Setting (#07117)**

Principal Investigator: Joan Stevenson (Queen's University)

Co-Investigators: Mohammad Abdoli-E (Ryerson University); Alison Godwin (Laurentian University); Michael Agnes (Virginia Polytechnic Institute and State University)

Sponsoring Institution: Queen's University

One-Year Funding: \$60,000.00

**Optimizing Seat Selection to Minimize Six Degree-of-Freedom Whole-Body Vibration in Integrated Steel Manufacturing Mobile Machinery (#07120)**

Principal Investigator: Michele Oliver (University of Guelph)

Co-Investigators: James Dickey (University of Guelph); Tammy Eger (Laurentian University); Patricia Hope (Algoma Steel)

Sponsoring Institution: University of Guelph

One-Year Funding: \$60,000.00

**Involving Stakeholders in the Planning of Workplace Intervention to Improve Return to Work: Putting What We Know into Action Using an Intervention Mapping Approach (#07129)**

Principal Investigator: Carlo Ammendolia (University Health Network)

Co-Investigators: David Cassidy, Eleanor Boyle, Pierre Côté, Monique Gignac (University Health Network); Ivan Steenstra, Clair Bombardier (Institute for Work & Health); Patrick Loisel (University of Sherbrooke)

Sponsoring Institution: University Health Network

One-Year Funding: \$59,332.60

**In Search of Innovations: Identifying New Tools and Processes to Prevent MSDs in the Construction Sector (#07103)**

Principal Investigator: Desre Kramer (University of Waterloo)

Co-Investigators: Philip Bigelow (Institute for Work & Health); Enzo Garritano, Peter Vi (Construction Safety Association of Ontario); Richard Wells (University of Waterloo)

Sponsoring Institution: University of Waterloo

One-Year Funding: \$58,739.00

## FUNDED IN 2006

### **Ergonomics in the Transportation Sector: The Development of Best Practices in MSD-Reduction Strategies (#06019)**

Principal Investigator: Richard Wells (University of Waterloo)

Co-Investigators: Mark Diacur (Transportation Health & Safety Association of Ontario); Desre Kramer (University of Waterloo); Philip Bigelow (Institute for Work & Health)

Sponsoring Institution: University of Waterloo

Two-Year Funding: \$307,465.00

### **A Pilot Study Towards a Virtual Workspace Design Tool for Ergonomic Assessment of Vision and Arm Function (#06025)**

Principal Investigator: Farrokh Janabi-Sharifi (Ryerson University)

Co-Investigators: Patrick Neumann (Ryerson University); Anne Moore (York University)

Sponsoring Institution: Ryerson University

One-Year Funding: \$29,985.00

### **Developing a Tool for Engineering Design That Will Predict the Effort Required by the Hand and Wrist During Manual Work (#06104)**

Principal Investigator: Richard Wells (University of Waterloo)

Co-Investigators: Desre Kramer, Clark Dickerson (University of Waterloo); Wyatt Clark (Canadian Auto Workers); Carolin Bart (Daimler Chrysler)

Sponsoring Institution: University of Waterloo

One-Year Funding: \$39,928.00

### **Assessment Tools for Non-Fixed Work (#06106)**

Principal Investigator: Anne Moore (York University)

Co-Investigators: Peter Vi, Enzo Garritano (Construction Safety Association of Ontario); Richard Wells (University of Waterloo)

Sponsoring Institution: York University

One-Year Funding: \$54,063.00

### **Safety Climate Monitoring in Ontario (#06111)**

Principal Investigator: Philip Bigelow (Institute for Work & Health)

Co-Investigators: Dov Zohar (Israel Institute of Technology); Monica Sharma (Industrial Accident Prevention Association); Lynda Robson, Sheilah Hogg-Johnson (Institute for Work & Health); Terrance Evers (Statistics Canada); Peter Shermer (Workplace Safety & Insurance Board)

Sponsoring Institution: Institute for Work & Health

One-Year Funding: \$22,481.00

**Prevention System OHS Management Audit Tools: Description, Content, Validation and an Assessment of the Feasibility of Measurement Research (#06112)**

Principal Investigator: Lynda Robson (Institute for Work & Health)

Co-Investigators: Philip Bigelow, Dwayne Van Eerd, Garry Gray (Institute for Work & Health)

Sponsoring Institution: Institute for Work & Health

One-Year Funding: \$59,894.00

**Prostate Cancer and Occupational Whole-Body Vibration Exposure (#06032)**

Principal Investigator: James Purdham (University of Toronto)

Co-Investigators: Alan Salmoni (University of Western Ontario); Nancy Kreiger (Cancer Care Ontario); Andrea Sass-Kortsak (University of Toronto); Marie-Elise Parent (Université du Québec); Jack Semiatycki (Université de Montréal)

Sponsoring Institution: University of Toronto

Two-Year Funding: \$140,480.00

**Hand and Upper Extremity Function in Workers with Occupational Contact Dermatitis (#06107)**

Principal Investigator: Sharon Switzer-McIntyre (University of Toronto)

Co-Investigators: Linn Holness, Dorcas Beaton (St. Michael's Hospital); Rosemary Nixon (Occupational Dermatology Research Education Centre)

Sponsoring Institution: University of Toronto

One-Year Funding: \$59,700.00

**Economic Perspectives on Workplace in a Return to Work Program (#06109)**

Principal Investigator: Helen Yaohua He (University Health Network)

Co-Investigators: David Cassidy, Eleanor Boyle, Sylvia Boddener (University Health Network); Emile Tompa, Sheilah Hogg-Johnson (Institute for Work & Health); Michael Schofield (Workplace Safety & Insurance Board)

Sponsoring Institution: University Health Network

One-Year Funding: \$29,914.00

**What Workplace Characteristics Have an Impact on an Injured Worker's Return to Work? A Qualitative Study (#06110)**

Principal Investigator: Eleanor Boyle (University Health Network)

Co-Investigators: Ivan Steenstra (Institute for Work & Health); Jill Hayden, David Cassidy, Stephanie Wyeld (University Health Network); Richard Wells (University of Waterloo)

Sponsoring Institution: University Health Network

One-Year Funding: \$29,966.00

**Human Factors and Engineering Design Tool Use Among Professional Ergonomists and Engineers (#06011)**

Principal Investigator: Patrick Neumann (Ryerson University)

Co-Investigators: Richard Wells, Nancy Theberge (University of Waterloo); Saeed Zolfaghario (Ryerson University); Jonas Laring (Swedish National Institute for Working Life)

Sponsoring Institution: Ryerson University

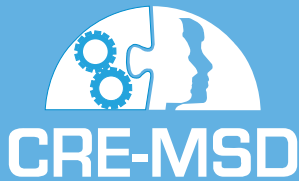
Three-Year Funding: \$209,497.00



RICHARD WELLS  
Director  
wells@uwaterloo.ca  
519-888-4567 Ext. 33069

DEE KRAMER  
Associate Director, Networks & KTE  
dkramer@uwaterloo.ca  
416-467-6272

JACK CALLAGHAN  
Associate Director, Research  
callagha@uwaterloo.ca  
519-888-4567 Ext. 37080



Centre of Research  
Expertise for the  
Prevention of  
Musculoskeletal Disorders

POSTAL ADDRESS:

Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD)  
Faculty of Applied Health Sciences  
University of Waterloo, 200 University Ave W., Waterloo, ON N2L 3G1, Canada



Fax: 519-746-6776 • Website: [www.cre-msd.uwaterloo.ca](http://www.cre-msd.uwaterloo.ca) • E-mail: [wells@uwaterloo.ca](mailto:wells@uwaterloo.ca)