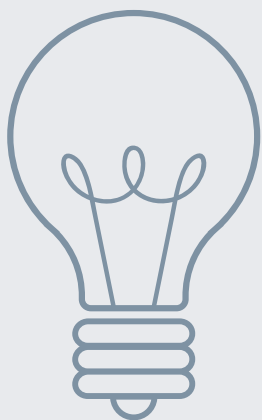


# RESEARCH AND WORKPLACE INNOVATION PROGRAM

2019 Report on Projects



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# OVERVIEW OF REPORT

This Report provides an update on the activities of the Research and Workplace Innovation Program (RWIP) in 2019. The Report is organized into three sections:

- New Grants Awarded
- Completed Projects
- RWIP Approved Project Summary - 2009 to 2019 (Appendix “A”).

The RWIP offers grants on an annual and competitive basis to support projects on injury prevention, occupational diseases and illnesses, and return to work of injured workers. Funding in 2019 was awarded under three core funding streams:

- Scientific Research
- Training and Education
- Workplace Innovation.

Established in 2009, the RWIP makes available \$1 million in funding each year. Eighty-five (85) projects were funded over the last 11 years.



# NEW GRANTS AWARDED IN 2019

## SCIENTIFIC RESEARCH

### *A HEALTH PROMOTION STRATEGY FOR LONG HAUL TRUCK DRIVERS IN MANITOBA*

Dr. Catherine Baxter,  
Brandon University

\$159,250

There has been limited research examining the health practices of truck drivers in Canada. Research is needed as driver obesity and associated chronic illnesses (cardiovascular diseases and diabetes) have been linked to increased absenteeism, driver turnover, lost time injuries and higher crash rates.

This descriptive, mixed-methods study will address this knowledge gap. Based on an ecological perspective, the research objectives are:

1. To describe how the mobile work environment supports or hinders healthy lifestyle practices amongst long haul truck drivers
2. To identify and describe the current health practices of long haul truck drivers while at work
3. To identify and describe long haul truck drivers' perceptions of the barriers and facilitators to adopting and maintaining healthy lifestyle practices while at work

### *PREDICTORS OF PROLONGED RECOVERY FOLLOWING ACCEPTANCE FOR DISABILITY BENEFITS: A SYSTEMATIC REVIEW AND META-ANALYSIS OF OBSERVATIONAL STUDIES*

Dr. Jason Busse,  
McMaster University

\$160,396

This project will conduct a systematic review and meta-analysis to establish predictors of prolonged recovery following receipt of disability benefits, across all clinical conditions. The project will identify eligible studies to explore predictors of claim duration, prolonged recovery or claim resolution after workers have been accepted for wage replacement benefits.

### *OCCUPATIONAL DISEASE SURVEILLANCE IN MANITOBA*

Dr. Cheryl Peters,  
Alberta Health Services  
and the University of  
Calgary, and

Dr. Allen Kraut,  
University of Manitoba

\$190,593

This project will develop an occupational disease surveillance system for Manitoba. The proposed methods build on an already-successful model established in Ontario. The Manitoba Occupational Disease Surveillance System (MODSS) will identify workers through WCB claim records, which will be linked to health databases and identify work-related risk factors for five well-known occupational diseases (asthma, contact dermatitis, Raynaud's disease, carpal tunnel syndrome and acute myocardial infarction).



## TRAINING AND EDUCATION

### "END DUMP" COURSE DEVELOPMENT AND TRAINING

Anthony Malanchuk,  
*HEAT (Heavy Equipment  
Aggregate Trucking  
Association of Manitoba)*

The Heavy Equipment & Aggregate Truckers (HEAT) Association of Manitoba will develop standardized training for end dump commercial truck drivers. The focus of this course will be to enhance communication and safe practices through training and practical experience that would assist and educate new and existing drivers.

\$186,600

## WORKPLACE INNOVATION

### NORTH FORGE TECHNOLOGY EXCHANGE AND BIT SPACE DEVELOPMENT VR SAFETY ORIENTATION EXPERIENCE

Marney Stapley,  
*North Forge  
Technology Exchange*

This project will seek to develop course delivery methods using new immersive, innovative methods for safety training using virtual reality technology. This course will provide an understanding of the potential hazards associated with the use of high risk equipment as well as the safety precautions required to prevent those hazards from occurring. The target group is new and existing members of North Forge Fabrication Lab.

\$100,000

The blended on-line virtual reality format will standardize safety training, allow greater access to training in rural and remote locations increasing access for refresher training, and improve retention.

### EFFECTIVE USE OF THE HIERARCHY OF CONTROLS FOR MACHINE SAFEGUARDING

Michael Gordon,  
*Workplace Engineering  
Solutions*

The goal of this project is to reduce dependency on less effective controls for machinery hazards which, in turn, works to eliminate machine related injuries.

\$74,290

A web portal will be used to share results and case studies and will also act as a community for continued engagement.

### CHEMICAL EXPOSURE CALCULATOR

Doug Wylie,  
*Safety in Numbers Inc.*

\$69,200

The development of a web-based chemical exposure calculator will allow workplaces to predict worker exposure to airborne chemicals. By providing answers to six or seven key questions, the calculator will predict that worker's exposure. The results will be expressed as a percent of the occupational exposure limit within exposure bands. This will provide a quick and easy assessment of airborne worker exposure and allows companies to assess chemicals proactively and explore substitution of safer chemicals.





# PROJECTS COMPLETED IN 2019

The following projects were completed during 2019.

## *DEVELOPMENT OF A PRE-PRODUCTION MSI CHECKLIST: RELIABILITY, VALIDITY AND EDUCATION*

Andrew Dolhy,  
A. Dolhy Ergonomics Inc.

\$48,883 awarded in 2017

A. Dolhy Ergonomics Inc. developed a user friendly quantitative ergonomic risk evaluation tool. The Manufacturing Ergonomic Risk Evaluation Tool (MERET) was validated against 75 manufacturing tasks with excellent validity and moderate reliability, providing production personnel, health and safety committee members, engineers, safety professionals and ergonomists with an evaluation tool which can be used on existing jobs as well as tasks in the design phase or before they are implemented on the shop floor. This will provide them with a significant advantage to identifying ergonomic issues. The MERET includes a User Guide and an Excel-based program for quick and efficient assessments.

## *DEVELOPMENT OF BENCHMARKING REPORTS AND A DASHBOARD TO CHANGE THE CONVERSATION IN CONSTRUCTION*

Ben Amick,  
Institute for Work  
and Health, and

Mike Jones, Construction  
Safety Association of  
Manitoba

\$198,190 awarded in 2016

This research was a collaboration between the Institute for Work & Health (IWH) and the Construction Safety Association of Manitoba (CSAM).

The purpose of this research was to affect a significant shift in the health and safety culture of construction businesses, especially firms that have limited time and resources to engage in OHS safety improvements.

A total of 910 organizations, distributed across 18 industry rate codes, eight geographical regions, and three firm size groups completed the survey. A series of scientifically credible leading indicators and a set of evidence-based benchmarks were developed for use in the construction sector. The big takeaway from this project was that one size fits all did not work, as benchmarks need to be tailored within sub-sectors by firm size.

## *INTO ACTION: PSYCHOLOGICAL SAFETY TRAINING FOR MANAGERS*

Joel Gervais and  
Jolen Galaugher,  
Vital Life Inc. Winnipeg

\$92,439 awarded in 2016

CBI Health Centre formerly Vital Life Inc. Winnipeg is providing mental health and addictions training to managers, human resource personnel and health and safety representatives in the oil, gas and mining, agriculture and healthcare sectors. The project team finalized the Resource Guides for the three targeted sectors and completed the development of supporting resources for the training. Fourteen manager training sessions and 15 "Lunch and Learn" workshops were delivered to workers in the healthcare sector. Policy and Prevention workshops were delivered to representatives in the oil, gas and mining, agriculture and healthcare sectors.

Based on these responses it was concluded that the large majority of respondents, across all three sectors and five positions, were satisfied or very satisfied with this workshop. The information was relevant to their workplaces and could be applied to achieve greater mental health and sobriety in the workplace and they would recommend the workshop to someone in their sector.



## USING TECHNOLOGY TO IMPROVE SAFETY PRACTICES FOR HIGH RISK HAZARDS IN CONSTRUCTION

Mike Moore,  
Manitoba Home Builders'  
Association

\$109,900 awarded in 2016

The Manitoba Home Builders' Association (MHBA) proposed the digitalization of four safety courses—confined space, fall protection, scaffolding and safe use of power tools—using virtual reality technology for use in both blended and on-line delivery of training in support of the MHBA's safety training courses. The safety programs were delivered at and in partnership with the Construction Safety Association of Manitoba (CSAM). The target group included general labourers, tradespeople, new supervisors and safety trainers working in homebuilding, commercial and the heavy construction industries and transportation.

The blended on-line virtual reality format standardizes safety training, allows greater access to training in rural and remote locations, increases access for refresher training, and improves retention through use of different teaching strategies.

The Manitoba Home Builders' Association and BIT Space Development presented the new resources to 40 employers and had a booth to showcase them to over 200 participants. Participants had a chance to learn about the new safety resources and try them out first hand.

Lynette Plett, Senior Executive Director, Industry, Training and Employment Services, Government of Manitoba, stopped by BIT Space Development to try out the new technology. Lynette said out of all the technology tried that day, the construction resources developed for the WCB RWIP, were the most engaging.

## DEVELOPMENT OF A COMPREHENSIVE TOOLKIT FOR EVALUATING WORKPLACE MUSCULOSKELETAL INJURY INTERVENTIONS: SWINE INJECTION TECHNOLOGIES AS A TEST CASE

Catherine Trask,  
Brenna Bath,  
Stephan Milosavljevic,  
Aaron Kociolek,  
Bernardo Predicala,  
Lee Whittington  
and Erika Penz,  
University of Saskatchewan

\$119,650 awarded in 2015

Agriculture in general, and pig farming in particular, have many risk factors for musculoskeletal injury and disorders. Being a production-oriented and economically driven industry, the rapid intensification in pork production has continually introduced new processes and equipment, although the pace of developing workplace health and safety evaluation tools to implement injury prevention interventions has not kept up with progress on the production side.

In order to evaluate workplace health and safety relative to improvements in productivity, this project developed a decision tool applicable to new workplace technologies. The tool is multidimensional, incorporating implementation costs, productivity changes, health and safety impacts, and worker feedback and preferences. The test case for this assessment toolkit was needle-less injectors, a timely and archetypal technological change in swine production.

The benefit of needle-less injection was slightly higher than that of conventional needle, although these benefits are limited to larger facilities (greater than 400 sows). Due to the large start-up costs of the needle-less injector, the economic benefits begin accruing after the first year.



## ENGAGING AN ORGANIZATION IN THE PREVENTION OF WORK-RELATED INJURIES

Wendy Barlishen,  
St. Boniface Hospital

\$57,056 awarded in 2015

This project undertook enhancements to the Occupational Health and Safety Incident Tracker system currently in use at St. Boniface Hospital. St. Boniface Hospital launched the use of a visual display of injuries to assist in building an injury prevention program to minimize risks to health care workers. The visual display served as a tool to inform and educate the organization regarding employee injuries. The use of dots to show clusters and patterns revealed trends needing to be addressed. A visual representation of the injuries occurring within each department was useful to provide an overall view of what was occurring and assist in reducing the amount of workplace injuries. The visual display has created a sense of awareness regarding workplace injuries and the importance of working together to mitigate and/or eliminate risk.

## A KNOWLEDGE TRANSFER INTERVENTION WITH SUPERVISORS: CAN WE REDUCE INJURY BY IMPROVING KNOWLEDGE TRANSLATION STRATEGIES FOR DIRECT SUPPORT WORKERS OF PEOPLE WITH INTELLECTUAL DISABILITY WHO DISPLAY CHALLENGING BEHAVIOUR?

Dr. Beverley Temple,  
University of Manitoba and  
St. Amant Research Centre

Dr. Toby Martin,  
Jennifer Kilimnik,  
St. Amant Centre

In partnership with the University of Manitoba and St. Amant Centre this study investigated the impact of knowledge translation initiatives on the retention of training knowledge and the practical utilization of training given to frontline staff who work with clients with developmental disabilities at St. Amant. The methodology for the study was the “Promoting Action on Research Implementation in Health Services” framework. Phase One and Phase Two of the study are completed. This study is a sequel to a study undertaken in 2011.

Dr. Charmayne Dubé,  
New Directions, and

Lisa Demczuk,  
University of Manitoba

Using audit and feedback, the initial study identified a gap between training and practice contexts. Research undertaken found ways to assist supervisors or managers to use knowledge translation to improve expectations when Direct Support Workers (DSPs) receive training and to apply the training effectively in their everyday work situations.

\$138,331 awarded in 2014

All supervisors indicated that new people in leadership positions should take the intervention educational course.

Supervisors reported the follow-up workshop was a necessary opportunity to work through case studies with other supervisors in similar roles and ‘bring the material together’ in a way that fit with their workplace context.

Supervisors recognize they are working in complex systems and need to consider a multitude of factors that influence support for DSPs.





## *SUPERVISOR AND WORKER PERSPECTIVES ON WORKPLACE ACCOMMODATIONS FOR MENTAL HEALTH*

*Dr. Vicki Kristman,  
Lakehead University*

This study examined the factors that support workplace accommodations for workers with a mental health disorder from the perspectives of supervisors and workers.

*Dr. Marc Corbière,  
Université du Québec  
à Montréal*

The study involved distributing surveys to supervisors and workers from 31 randomly selected businesses across Manitoba and Northwestern Ontario. To participate in the study, businesses had to meet the requirements of 50 employees and be from one of the 10 industrial groups identified. From the results, there were 10 accommodations that were recommended ranked highly by workers and were well supported by supervisors as a starting point for consideration.

*Dr. William Shaw,  
Liberty Mutual Research  
Institute for Safety*

*Dr. Karen Harlos,  
University of Winnipeg, and*

*Margaret Cernigoj,  
Workplace Safety &  
Prevention Services,  
Ontario*

\$170,839 awarded in 2015



# RWIP APPROVED PROJECTS 2009 TO 2019

Revised funding may occur in two ways. Frequently the entire original funding is not required for the successful completion of a project, resulting in a decreased funding amount. Occasionally a grant recipient may request an increase in funding. The Administration may approve increases up to \$20,000 as long as the total project cost does not exceed \$200,000. Increases in excess of those amounts are subject to Board approval.

FUNDING STREAM	NUMBER OF PROJECTS	ORIGINAL APPROVED FUNDING	COMPLETED	CANCELLED	NEW PROJECTS APPROVED IN 2019	IN PROGRESS	REVISED FUNDING
Workplace Innovation	24	\$2,852,741	17	1	3	3	\$2,513,002
Scientific Research	36	\$5,362,785	19	1	3	13	\$5,202,896
Training and Education	12	\$1,402,597	8	0	1	3	\$1,404,799
Partnerships	5	\$545,605	5	0	0	0	\$525,889
Special Funding	3	\$568,190	2	0	0	1	\$568,190
Request for Proposals	5	\$324,875	4	1	0	0	\$359,710
Totals:	85	\$11,056,793	55	3	7	20	\$10,581,486







## RESEARCH AND WORKPLACE INNOVATION PROGRAM

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