

What is FIREWELL?

A team of firefighters, scientists, and stakeholders working together to improve firefighter health and safety through research.

INSIDE

1. FIREWELL Update
2. New Partnerships
3. Research Updates
4. Website
5. Team News
6. 2017 in Review
7. What's Coming in 2018
8. Team Members

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Website: <https://firewell.ca/>

FIREWELL Update

A Message from the Project Director: Joy MacDermid

Thank you all for your valuable contributions to FIREWELL this year.

2017 was a productive year for our team. We strengthened existing collaborations and established new partnerships with firefighters, researchers and organizations from across Canada. We launched the FIREWELL website and new studies. We published findings from our firefighter studies. FIREWELL research was presented at local, national and international conferences. We submitted a partnership grant to CIHR-SSHRC.

We welcome all feedback on the research process or future directions. We look forward to continuing our collaborations in 2018!



New Partnerships

FIREWELL has expanded to a coast-to-coast partnership that represents diversity in types of fire services, genders, provinces, and rural/urban contexts. We would like to welcome the following individuals and organizations who joined the FIREWELL team in 2017:

Firefighter Collaborators

- Mr. Steve Fraser, Vancouver Fire & Rescue Services
- Ms. Louise Hine-Schmidt, Fire Service Women of Ontario

- Assistant Chief Ken McMullen, Calgary Emergency Management Agency
- Mr. Chris Ross, Montreal Firefighters Association

Researchers

- Ms. Amanda Brazil, University of Prince Edward Island & Cross Roads Fire Department
- Dr. Nick Carleton, University of Regina
- Dr. Heather Carnahan, Memorial University
- Dr. Heidi Cramm, Queen’s University
- Dr. David Frost, University of Toronto

Firefighter Partner Organizations

- Fire Service Women Ontario
- Montreal Firefighters Association
- Prince Edward Island Firefighters Association
- Thunder Bay Fire and Rescue
- Thunder Bay Professional Fire Fighters Association
- Vancouver Fire & Rescue Services

Research/Academic Partner Organizations

- Canadian Institute for Military and Veteran Health Research
- Canadian Institute for Public Safety Research and Treatment
- The Offshore Safety and Survival Centre – Marine Institute

Other Partner Organizations

- Canadian Mental Health Association – British Columbia
- Canadian Mental Health Association – Prince Edward Island
- Canadian Mental Health Association – Vancouver-Fraser

Research Updates

I) Environmental Scan

A review of Canadian firefighter websites

Funder: Canadian Institutes for Health Research & Social Sciences and Humanities Research Council

Aim: To search and catalogue the health information resources available on Canadian firefighter websites.

Status: Manuscript under review by Journal of Medical Internet Research.

Lead: Dr. Joy MacDermid, Western University

A review of published literature on firefighter research

Funder: Canadian Institutes for Health Research & Social Sciences and Humanities Research Council

Aim: To identify what type of research has been conducted on firefighter health, what specific injury prevention and musculoskeletal interventions have been tested, the quality of the literature, and the involvement of health professionals in customizing interventions for firefighters.

Status: Data analysis and report writing

Lead: Dr. Joy MacDermid, Western University

II) Establishing Firefighters' Research Priorities

A qualitative study exploring firefighters' work health priorities

Funder: Canadian Institutes for Health Research & Social Sciences and Humanities Research Council

Aim: To understand firefighters' concerns regarding their musculoskeletal health and critical incident exposure and how future research might help address these issues.

Status: Data collection; analysis and report writing (we are trying to recruit more firefighters from Western Canada).

Lead: Dr. Joy MacDermid, Western University

III) Piloting Potential Tools or Interventions

We are currently pilot testing the following tools and processes to see if they will help meet firefighters' needs to maintain full active duty.

Adapting Firefighter TEAM-Feedback Modules to Context

Funder: Canadian MSK Rehab Research Network

Aim: To establish the feasibility of the Physical Demands Analysis and TEAM-Feedback Modules as injury prevention strategies for firefighters in different geographical locations.

Lead: Dr. Kathryn Sinden, Lakehead University

Adapting the Tools for Modified Work for Workers with Musculoskeletal Disorders for Firefighters

Funder: Canadian MSK Rehab Research Network

Aim: To adapt the Work-related Musculoskeletal Disorders: Guide and Tools for Modified Work (TMW) to the specific needs of firefighters.

Lead: Dr. Susan Stock, University of Montreal

Wearable Technology for Estimating Oxygen Consumption

Funder: Canadian Institutes for Health Research

Aim: To assess the accuracy and reliability of select wearable technology (Garmin Fenix 3, Garmin Forerunner, Fitbit Charge 2) to estimate firefighters' oxygen consumption during fitness testing and simulations of physically demanding, structural firefighting tasks.

Lead: Dr. Veronika Jamnik, York University

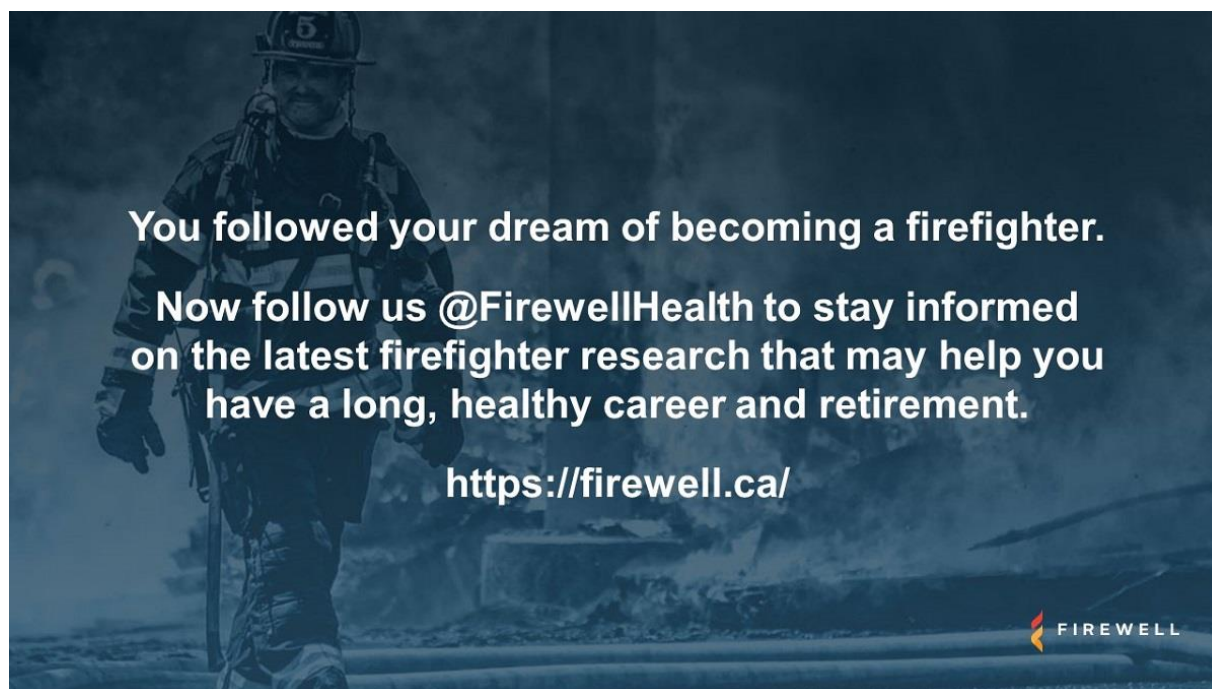
Website

The FIREWELL website (<https://firewell.ca/>) is now live! The website will be our platform for sharing the latest research findings (FIREWELL and other research), and delivering interventions for future trials.

We are currently beta testing the Members-Only sections with firefighters and working on translating the content from English to French.

The website is still a work in progress so any suggestions on content (e.g., firefighter news, publications, presentations, grants) and ways to improve the site are always welcome!

Connect with us by following us on social media:



[@FirewellHealth](https://twitter.com/FirewellHealth)



[@FirewellHealth](https://www.facebook.com/FirewellHealth)

Team News

Congratulations to **Rob D'Amico** (Hamilton Professional Fire Fighters Association) who was profiled in CIHR's Celebrating Health Research storybook. Rob has been collaborating with FIREWELL researchers for 7 years and has been instrumental in the development and implementation of our research on firefighter musculoskeletal health.

To read Rob's CIHR research story: <http://www.cihr-irsc.gc.ca/e/50662.html#amico>

To view Rob's video on why he got involved with FIREWELL research: <https://firewell.ca/research/participate/>

2017 in Review

FIREWELL members bolded, *Firefighters, Trainees underlined

Publications

1. **Negm A, MacDermid JC, Sinden K, D'Amico R*, Lomotan M**, MacIntyre NJ. Prevalence and distribution of musculoskeletal disorders in firefighters are influenced by age and length of service. *Journal of Military, Veteran and Family Health*, in press, 2017.
2. **Nazari G, MacDermid JC, Sinden K**, Overend T. Comparison of Canadian firefighters and normal controls based on the submaximal fitness testing and strength considering age and sex. *Int J Occup Saf Ergon*. 2017 Sep 7:1-29. [Epub ahead of print].
3. **Nazari G, MacDermid JC**. Minimal Detectable Change Thresholds and Responsiveness of Zephyr Bioharness & Fitbit Charge Devices. *Journal of Strength and Conditioning Research*. 2017 Jul 18. [Epub ahead of print]
4. **Nazari G, MacDermid JC, Sinden KE**, Richardson J, Tang A. Reliability of Zephyr Bioharness and Fitbit Charge Measures of Heart Rate and Activity at Rest, During the Modified Canadian Aerobic Fitness Test and Recovery. *Journal of Strength & Conditioning Research*, 2017 Feb 13.
5. **Shi Q, MacDermid JC, Tang K, Sinden KE**, Walton D, Grewal R. Confirmatory Factor and Rasch Analyses Support a Revised 14-Item Version of the Organizational, Policies, and Practices (OPP) Scale. *J Occup Rehabil*. 2017 Jun;27(2):258-267.

Presentations

1. **MacDermid J, Sinden K, D'Amico R*, Nazari G, FIREWELL**. Measuring, Analyzing and Retraining Movement using Occupationally Valid Evaluations (M.O.V.E.). Ontario Ministry of Labour Research Day. Toronto, ON. November 16, 2017.
2. **Perruzza S, Hempstock G, Braun A**. (Supervisors: **MacDermid J & Sinden K**). A scoping review of musculoskeletal injuries in firefighters: Epidemiology, and primary/secondary prevention. McMaster University Research Evidence-Based Practice Symposium. Hamilton, Ontario. July 25, 2017.

3. Hurley T, Zalan K, Wang J, Habrowski E. (Supervisors: **MacDermid J & Sinden K**). Evaluating the reliability of the Ovako Working Posture Assessment System (OWAS) to characterize firefighter injury risk using Dartfish video analysis software. McMaster University Research Evidence-Based Practice Symposium. Hamilton, Ontario. July 25, 2017.
4. **Negm A, MacDermid J, Sinden K, D'Amico R***, MacIntyre N. Prevalence and Distribution of Musculoskeletal Disorders in firefighters are influenced by Age and Tenure [poster]. World Confederation of Physical Therapy Congress 2017. Cape Town, South Africa. July 4, 2017.
5. **Sinden K, MacDermid J**, Moll S, Jenkyn T, **D'Amico R***. Determining reliability of Dartfish movement analysis software to identify upper extremity postures during a firefighter lift-task: Implications for ergonomic practice [podium]. 2nd Quebec Congress in Adaptation-Rehabilitation Research. Montreal, QC. May 18-19, 2017.
6. **Sinden K, MacDermid J**. Sex differences in firefighter physiological response and task performance strategies: Implications for injury prevention [poster]. 11th Annual Meeting of the Organization for the Study of Sex Differences. Montreal, QC. May 15-18, 2017.

Grants Awarded

1. Project Title: Firefighter burden of injury relative to specific fire response characteristics
 Nominated PI: **Sinden KE**
 Co-I: **Hay J*, MacDermid JC**
 Funding Agency: The Council of Canadian Fire Marshals & Fire Commissioners and The Canadian Association of Fire Chiefs
 Funding Period: 2017-2018
 2. Project Title: Adapting Firefighter TEAM-Feedback Modules to Context: Building Capacity in Firefighter Injury Prevention
 Nominated PI: **Sinden KE**
 Co-I: **Hay J*, MacDermid JC, Carnahan H, Brazil A***
 Funding Agency: Canadian MSK Rehab Research Network
 Funding Period: 2017-2018
 3. Project Title: Adapting the Tools for Modified Work for Workers with Musculoskeletal Disorders for Firefighters
 PI: **Stock S**
 Co-I: **Sinden K, MacDermid JC**, Cote J, Dionne C, Vezina N, **Ross C***, Didane O.
 Funding Agency: Canadian MSK Rehab Research Network
 Funding Period: 2017-2018
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What's Coming in 2018

FIREWELL Stories & Research Champions

Storytelling is a valuable tool to help the public, research funders, worker's comp, and other relevant stakeholders understand firefighters' unique and high-risk work environment.

In 2018, we plan to create series of stories (video and written) that focus on firefighters' labour-intensive job tasks, and unpredictable exposures, shift demands and occupational hazards, and the impact of physical and mental injuries. We are open to story ideas and will be looking for firefighters who are comfortable sharing their stories on camera or online. Please submit story ideas to: lomotam@mcmaster.ca

In the new year, we will also be launching a monthly "Research Champions" series which will profile our firefighter members and their involvement in research.

New Project: Development of Firefighter-Specific, Self-Report Survey on Work Limitations

We have found that the traditional, self-reported, generic work limitations surveys are reliable, but not that useful for firefighters. In 2018, Dr. Joy MacDermid is planning to develop a work limitations survey that is more appropriate for firefighters. We will be looking for firefighters who are interested in contributing to the design of this new survey by helping us generate items for the survey.

Team Members (in alphabetical order)

Firefighters

- Mr. Rob D'Amico, Hamilton Professional Fire Fighters Association
- Mr. Steve Fraser, Vancouver Fire & Rescue Services
- Chief John Hay, Thunder Bay Fire Rescue
- Ms. Louise Hine-Schmidt, Fire Service Women of Ontario
- Assistant Chief Ken McMullen, Calgary Emergency Management Agency
- Mr. Chris Ross, Montreal Firefighters Association

Researchers

- Ms. Amanda Brazil, University of Prince Edward Island & Cross Roads Fire Department
- Dr. Nick Carleton, University of Regina
- Dr. Heather Carnahan, Memorial University
- Dr. Heidi Cramm, Queen's University
- Dr. David Frost, University of Toronto
- Dr. Veronica Jamnik, York University
- Dr. Joy MacDermid, University of Western Ontario & McMaster University

- Dr. Kathryn Sinden, Lakehead University
- Dr. Susan Stock, University of Montreal

Healthcare Collaborators

- Dr. Ahmed Negm, McMaster University
- Dr. Mike Pysklywec, Occupational Health and Exposure Program (Hamilton)
- Dr. Liz Scott, Organizational Solutions Inc.

Firefighter Partner Organizations

- Fire Service Women Ontario
- Hamilton Fire Department
- Hamilton Professional Fire Fighters Association
- Montreal Firefighters Association
- Prince Edward Island Fire Fighters Association
- Thunder Bay Fire and Rescue
- Thunder Bay Professional Firefighters Association
- Vancouver Fire & Rescue Services

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- The Offshore Safety and Survival Centre – Marine Institute

Other Partner Organizations

- Canadian Mental Health Association – British Columbia
- Canadian Mental Health Association – Prince Edward Island
- Canadian Mental Health Association – Vancouver-Fraser
- Dartfish Canada
- Organizational Solutions Inc.

FIREWELL Coordinating Centre

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