Report to Community

Firefighter Injury/illness Remediation Enterprise: Work-participation that Enables Life & Livelihood



What is FIREWELL?

A national wellness community of firefighters and researchers working together to share ideas and advance workplace health and safety.

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Twitter: @FirewellHealth
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Website: https://firewell.ca/

FIREWELL Update

A Message from the Project Director: Dr. Joy MacDermid



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

This year has been quite a journey with its ups and downs. We're proud of the progress that we've made working with firefighters, researchers, and partner organizations. In 2018, we launched research studies to create new knowledge, published our findings in peer-reviewed journals, and raised awareness of firefighter health research through presentations (academic and firefighter) and using social media.

We wish you a happy and safe holiday season. We look forward to continuing our collaborations and fresh opportunities to improve the health and wellbeing of firefighters in 2019!

New Members

A warm welcome to our members who joined FIREWELL this fall:

Mr. Nick Halmasy is a healthcare professional specializing in first responder mental health and the founder of *After the Call*, a website that offers free mental health resources to both first responders and their families. He was also a former firefighter and fire instructor with over 10 years of experience in the fire service.

Dr. Michael Williams-Bell is a researcher at Durham College and the University of Ontario Institute of Technology. His research involves the use of Big Data analytics and virtual reality simulation to improve training and resilience assessment in firefighters.

Study Updates

Current Projects funded by a FIREWELL grant

(e.g.,, Canadian Institutes for Health Research (CIHR) or Social Sciences and Humanities Research Council (SSHRC))



Assessing the Impact of the Resilient Minds Program in Fire Departments

Funder: CIHR & SSHRC

Aim: To assess the impact of a mental health training program in volunteer and career firefighters.

Status: Recruitment and data collection

<u>Lead</u>: Ms. Amanda Brazil, University of Prince Edward Island & Canadian Mental Health Association-Prince Edward Island and Dr. Joy MacDermid, Western University

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

Funder: CIHR & SSHRC

Aim: To create a work limitations survey that targets the high task demands performed by firefighters on the job.

Status: Data analysis (survey construction)

Lead: Dr. Joy MacDermid, Western University

Career firefighters' real-time physiological response to firefighting tasks

Funder: Lakehead Research Development Grant

Aim: To determine career firefighters' real-time physiological response to two firefighting tasks (hose drag vs. patient lift) over 6 months.

Status: Data collection

Lead: Dr. Kathryn Sinden, Lakehead University

A qualitative study exploring firefighters' work health priorities

Funder: CIHR & SSHRC

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



Status: Data analysis and report writing

Lead: Dr. Joy MacDermid, Western University

Prevalence of Musculoskeletal Injuries in Firefighters: A Systematic Review and **Meta-analysis**

Funder: CIHR & SSHRC

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: Report writing

Lead: Dr. Joy MacDermid, Western University

Measuring, Analyzing and Retraining Movement using Occupationally Valid **Evaluations (M.O.V.E.)**

Funder: Ontario Ministry of Labour

Aim: 1) To test whether a wearable technology (Zephyr BioHarness) can monitor FF physiologic changes and fitness levels. 2) To identify relevance and validity of musculoskeletal risk assessment tools, video analysis (Dartfish) and virtual reality software (Kinect, Jack) in assessing firefighting tasks.

Status: Data analysis and report writing

Lead: Dr. Joy MacDermid, Western University and 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.

Status: Report writing

Lead: Dr. Susan Stock, University of Montreal

Effectiveness of select wearable technologies for estimating submaximal and maximal oxygen consumption

Funder: CIHR

Aim: To examine the effectiveness of select wearable technologies for estimating oxygen consumption (VO₂) and maximal oxygen uptake (VO₂max).



Status: Report writing

Lead: Dr. Veronika Jamnik, York University

Effectiveness of Home Fire Safety Interventions: A Systematic Review and Meta-Analysis

Funder: None

Aim: To assess the effectiveness of Home Fire Safety (HFS) interventions versus other interventions/no interventions/controls on HFS knowledge and behaviour at short-, intermediate- and long-term follow ups.

Status: Report writing

Lead: Dr. Joy MacDermid, Western University

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.

Status: Not yet recruiting

<u>Lead</u>: Dr. Kathryn Sinden, Lakehead University

2018 Research Highlights

FIREWELL members bolded, Firefighters italicized, Trainees underlined

*Publication or presentation supported by a FIREWELL research grant from CIHR, SSHRC, Ministry of Labour, Canadian Association of Fire Chiefs, or Lakehead.



Peer-Reviewed Publications

- 1. *MacDermid J, Nazari G, Rashid C, Sinden K, Carleton N, Cramm H. Two-month Point Prevalence of Exposure to Critical Incidents in Firefighters in a Single Fire Service. Work. 2018, in press.
- 2. *Hu MA, MacDermid JC, Killip S, Lomotan M, FIREWELL. A structured review of health information on firefighter websites. doi:10.2196/ijmr.9369. Interact J Med Res, accepted for publication, June 2018.



- 3. *MacDermid JC, Tang K, Sinden KE, *D'Amico R*. Work functioning among firefighters: a comparison between self-reported limitations and functional task performance. J Occupational Rehabilitation. 2018 May 25 [Epub ahead of print].
- 4. *Nazari G, **MacDermid J, Sinden K**, Overend T. The Relationship between Physical Fitness and Simulated Firefighting Task Performance. Rehabilitation Research and Practice. Volume 2018 (2018), Article ID 3234176, 7 pages.
- 5. *Nazari G, Bobos P, **MacDermid J, Sinden K**, Richardson J, Tang A. Psychometric Properties of the Zephyr Bioharness Device: A Systematic Review. BMC Sport Sci Med Rehabil. 2018;10:6.
- 6. Gumieniak RJ, Shaw J, Gledhill N, **Jamnik VK**. Physical employment standard for Canadian wildland fire fighters; identifying and characterising critical initial attack response tasks. Ergonomics. 2018 May 7:1-12 [Epub ahead of print].
- 7. Gumieniak RJ, Gledhill N, **Jamnik VK**. Physical employment standard for Canadian wildland fire fighters; developing and validating the test protocol. Ergonomics. 2018 May 2:1-13 [Epub ahead of print].
- 8. Gumieniak RJ, Gledhill N, **Jamnik VK**. Physical employment standard for Canadian wildland firefighters: examining test-retest reliability and the impact of familiarisation and physical fitness training. Ergonomics. 2018 May 4:1-10 [Epub ahead of print].
- 9. Carleton RN, Afifi TO, Taillieu T, Turner S, El-Gabalawy R, Sareen J, Asmundson GJG. Anxiety-related psychopathology and chronic pain comorbidity among public safety personnel. J Anxiety Disord. 2018 Apr;55:48-55 [Epub 2018 Mar 13].
- 10. Carleton RN, Afifi TO, Turner S, Taillieu T, LeBouthillier DM, Duranceau S, Sareen J, Ricciardelli R, MacPhee RS, Groll D, Hozempa K, Brunet A, Weekes JR, Griffiths CT, Abrams KJ, Jones NA, Beshai S, Cramm HA, Dobson KS, Hatcher S, Keane TM, Stewart SH, & Asmundson GJG. Suicidal Ideation, Plans, and Attempts Among Public Safety Personnel in Canada. Canadian Psychology. Advance online publication (Feb 8 2018).
- 11. Carleton RN, Afifi TO, Turner S, Taillieu T, Duranceau S, LeBouthillier DM, Sareen J, Ricciardelli R, MacPhee RS, Groll D, Hozempa K, Brunet A, Weekes JR, Griffiths CT, Abrams KJ, Jones NA, Beshai S, Cramm HA, Dobson KS, Hatcher S, Keane TM, Stewart SH, Asmundson GJG. Mental Disorder Symptoms among Public Safety Personnel in Canada. Can J Psychiatry. 2018 Jan;63(1):54-64 [Epub 2017 Aug 28].





Presentations (First author = presenter)



FIREWELL trainees, Shannon Killip (left) and Sara Sayed (right), present at CARWH, Vancouver.

- 1. *MacDermid J. Empowering Firefighter Health Through Inclusive Research. 2018 Fire Service Women Ontario (FSWO) Professional Development Symposium. Waterloo, Canada. October 27, 2018.
- 2. *Sinden K, Lorbergs A, MacDermid J, Deschamps L. Analysis of the National Fire Information Database to identify Canadian firefighters' injuries in relation to fire response characteristics [poster]. The 10th Biennial Conference of the Canadian Association for Research on Work and Health, Vancouver, Canada. Oct 21-23, 2018.
- 3. *Sayed S, **Sinden K**, **Bolduc R**. Identifying career firefighters' real-time physiological response during firefighting tasks: Implications for injury prevention. The 10th Biennial Conference of the Canadian Association for Research on Work and Health, Vancouver, Canada. Oct 21-23, 2018.
- 4. *Killip S, MacDermid J, Sinden K, Gewurtz, R. Differences in disability management claims and the return to process of first responders compared to high and low physical demand occupations [poster]. The 10th Biennial Conference of the Canadian Association for Research on Work and Health, Vancouver, Canada. Oct 21-23, 2018. *Top Poster Abstract Selected for Presentation.
- 5. **Keir J**. An Overview of Past and Present Research on Firefighters' Toxic Exposures: What Does it All Mean? Firehouse Expo 2018. Nashville, Tennessee. Oct 19, 2018.
- 6. *Sayed S, **Bolduc R**, **Sinden K**. Career firefighters' real-time physiological response to firefighting tasks over 6 months: Implications for injury prevention. 49th Annual Conference of the Association of Canadian Ergonomists (ACE) & 6th Conference of Centre for Research in Occupational Safety and Health (CROSH), Sudbury, Canada. Oct 16-18, 2018. *JM Christensen Masters Award Winner.



- 7. *MacDermid J, Hu M, Lomotan M, Brazil A, D'Amico R, Fraser S, Hay J, Hine-Schmidt L, McMullen K, Ross C, FIREWELL. A Qualitative Study on Firefighters' Work Health Priorities [podium]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 8. *Nazari G, MacDermid JC, Sinden K, D'Amico R, Brazil A, Carleton N, **Cramm H.** Prevalence of Exposure to Critical Incidents in Firefighters Across Canada [poster]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.

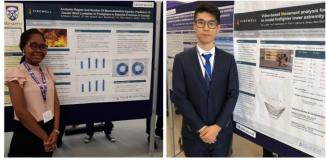


Goris Nazari (left), Dr. Joy MacDermid (top right) and Dr. Tara Kajaks (bottom right) present at CIMVHR, Regina.

- 9. *Kajaks T, **MacDermid JC**, Galea V, Vrkljan B. The extra burden: accounting for external
- firefighter loads using digital human modeling for ergonomic assessments [podium]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 10.*MacDermid J, Hu M, Killip S, FIREWELL. A structured review of health information on firefighter websites [poster]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 11. Williams-Bell M, McGregor C, Bonnis B. Using Streaming Big Data for Resilience Assessment within Pre-service Firefighter Extreme Condition Training [poster], Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 12. Cramm H, Groll D, Dolp R, Carleton RN. Views and Opinions Regarding Mental Illness and Treatment in Canadian Firefighters [podium]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 13. Carleton RN, Cramm H, Groll D, McCreary D, Dolp R. Comparing Occupational Stressors and the Mental Health of Male and Female Canadian Firefighters [podium]. Canadian Institute for Military and Veteran Health Canada Forum 2018. Regina, Saskatchewan. Oct 15-17, 2018.
- 14. Cramm H. Canadian Research on Firefighter Health: The State of the Nation. Fire-Rescue Canada 2018. Ottawa, Canada. Sept 17, 2018.



- 15. *MacDermid JC. Musculoskeletal Problems and Work Limitations in Firefighters. Mississauga Fire and Emergency Services (MFES) Wellness and Fitness Initiative (WFI) Open House. Mississauga, Ontario. May 31, 2018.
- 16.*Sinden KE. CROSH Webinar: Incorporating Sex and Gender into Applied Ergonomic Research: Important Insights Gained! May 30, 2018.
- 17.*Kajaks T, **MacDermid JC**, Galea V, Vrkljan B. The extra burden: accounting for external firefighter loads using digital human modeling for ergonomic assessments [poster]. Canadian Bone & Joint Conference. London, Ontario. May 11-12, 2018.
- 18.*Nazari G, MacDermid JC, Sinden KE, Overend TJ. The Relationship between Physical Fitness and Simulated Firefighting Task Performance [poster]. Canadian Bone & Joint Conference. London, Ontario. May 11-12, 2018.
- 19. *Osifeso TA, MacDermid JC, Sinden **KE**, Macedo L. Anatomic region and number of musculoskeletal injuries, predictors of greater work limitations in firefighters: A cross-sectional study [poster]. Canadian Bone & Joint Conference. London, Ontario. May 11-12, 2018.



FIREWELL trainees, Temitope Osifeso (left) and Steve Lu (right), present at CBJC, London.

20.*Lu Z, MacDermid JC, Sinden KE,

- **D'Amico R**. Movement analysis for occupationally valid evaluation (MOVE) using video software in the context of firefighters' high-rise lifting task [poster]. Canadian Bone & Joint Conference. London, Ontario. May 11-12, 2018.
- 21. **Keir J**. A Review of Past and Present Studies on Firefighters' Toxic Exposures. Ontario Association of Fire Chiefs Conference 2018. Mississauga, Ontario. May 3 2018.
- 22.*Sayed ST, Sinden KE, Hurley T, Zalan K, Wang J, Habrowski E, MacDermid J, **FIREWELL**. Identifying musculoskeletal injury risk for application in injury prevention tool development for career firefighters. Crossroads Interdisciplinary Health Research Conference. Halifax, Nova Scotia. March 9-10, 2018.
- 23. **Keir J**. Singeing Risk: A Scientific Approach to Reducing Firefighters' Exposure to Toxic Exposures. Fire House World Conference 2018. San Diego, California. March 7 2018.
- 24.*Osifeso T, **MacDermid J, Sinden K**. Anatomic region and number of musculoskeletal injuries, predictors of greater work limitation in firefighters in selected provinces in Canada [poster]. McMaster University Rehabilitation Science Graduate Programs Open House. Hamilton, Ontario. January 17, 2018.



25.*Hu M, **MacDermid J**, Killip S, FIREWELL. A structured review of health information on firefighter websites [poster]. McMaster University Rehabilitation Science Graduate Programs Open House. Hamilton, Ontario. January 17, 2018.

Team News & Accomplishments

Dr. Heidi Cramm (Queen's University & Canadian Institute for Public Safety Research and Treatment)

• Winner of the 2018 Canadian Association of Occupational Therapists (CAOT) Award for Leadership in Occupational Therapy.

Captain Rob D'Amico (Hamilton Professional Fire Fighters Association) & Dr. Joy **MacDermid** (Western University)

 Named a finalist for the inaugural McMaster University President's Award for Community-Engaged Scholarship for the FIREWELL partnership.

Ms. Jennifer Keir (University of Ottawa)

- Featured in the University of Ottawa Faculty of Science's 2017-2018 Annual Report for her Master's study on Ottawa firefighters' toxic exposures during active fire suppression.
- Received funding for her PhD project, "Dermal Cleaning Procedures to Reduce Firefighters' Exposures to Combustion-derived PAHs", from the Canadian Forces Fire Marshal, International Association of Fire Fighters, Ottawa Professional Fire Fighters Association, Association des Pompiers de Montréal, and Institut de Protection Contre les Incendies du Québec.
- Wrote an article on, "Cancer Prevention Methods: Fact vs. Fiction", that was published by Firehouse (Dec 2018).

Ms. Shannon Killip (Master's student, McMaster University, Supervisor: Dr. Joy MacDermid)

• Successfully defended her MSc thesis, "Identifying predictors of return to work and unique aspects of disability management in first responders affected by musculoskeletal injuries and mental health".

Ms. Temitope Osifeso (Master's student, McMaster University, Supervisor: Dr. Joy MacDermid)

• Successfully defended her MSc thesis, "The role of firefighter health as predictors of work limitations in fire service".



President Chris Ross (Montreal Firefighters Association)

• Elected as the new President of the Montreal Firefighters Association.

Ms. Sara Sayed (Master's student, Lakehead University, Supervisor: Dr. Kathryn Sinden)

• Winner of the M Christensen Masters Award for her podium presentation, "Career firefighters' real-time physiological response to firefighting tasks over 6 months: Implications for injury prevention", at the Association of Canadian Ergonomists (ACE) & Centre for Research in Occupational Safety and Health (CROSH) 2018 Annual Conference in Sudbury, Canada.

In the Media



Dr. Kathryn Sinden (Lakehead University), Thunder Bay Fire Rescue Fire Chief John Hay and Firefighter Regan **Bolduc** were featured on the CBC Morning Show with Lisa Laco on June 26th. During the 12-minute radio interview, they discussed how they're using research to address firefighters' unique needs at the workplace.

Dr. Sinden and her collaborative research with the Thunder Bay firefighters was also highlighted in Research Infosource's special issue on Canada's Innovation Leaders 2018 (Article: "The regional impact of university research").

Ms. Jennifer Keir's (University of Ottawa) PhD study on minimizing firefighters' exposures to toxic compounds was featured in Le Droit's November 2018 article,"Nouvelles mesures en place pour les pompiers d'Ottawa."

Dr. David Frost (University of Toronto) was featured on Episode #115 of the Behind the Shield podcast. Topics discussed during the 1.5-hour interview included: movement-guided fitness, injury prevention, and wellness programs for firefighters.

Ms. Amanda Brazil (University of Prince Edward Island and Cross Roads Fire Department) was featured on Episode #14 of Tema Talks. During the 50-minute discussion, Amanda shared insights on: how the fire service is evolving, a new resiliency building program being implemented in volunteer fire departments in Prince Edward Island, and using research to improve the mental health of firefighters.



Engagement

Making the latest evidence on firefighter health—from FIREWELL and other researchers accessible to firefighters is important. We are using the FIREWELL website (https://firewell.ca/) and various social media platforms to keep firefighters informed on research that could help them stay healthy at work. To optimize our reach, FIREWELL research findings are presented in various formats such as videos or 1-page "normal" language summaries. In 2018, we produced 16 videos and 5 plain language summaries.

By December 2018, we had increased our social media following:

- 362 followers on Twitter
- 94 followers on Facebook

Connect with us:



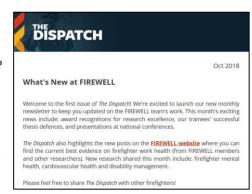
@FirewellHealth



The Dispatch

In October, we launched the inaugural issue of, *The* Dispatch, our new free monthly newsletter that shares updates on the FIREWELL team's activities, as well as new content posted on the FIREWELL website.

Subscribe to *The Dispatch* to get the latest in firefighter health research: https://firewell.ca/



CIMVHR Forum 2018



L-R: Acting Captain Steve Fraser (Vancouver Fire & Rescue Services), Chief Ken McMullen (Red Deer Emergency Services), Dr. Joy MacDermid (Western University), Ms. Robin Campbell (Dalhousie University)



The FIREWELL research team was well presented at the 9th Annual Canadian Institute for Military and Veteran Health Research (CIMVHR) Forum in Regina, Saskatchewan. Our members—researchers, trainees, and firefighters—came together from across Canada to share our firefighter health research and learn the latest on public safety personnel research.

Home Fire Safety Research

Last summer, we collaborated with the Burlington Fire Department (BFD) on a research project on home fire safety. Our summer student, Maya Senthilkumaran, applied the principles of effective knowledge translation in her creation of kitchen fire safety posters for teens and busy families. We were proud to see her posters on display at BFD's Station 1 Open House in October!





What's Coming in 2019

New Tool: Firefighter-Specific, Self-Report Survey on Work Limitations

This year we completed interviews with firefighters from across Canada and used the results to develop a new questionnaire that assesses if a firefighter has difficulty handling certain parts of the job because of a physical or mental injury. In 2019, this survey, designed by Dr. Joy MacDermid, will be tested with firefighters to confirm that it targets the high demand tasks that firefighters do on the job.

New Project: The Effectiveness of Technology-enabled Exercise Program in **Firefighters with Shoulder Pain**

The standard rehabilitation programs for shoulder pain often do not meet injured firefighters' needs to return to high levels of fitness and perform at full capacity. In the new year, Dr. Joy MacDermid and PhD trainee, Goris Nazari, will be launching a study on the effectiveness of a new intervention—a combined exercise and education program—in firefighters with shoulder pain.

Upcoming Events

BC First Responders' Mental Health Conference

Date: January 31 – February 1, 2019 Location: Richmond, BC



Team Members (in alphabetical order)

The FIREWELL partnership represents diversity in types of fire services, genders, provinces, and rural/urban contexts. Our transdisciplinary group of researchers have expertise in conducting firefighter health research.



Firefighters

- > Captain & Secretary Rob D'Amico, Hamilton Professional Fire Fighters Association
- > Firefighter Regan Bolduc, Thunder Bay Fire Rescue
- > Acting Captain Steve Fraser, Vancouver Fire & Rescue Services
- > Chief John Hay, Thunder Bay Fire Rescue
- President Louise Hine-Schmidt, Fire Service Women of Ontario
- Chief Ken McMullen, Red Deer Emergency Services
- > Chief Karen Roche, Burlington Fire Department
- Lieutenant & President Chris Ross, Montreal Firefighters Association

Researchers (*Firefighter)

- ➤ Ms. Amanda Brazil*, University of Prince Edward Island
- ➤ Ms. Robin Campbell*, Dalhousie University
- > 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
- > Ms. Jennifer Keir, University of Ottawa
- > Dr. Joy MacDermid, University of Western Ontario & McMaster University
- > Dr. Kathryn Sinden, Lakehead University
- > Dr. Susan Stock, University of Montreal
- > Dr. Williams-Bell, Durham College and University of Ontario Institute of Technology

Healthcare Collaborators

- > Mr. Nick Halmasy, After the Call
- > Dr. Ahmed Negm, McMaster University
- > Dr. Mike Pysklywec, Occupational Health and Exposure Program (Hamilton)
- > Dr. Liz Scott, Organizational Solutions Inc.

Current Trainees

- > Mr. Goris Nazari (PhD trainee, Western University, Supervisor: Dr. Joy MacDermid)
- > Ms. Sara Sayed (MSc Trainee, Lakehead University, Supervisor: Dr. Kathryn Sinden)
- > Ms. Shannon Killip (PhD trainee, McMaster University, Supervisor: Dr. Joy MacDermid)



Firefighter Partner Organizations

- > Burlington Fire Department
- > 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

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
- Dartfish Canada
- Organizational Solutions Inc.

FIREWELL Coordinating Centre

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